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About Mason

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About the University

The Mason Vision

Our Motto
Freedom and Learning

Mission
A public, comprehensive, research university established by the Commonwealth of Virginia in the National Capital Region, we are an innovative and inclusive academic community committed to creating a more just, free, and prosperous world.

Our Values

Our students come first
Our top priority is to provide students with a transformational learning experience that helps them grow as individuals, scholars and professionals

Diversity is our strength
We include and embrace a multitude of people and ideas in everything we do and respect differences

Innovation is our tradition
We strive to find new and better ways to deliver on our mission while honoring time-tested academic values

We honor freedom of thought and expression
We protect the freedom of all members of our community to seek truth and express their views

We are careful stewards
We manage the economic and natural resources entrusted to us responsibly and sustainably

We act with integrity
We hold ourselves to the highest ethical standards as educators, scholars, students and professionals

We thrive together
We nurture a positive and collaborative community that contributes to the well-being and success of every member

The Mason Graduate is...

... a well-rounded scholar:
• thinks critically and creatively and demonstrates professional competence
• possesses an inquisitive nature
• appreciates science, humanities and the arts
• skilled as a communicator
• committed to lifelong learning

... prepared to act:
• innovative, resourceful and entrepreneurial; ready to do or create a job
• interested and practiced in working with individuals from other cultures, backgrounds and perspectives
• equipped to make positive and meaningful changes in society

George Mason, the Man

George Mason was the central genius of the American Revolution. He was the primary author of both the Virginia Declaration of Rights and Virginia’s first Constitution, written in May and June of 1776, which served as examples for other states. He was highly regarded by contemporaries for his intellect and abilities. Thomas Jefferson described him as “a man of first order wisdom,” and James Madison described him as “the soundest and clearest reasoner I have ever listened to.”

Always a reluctant public servant, he has been referred to as the “forgotten” or “unknown” founder. Most content at Gunston Hall, his home in Fairfax County, he participated in politics only out of a sense of duty. Unconcerned with fame or his reputation in history, he preferred the happiness of “a private station” to “the vexations of public business.”

In 1787, Mason attended the Constitutional Convention at Philadelphia. James Madison, although known as the “Father of the Constitution,” attributed much of the final document to Mason. Mason refused, however, to sign the Constitution, as it did not guarantee the rights of the people. By his principled opposition, Mason ultimately assured the adoption of the federal Bill of Rights based on his Virginia Declaration of Rights.

As demonstrated in the language set forth in Mason’s own documents, no other founder was more acutely aware of the moral depravity of slavery and the contradiction it created. He proposed an elimination of the slave trade as a first step toward eventual emancipation. The institution of slavery was so ingrained in a pre-industrial agricultural society that it was only ended by the American Civil War.

If patriotism is defined as selfless devotion to a country conceived in liberty, then George Mason is our purest Patriot. On April 12, 1996, a seven-foot statue of him presenting his handwritten draft of the Virginia Declaration of Rights was dedicated at the university. This statue serves as a constant reminder of the ideals of freedom and learning most important to Mason the man and the university that bear his name.

University History

The idea for George Mason University was born in 1949 when the Northern Virginia University Center, essentially an adult-education extension of the University of Virginia at Charlottesville, opened under the direction of John Norville Gibson Finley. In 1955 and again in 1956,
In 2009, the university opened the Long and Kimmy Nguyen Engineering observatory and laboratories for a number of campus research centers. Its first facility dedicated to research, Research Hall, which contains an educational support facilities such as an interactive library, Mason Center for the Arts Center on the Science and Technology Campus, celebrated its grand opening in May 2010 and the Institute for Advanced Biomedical Research opened in 2015. On the Arlington Campus, Founders Hall opened in 2011. In 2016, the Point of View International Retreat and Conference Center in Lorton, Virginia, was opened, and in 2017, the Potomac Science Center opened in Woodbridge, Virginia. In 2018, the Peterson Family Health Sciences Hall opened and is the largest academic building on the Fairfax Campus.

In February 2016, Mason entered the "Highest Research Activity" tier of the Carnegie Classification of Institutions of Higher Education, joining an elite group of 115 research universities.

The university’s formal history began in 1957 as University College, the Northern Virginia branch of the University of Virginia, offering courses in engineering and the liberal arts. It opened in a renovated elementary school in the Bailey's Crossroads area with an enrollment of 17 students.

Mason was the first institution in the country to offer a program geared toward the emerging information technology field. In 1985, Mason partnered with area businesses to develop an engineering program geared toward the emerging information technology field and started what is now the Volgenau School of Engineering. With the Volgenau School, Mason was the first institution in the country to offer a doctoral degree in information technology.

The establishment in 1990 of the Institute of the Arts, which became the College of Visual and Performing Arts in 2001, solidified the university's commitment to make the arts an integral part of students' lives. The Center for the Arts and the arts complex, which includes art galleries, studio and rehearsal space, and performing venues such as Harris Theatre and TheaterSpace, are all components of the college.

The university's facilities continue to grow. In 2006, the university opened its first facility dedicated to research, Research Hall, which contains an observatory and laboratories for a number of campus research centers. In 2009, the university opened the Long and Kimmy Nguyen Engineering Building, the university's first LEED-certified building on the Fairfax Campus. Also opening in 2009 was the Art and Design Building, which is now home to the School of Art.

Masonvale, a townhome community on campus that provides short-term housing for faculty and staff, opened in late 2009. The Hylton Performing Arts Center on the Science and Technology Campus, celebrated its grand opening in May 2010 and the Institute for Advanced Biomedical Research opened in 2015. On the Arlington Campus, Founders Hall opened in 2011. In 2016, the Point of View International Retreat and Conference Center in Lorton, Virginia, was opened, and in 2017, the Potomac Science Center opened in Woodbridge, Virginia. In 2018, the Peterson Family Health Sciences Hall opened and is the largest academic building on the Fairfax Campus.

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On the Fairfax Campus, the innovative George W. Johnson Center was dedicated in April 1996. By combining student life resources with educational support facilities such as an interactive library, Mason created the learning workspace of the future. Educational administrators from around the world have toured the center.

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Accreditation

George Mason University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor’s, master’s, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of George Mason University.

Individual programs or units may also be accredited by discipline-specific agencies.

George Mason University Foundation

Mission

The George Mason University Foundation was established in 1966 to assist the university in generating private support and to manage, invest, and administer private gifts, including endowment and real property.

Campuses and Instructional Sites

Mason is a distributed university, with regional campuses in Fairfax, Arlington, and Prince William counties, and instructional sites in Loudoun County, Herndon, Lorton, Woodbridge, Front Royal and Songdo, South Korea. Each Mason campus has a distinctive academic focus that plays a critical role in the economy of its surrounding region. At each campus, students and faculty have access to all the university’s resources, while the duplication of programs and support services is minimized through the use of technology.

Fairfax Campus

Situated on 677 acres of wooded land, the Fairfax Campus offers a wealth of opportunities beyond the numerous academic programs and is the principal center for undergraduate residence and life. The resident student population of 6,023 is expected to grow to more than 7,000 during the next few years as new residential units are constructed.

The George W. Johnson Center, the first building of its kind in the country, fosters university-wide learning by integrating students’ curricular and extracurricular activities and strengthening relationships among university communities.

The Center for the Arts and the Patriot Center offer numerous opportunities to experience the arts, as well as sports and other entertainment. Professional artistic events presented on campus include music and dance from around the world and regional, national, and international visual art exhibitions. Free tickets are available to these events for full-time Mason students.

The Aquatic and Fitness Center provides state-of-the-art exercise equipment and competitive and recreational swimming to the university community and outside teams. The 120,000 square foot Recreation and Athletic Complex (formerly the PE Building) boasts three gymnasiums, two racquetball courts, two squash courts, and a two-story fitness gallery. Additional equipment and exercise space is also available in Skyline Fitness, adjacent to the residence halls.

Arlington Campus

The Arlington Campus, established in 1979, is located near Washington, D.C., on 5.2 acres of land. Mason’s most urban location, the Arlington Campus is situated conveniently in the Virginia Square neighborhood and offers easy access via Metro and key transportation routes.

The campus has a strong focus on professional and graduate education and is home to the Antonin Scalia Law School, the Schar School of Policy and Government (formerly SPGIA) and the School for Conflict Analysis and Resolution. The Arlington Campus is also home to graduate programs in nonprofit management and arts management. In addition, the School of Business now offers its Executive MBA, Accounting, MS and Real Estate Development, MS programs in Arlington. Learning Solutions is redefining the way we offer executive and professional education. In addition to these executive, graduate and professional programs, some undergraduate courses are also available in Arlington.

The Arlington Campus is home to the Mercatus Center and the Institute for Humane Studies, independent initiatives affiliated with the university. The Law and Economics Center (LAW), Center for World Religions, Diplomacy, and Conflict Resolution (S-CAR), Center for Regional Analysis (SCHAR) and the Interdisciplinary Center for Economic Science (CHSS) are some of the many research centers located at the Arlington Campus.

The campus includes four buildings: Hazel Hall, Van Metre Hall, Vernon Smith Hall and the Original Building. Van Metre Hall, which opened on the campus in 2011, provides 256,000 square feet of space for academic and student support services. In addition, the building features a 300-seat auditorium, a public plaza, and a large multipurpose room. These additional spaces enable the university to highlight and showcase much of the exciting work taking place at the Arlington Campus - as well as throughout the university - through the hosting of conferences, meetings and other events.

Science & Technology Campus

The Science & Technology Campus (SciTech), established in 1997, is the nucleus of the largest research business park in Northern Virginia, Innovation Park. The 134 acres campus in Manassas is surrounded by advanced technology companies and agencies. The campus serves all of Northern Virginia and offers convenient access to the university for citizens of Prince William, Fauquier, and western Fairfax counties; the cities of Manassas and Manassas Park; and adjoining areas to the west and south. A major focus of the campus is research and academic programs in the life sciences, including biodefense and infectious diseases, cancer proteomics, genomics, medical education and bioinformatics. Graduate studies in Advanced Biomedical Sciences are offered for students preparing for medical school or careers in health professions. Programs in nursing, teacher education, information technology, health and fitness, recreation, exercise science, health promotion, parks and outdoor recreation, sport management, therapeutic recreation, tourism and events management, and athletic training also are offered on the campus.

Campus resources available to all university students, faculty, and staff include a full-service library, large drop-in computer lab, information center, University Police, university bookstore, dining services, student lounge, shuttle bus service between the Fairfax and SciTech Campuses, and full complement of student and academic services. In addition, there are numerous opportunities to get involved in campus life through a variety of co-curricular and extracurricular activities.

Many campus facilities and services are available to serve university and community needs. The 300-seat Verizon Auditorium located in Colgan Hall boasts innovative audiovisual technologies suitable for presentations, meetings, and ceremonies, along with lobby space for receptions and displays. The campus is also home to the Virginia Serious Game Institute, located in the Katherine G. Johnson Building, where students and faculty can pursue true multidisciplinary translational
applied research in Simulation, Modeling, and Game Design and Development. A new partnership on the SciTech Campus between Mason and the Uniformed Services University allows, Army, Air Force, Marine and Navy service members to remain on active duty during two years of preparatory coursework for application to medical school.

The campus comprises eight buildings: three research facilities, two academic buildings, a student housing facility, a recreation and fitness center and a performing arts center. Graduate student housing with ground level retail space opened in fall 2012. Through mutually beneficial partnerships with local government and area businesses, the campus has positioned itself to tap into the unique assets of the surrounding community while providing access to university resources and programs for students and citizens. The university’s Biomedical Research Laboratory (BRL) opened in 2010. This regional biocontainment facility, the largest of only 12 facilities of its kind in the nation, is funded in part by the National Institute of Allergy and Infectious Diseases and houses research on emerging infectious diseases and those caused by biological threat agents.

The 110,000-square-foot Freedom Aquatic & Fitness Center offers state-of-the-art exercise equipment, group fitness programs, a full gymnasium with elevated track, and recreational and instructional swimming in a 50-meter competition pool, classrooms, and other meeting spaces. It is also home to EDGE, Mason Center for Team and Organizational Learning’s Challenge Course. The SMART Laboratory-Freedom Center is a 2,000 square foot facility that serves as the primary research facility for faculty and students in the Athletic Training and Sports Medicine degree programs.

Prince William County, the City of Manassas, and Mason have joined to create the region’s first state-of-the-art performing arts center. The Hylton Performing Arts Center, opened in 2010, provides outstanding professional performances by artists from around the world in world-class venues. With resources for community arts groups; regional business, civic, and service organizations; county and city school students and teachers; Mason students and faculty, The Hylton Performing Arts Center educates, entertains, and enriches the community.

The Governor’s School @ Innovation Park began conducting dual-enrollment classes for high school guest matriculates at the SciTech Campus in 2010.

Instructional Sites
Mason in Loudoun, conveniently located directly on Route 7 in Sterling, Virginia, connects students and businesses in one of the nation’s fastest-growing areas to one of the Commonwealth’s premier universities. Mason in Loudoun offers undergraduate and graduate level coursework in nursing, health science, education, information technology, leadership studies and management. Professional and executive education programs are also held at this site, as well as classes through the Osher Lifelong Learning Institute. Co-located with Northern Virginia Community College in leased space adjacent to their Loudoun Campus, Mason in Loudoun offers students the same privileges and access as those on Mason’s Fairfax, Arlington, and SciTech Campuses.

Smithsonian Mason School of Conservation (https://smconservation.gmu.edu) was established as a partnership between the Smithsonian Institution and George Mason University to provide experiential education for current and future generations of global conservation professionals, leaders, and practitioners. Located in in Front Royal, Virginia, the campus offers undergraduate, graduate and certificate programs for students and professionals.

Administration
Board of Visitors
Thomas M. Davis, Rector, BA, Amherst College; JD, University of Virginia Law School; Vienna, Va.
James W. Hazel, Vice Rector, JD, George Mason University School of Law; Charlottesville, Va.
Shawn Purvis, Secretary, MS, George Mason University; Manassas, Va.
Karen Alcalde, BS, George Mason University; JD, George Mason University School of Law; Arlington, Va.
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Keith Renshaw (faculty representative), PhD, University of North Carolina, Chapel Hill; Fairfax, Va.
Rebekah Pettine (undergraduate student representative), working on double major in Government and International Politics and Communication; Fairfax, Va.
Rebecca Keatinge, (graduate student representative), working on MA in Strategic Communication; Fairfax, Va.

This list reflects appointments as of July 2018.

Administration
University President: Ángel Cabrera, PhD
Provost and Executive Vice President for Academic Affairs: S. David Wu, PhD
Senior Vice President for Administration and Finance: Carol Dillon Kissal, MBA
Chief of Staff and Vice President for Communications and Marketing: Frank Neville, MBA
Vice Presidents

Vice President for Academic Innovation and New Ventures: Michelle Marks, PhD

Vice President for Compliance, Diversity and Ethics: Julian R. Williams, JD

Vice President for Enrollment Management: David Burge, MA

Vice President for Facilities: Frank Strike, MS

Vice President for Government and Community Relations: Paul J. Liberty, BA

Vice President for Information Technology: Marilyn Smith, MBA

Vice President for Research: Deborah Crawford, PhD

Vice President for University Advancement and Alumni Relations: Trishana Bowden, BS

Vice President for University Life: Rose Pascarell, MA

Assistant Vice President and Director of Intercollegiate Athletics: Brad Edwards, MBA

Deans and Directors

Dean, College of Education and Human Development: Mark Ginsberg, PhD

Dean, College of Health and Human Services: Germaine Louis, PhD

Dean, College of Humanities and Social Sciences: Ann Ardis, PhD

Dean, College of Science: Peggy Agouris, PhD

Dean, College of Visual and Performing Arts: Richard A. Davis, DFA

Dean, George Mason University Korea: Robert Matz, PhD

Dean, Honors College: Zofia Burr, PhD

Dean, School of Business: Maury Peiperl, PhD

Dean, School for Conflict Analysis and Resolution: Kevin Avruch, PhD

Dean, Antonin Scalia Law School: Henry Butler, JD

Dean, Schar School of Policy and Government: Mark Rozell, PhD

Dean, Volgenau School of Engineering: Kenneth S. Ball, PhD

Office of the Provost - Academic Affairs

Associate Provost for Academic Administration: Renate Guilford, MA

Associate Provost for Academic Initiatives and Services: Janette Kenner Muir, PhD

Associate Provost for Faculty Affairs and Development: Kimberly Eby, PhD

Associate Provost for Institutional Research and Assessment: Gesele Durham, PhD

Associate Provost for Sustainable Earth: Cody Edwards, PhD

Associate Provost for Undergraduate Education: Bethany M. Usher, PhD

University Registrar: Janette Kenner Muir, PhD (interim)

University Libraries

University Librarian: John Zenelis, MLS, MA

Faculty

Instructional and Administrative Faculty 2019 - 20

The faculty list reflects appointments as of March 2019.

A

Abdelfattah, Belal, Assistant Professor of Information Systems and Operations Management. BBA 2004, MBA 2006, PhD 2013, University of Texas at El Paso.

Abramson, Alan J., Professor, Schar School of Policy and Government. BA 1976, Wesleyan University; MA 1977, MPhil 1979, PhD 1990, Yale University.

Acs, Zoltan J., University Professor of Public Policy. Director, Center for Entrepreneurship and Public Policy. BA 1972, Cleveland State University; MA 1974, PhD 1980, The New School.

Adams, Leah, Assistant Professor, Psychology and Women & Gender Studies. BS 2008, University of Richmond; PhD 2014, George Mason University.


Agnarsson, Geir, Associate Professor, Mathematical Sciences. BS 1990, University of Iceland; PhD 1996, University of California, Berkeley.

Agoston, Kathryn E., Graduate Fellowship Director, Office of the Provost. BS 1993, Georgetown University; MA 96, PhD 2002, University of Texas at Austin.

Agouris, Peggy, Professor and Dean, College of Science. Director, Center for Earth Observing and Space Research. Dipl Eng 1986, National Technical University of Athens, Greece; MS 1988, PhD 1992, The Ohio State University.

Agrawal, Nitin, Assistant Professor, Bioengineering, Volgenau School of Engineering. BE 1999, Regional Engineering College, Durgapur, India; PhD 2006, Texas A&M University.

Aguirre, A. Alonso, Chair and Associate Professor, Environmental Science and Policy. PhD 1990, Colorado State University.

Ahmadi, Pouyan, Assistant Professor, Information Sciences and Technology, Volgenau School of Engineering. BS 2006, Azad University; MS 2009, Iran University of Science and Technology; PhD 2015, George Mason University.

Ahn, Changwoo, Professor, Environmental Science and Policy. BS 1992, MS 1996, Seoul National University; PhD 2001, The Ohio State University.

Aidoo, Abena, Associate Professor, Tourism and Events Management, School of Recreation, Health, and Tourism. BA 1997, University of Ghana; MHRD 2002, Clemson University; PhD 2010, University of Delaware.

Ainsworth, Melissa, Assistant Professor, Graduate School of Education in the College of Education and Human Development. BA 1986, West Virginia University; MA 1988, University of Wyoming; MEd 1999, PhD 2014, George Mason University.

Albanese, Denise, Director, Cultural Studies PhD Program; Professor, English and Cultural Studies. BA 1978, New York University; PhD 1987, Stanford University.

Albanese, Massimiliano, Associate Professor, Information Sciences and Technology, Volgenau School of Engineering. BS, MS 2002, Laurea; PhD 2005, University of Naples "Federico II".

Aldatmaz, Serdar, Assistant Professor of Finance. BA 2008, Koc University; PhD 2013, University of North Carolina at Chapel Hill.

Alemi, Farrokh, Professor, Health Administration and Policy. BS 1976, MS 1978, PhD 1983, University of Wisconsin-Madison.

Aler, John, Associate Professor of Music. BM 1971, MM 1972, Catholic University of America.

Al-Seoudi, Nizar Jebril Ibrahim, Term Assistant Professor of Arabic. BA 2002, MA 2006, PhD 2011 University of Jordan, Amman, Jordan.

Allbeck, Jan M., Associate Dean, Honors College. Associate Professor, Computer Science. BS 1995, Bloomsburg University; MS 1997, PhD 2009, University of Pennsylvania.

Allen, Susan H., Associate Professor of Conflict Analysis and Resolution, School for Conflict Analysis and Resolution. BA 1992, University of Virginia; MS 1995, PhD 2000, George Mason University.

Ambegaonkar, Jatin, Associate Professor, Athletic Training, School of Recreation, Health and Tourism. BS 1998, T. N. Medical College, India; MS 2003, Springfield College; PhD 2006, University of North Carolina, Greensboro.

Amireh, Amal, Associate Professor, English. BA 1983, Birzeit University, Palestine; MA 1987, PhD 1997, Boston University.

Amiri, Mehdi, Assistant Professor. BS 2006, University of Tehran; 2011 PhD, Louisiana State University.

Ammann, Paul E., Associate Professor, Computer Science, Volgenau School of Engineering. AB 1983, Dartmouth College; MS 1985, PhD 1988, University of Virginia.

Anacker, Katrin B., Associate Professor, Schar School of Policy and Government. MA 1999, MCRP 1999, PhD 2006, Ohio State University.

Anand, Priyanka, Associate Professor of Health Administration and Policy. BA 2002, University of California, Berkeley; MA 2009, MPhil 2009, PhD 2012, Yale University.

Andalib, Ali, Professor and Associate Dean for Research, College of Science. BA 1983, University of South Carolina; PhD 1990, University of California, Los Angeles.

Anderson, Daniel M., Professor, Mathematical Sciences. BA 1989, St. Olaf College; PhD 1993, Northwestern University.


Anderson, Jacqueline, Director, Human Resources, College of Education and Human Development. BA 1988, Saint Leo University.

Anderson, Mike, Assistant Professor of Finance. BS 2001, California Polytechnic State University; MS 2003, City University of New York, Baruch College.

Anderson, Nancy, Training and Technical Assistant Coordinator, College of Education and Human Development. BA 1982, Gallaudet University; MEd 1985, Western Maryland College.

Andre, Matthew J., Assistant Professor in the School of Recreation, Health and Tourism in the College of Education and Human Development. BS 2008, MS 2010, George Mason University; PhD 2014, University of Kansas.

Andrea, Kevin, Instructor of Computer Science. BS 2012, MS 2014, George Mason University.

Antil, Harbir, Associate Professor, Mathematical Sciences. BS 2004, St. Stephen's College; MS 2006, PhD 2009, University of Houston.

Appel, Robert, Director, Marketing and Communications, School of Business. BS 1979, University of Maryland.

Ardis, Ann L., Professor and Dean, College of Humanities and Social Sciences. BA 1979, University of Kansas; MA 1982, PhD 1988, University of Virginia.

Ascoli, Giorgio A., University Professor, Bioengineering, Volgenau School of Engineering. Director, Center for Neural Informatics. BS 1991, Scuola Normale Superiore, Italy; MS 1993, Pisa University, Italy; PhD 1996, Scuola Normale Superiore.

Asen, Sheryl, Assistant Professor, Education, Graduate School of Education. BS 1974, State University of New York; MS 1977, University of South Carolina; PhD 1997, George Mason University.

Ashley, Jennifer, Term Assistant Professor of Global Affairs, BA 1999, Kenyon College; MA 2004, PhD 2011, Brown University.


Atkinson, Jennifer H., Associate Professor, English. BA 1978, Wesleyan University; MFA 1984, MA 1985, University of Iowa.

Auerswald, Philip E., Associate Professor, Schar School of Policy and Government. BA 1988, Yale University; MA 1995, PhD 1999, University of Washington.

Auffret, Jean-Pierre, Instructor of Technology Management and Director, Research Partnerships and Grant Initiatives. BS 1979, Duke University; MBA 1982, University of Virginia; PhD 1999, American University.

Augustyn, Kevin, Director of Development, College of Humanities and Social Sciences. BA 1999, Franciscan University of Steubenville; STB 2004, The Pontifical Lateran University; MDiv. 2004, St. John Vianney Theological Seminary; MPhil. 2015, Catholic University of America.
Austin, Leila, Assistant Professor of Business Foundations. BA 1989, Bryn Mawr College; MA 1993, Johns Hopkins University; PhD 2006, Columbia University.

Avila, Kimberly A. Assistant Professor, Graduate School of Education in the College of Education and Human Development. BS 1998, Colorado State University; MA 2000, University of Northern Colorado.

Avramovic, Ivan, Instructor of Computer Science. BS 1997, University of Illinois, Urbana-Champaign; MS 2012, George Mason University.

Avramovic, Sanja, Assistant Professor of Health Administration and Policy. MS, University of Belgrade; PhD 2015, George Mason University.

Avruch, Kevin Andrew, Dean and Henry Hart Rice Professor of Conflict Resolution and Anthropology, School for Conflict Analysis and Resolution. BA 1972, University of Chicago; MA 1973, PhD 1978, University of California, San Diego.

Axtell, Robert, Professor, Computational and Data Sciences. BS 1983, University of Detroit; PhD 1992, Carnegie Mellon University.

Aydin, Hakan, Professor, Computer Science, Volgenau School of Engineering. BS 1991, MS 1994, Istanbul Technical University; PhD 2001, University of Pittsburgh.

Ayrsworth, Julie Higgins, Assistant Professor, School of Recreation, Health and Tourism in the College of Education and Human Development. BS 1998, MA 2003, PhD 2006, The Ohio State University.

Azam Salahuddin, Syed, Director of Fiscal Services, Schar School of Policy and Government. BS 1996, Indiana University; MBA 2003, Vanderbilt University.

Azar, Tawnya, Term Assistant Professor of English. BA 2007, Randolph College; MA 2009, PhD 2018, George Washington University.

B

Bailey, Charles, Distinguished Professor, Biology. Executive Director, National Center for Biodefense and Infectious Diseases. BS 1965, MS 1966, PhD 1968, Oklahoma State University.

Baily, Supriya, Associate Professor, Education, Graduate School of Education. BA 1995, University of Nevada, Reno; MA 1997, George Washington University; PhD 2008, George Mason University.

Baker, Courtney K., Assistant Professor, Mathematics Leadership, Graduate School of Education in the College of Education and Human Development. BS 1997, Virginia Polytechnic Institute and State University; MEd 2008, PhD 2014, George Mason University.

Baker, Pamela, Associate Professor, Education, Graduate School of Education. BS 1984, MEd 1987, College of William and Mary; EdD 2002, Bowling Green State University.


Baker, Sarah, Term Assistant Professor of English. BA 1988, Wesleyan University; MA 2007, George Mason University.

Balakerskaia, Anna, Term Professor of Music. MM 1969, DMA 1974, St. Petersburg State Conservatory, Russia.

Baldimtsi, Foteini, Assistant Professor, Computer Science, Volgenau School of Engineering. BS 2008, MS 2011, PhD 2014, Brown University.

Baldwin, Caryl L., Associate Professor, Psychology. BA 1987, University of Nebraska, Lincoln; MA 1994, PhD 1997 University of South Dakota.

Ball, Kenneth, Dean, Volgenau School of Engineering. BS 1982, Lehigh University; MSME 1984, PhD 1987, Drexel University; PE 1992 Texas.

Bannan-Ritland, Brenda, Associate Professor, Education, Graduate School of Education. BS 1986, Millersville University; MS 1991, Bloomsburg University; PhD 1995, Pennsylvania State University.

Banville, Dominique, Associate Professor, Physical Education, School of Recreation, Health and Tourism. BPE 1990, MS 1994, PhD 1998, Laval University, Canada.

Bar, Brian D., Assistant Director of Career Development, Schar School of Policy and Government. BS 2009, University of Wisconsin, Green Bay; MS 2012, University of Wisconsin, Madison.

Baranova, Anna, Professor, Systems Biology. Director, Chronic Metabolic and Rare Diseases Systems Biology Initiative. MS 1995, PhD 1998, Moscow State University; DSc 2004, Vavilov Institute of General Genetics, Russian Academy of Sciences.

Barbará, Daniel, Professor, Computer Science, Volgenau School of Engineering. BS 1975, Universidad Metropolitana, Caracas, Venezuela; MSE 1981, PhD 1985, Princeton University.

Barese, Eric, Associate Director of Grants & Corporate Relations, School of Business. BA 1997, College of the Holy Cross.

Barnes, Steven, Associate Professor, History. Director of the Eurasian Studies Program. BA 1993, Harvard University; MA 1997, PhD 2003, Stanford University.

Barreto, Ernest, Professor, Physics and Astronomy and The Krasnow Institute for Advanced Study. BS 1990, University of Chicago; MS 1995, PhD 1996, University of Maryland.

Barthold, Christine H., Assistant Professor, Graduate School of Education in the College of Education and Human Development. BA 1995, Moravian College; MEd 1999, Temple University; PhD 2007, University of Maryland.

Barton, Jr., Oscar, Professor and Chair, Mechanical Engineering, Volgenau School of Engineering. BS 1984, Tuskegee University; MS 1987, PhD 1993, Howard University.

Batarseh, Feras A., Assistant Professor, Geography and Geoinformation Science. BS 2006, Princess Sumaya University for Technology, Amman, Jordan; MS 2008, PhD 2011, University of Central Florida.

Bauman, Lisa Passaglia, Term Associate Professor of Art History. BA 1980, Saint Louis University; PhD 1990, Northwestern University.

Baylor, David M., Operations Director, Hylton Performing Arts Center. BA 1989, George Mason University.

Beard, Nicole M., Assistant Professor in the Graduate School of Education in the College of Education and Human Development. BA 1995, Georgetown University; MA 1996, EdS 1998, James Madison University; PhD 2006, University of Virginia.
Bean, Mandy, Assistant Professor, College of Education and Human Development. BA, MAT 1996, University of Virginia; PhD 2015, University of North Carolina at Chapel Hill.

Becker, Peter A., Professor, Physics and Astronomy. BA 1982, Rutgers University; MS 1985, PhD 1987, University of Colorado, Boulder.

Beckman, Elizabeth E., Archives and Manuscripts Librarian, University Libraries. BA 2010, Kenyon College; MLS 2012, University of Pittsburgh.

Beheshti, Ali, Assistant Professor, Computer Science, Volgenau School of Engineering. BSc 2004, MSc 2007, Isfahan University of Technology, Esfahan, Iran; PhD 2013 Louisiana State University.

Bell, Jonathan, Assistant Professor, Computer Science, Volgenau School of Engineering. BS 2010, MS 2011, MPhil 2014, PhD 2016, Columbia University.

Bell, Kathleen K., Grants, Planning and Assessment Analytics Officer, University Libraries. BA 2008, Virginia Intermont College; MA 2010, MLS 2011, Texas Woman's University.

Belles, Gabriele B., Assistant Professor, Physics and Astronomy. MS 1982, Karl Franzens University, Graz, Austria; Ph.D. 1986, Radboud University, Nijmegen, Netherlands; MSS 1995, International Space University, Strasbourg, France.

Bellos, Ioannis, Assistant Professor of Information Systems and Operations Management. MS 2006, Aristotle University of Thessaloniki; PhD 2012, Georgia Institute of Technology.

Bemak, Frederick, Professor, Education, Graduate School of Education. BA 1970, Boston University; MEd 1971, EdD 1975, University of Massachusetts.

Bennett, James T., William P. Snively Professor of Political Economy and Public Policy. BS 1964, MS 1966, PhD 1970, Case Western Reserve University.

Berg, Scott, Term Associate Professor, English. BA 1992, University of Minnesota; MA 1995, Miami University; MFA 1997, George Mason University.


Berlin, F. Brett, Instructor, Data Analytics Engineering, Volgenau School of Engineering. BS 1972, USAF Academy; MA 1979, University of Texas.


Berry, Alok K., Associate Professor, Electrical and Computer Engineering, Volgenau School of Engineering. BS 1967, MS 1969, University of Delhi; MS 1981, PhD 1985, University of Missouri.

Berry, Ivory M., Director of Student Success, College of Education and Human Development. BS 2007, Southern University and A & M College; MA 2008, PhD 2014, University of Illinois.

Best, Amy L., Chair and Professor, Sociology. BA 1992, Ithaca College; MA 1995, PhD 1998, Syracuse University.

Biggs, Regina, Assistant Professor, Education, Graduate School of Education. BS, Eastern Michigan University; MA, Roosevelt University; PhD, Loyola University.

Bighamian, Ramin, BS 2008, MS 2011, Isfahan University of Technology; PhD 2017, University of Maryland.

Billingham, Lisa A., Professor of Music and Director of Graduate Music. BMed 1986, Indiana University; MM 1994, University of Missouri, Kansas City Conservatory; DMA 2001, University of Arizona.

Binning, Dave, Instructor and Director of Assessment and Accreditation, Civil, Environmental and Infrastructure Engineering, Volgenau School of Engineering. BS 1962, MS 1973, University of Delaware.

Birchard, Geoffrey French, Associate Professor, Biology. BA 1975, Colorado College; MA 2019, University of Montana; PhD 1985, Dartmouth Medical School.

Bishop, Barney, Associate Professor, Chemistry and Biochemistry. BS 1991, College of William and Mary; PhD 1997, University of North Carolina, Chapel Hill.


Blair, Virginia, Term Assistant Professor of Health Administration and Policy. Diploma in Nursing 1967, St Agnes School of Nursing; BS 1982, Pacific Western University; MS 1997, National College of Education; DHA 2008, University of Phoenix.

Blaisten-Barojas, Estela, Professor, Computational and Data Sciences. BS 1964, National University of Tucuman, Argentina; MS 1970, PhD 1974, Sorbonne University (former Universite de Paris VI), France.

Blank-Godlove, Juliet M., Dean of Students, University Life. BS 1993, MA 1998, West Virginia University.

Blue, Kimberly, Graduate Career Manager, School of Business. BA 1988, MA 1991, West Virginia University.

Bockman, Johanna K., Associate Professor, Sociology and Anthropology, Global Affairs Program. BA 1991, University of California, Los Angeles; MA 1995, PhD 2000, University of California, San Diego.


Boettke, Peter J., University Professor of Economics. BA 1983, Grove City College; PhD 1989, George Mason University.

Boicu, Mihai, Associate Professor, Information Science and Technology, Volgenau School of Engineering. Associate Director of Learning Agents Center. PhD 2002, George Mason University.

Bondok, Doaa, Assistant Professor, Civil, Environmental and Infrastructure Engineering, Volgenau School of Engineering. BS 2008, MS 2012, PhD 2017, University of Missouri-Columbia.
Bonilla, Carrie, Term Assistant Professor of Spanish. BS 2004, Indiana University, Bloomington; MA 2006, New York University, Madrid; PhD 2012, University of Pittsburgh.

Bono, John, Assistant Professor, Information Sciences and Technology, Volgenau School of Engineering. BS 2001, The Catholic University of America; MS 2004, University of Maryland University College; PhD 2012, Nova Southeastern University.

Borup, Jered, Assistant Professor, Learning Technologies in Schools, Graduate School of Education in the College of Education and Human Development. BS 2003, Brigham Young University; MEd 2006, Idaho State University.

Botan, Carl, Professor, Communication. BA 1972, Western Michigan University; MA 1982, PhD 1985, Wayne State University.

Boudinot, Patricia, Assistant Professor, Geography and Geoinformation Science. BS 1976, MS 1978, University of Nice.

Boudreaux, Donald J., Professor, Economics. BA 1980, Nicholls State University; MA 1982, New York University; PhD 1986, Auburn University; JD 1992, University of Virginia.

Bousel, Paul, Associate Director, Academic Advising Center. BA 1975, Hofstra University; MA 1977, George Washington University.

Bowdoin, Jessica, Head, Access Services, University Libraries. BA 1996, College of William and Mary; MLIS 1999, University of Illinois, Urbana-Champaign.

Boybeyi, Zafer, Associate Professor, Atmospheric, Oceanic and Earth Sciences. BS 1984, Istanbul Technical University; MS 1990, San Jose State University; PhD 1993, North Carolina State University.


Brandhorst, Kurt, Philosophy Instruction. BA 1989, The University of South Carolina; MA 1992, Washington University in St Louis; PhD 2006, University of Dundee.

Bray, Laurence C., Assistant Professor and Associate Chair, Bioengineering, Volgenau School of Engineering. BS 2004, MS 2005, Clemson University; PhD 2010, University of Nevada.

Brayley, Russell, Professor, Tourism and Events Management, School of Recreation, Health and Tourism. BS 1977, MA 1986, Brigham Young University; PhD 1990, Texas A&M University.

Breglia, Lisa, Director of Global Affairs Program and Associate Professor of Global Affairs. BA 1994, MA 1996, University of Florida; PhD 2003, Rice University.

Brewster, Robin, Term Assistant Professor of Nursing. BS 1982, University of Illinois, Urbana-Champaign; BSN 2005, DNP 2014, George Mason University.

Brielmaier Sontag, Jennifer, Term Assistant Professor of Psychology. BS 2004, Virginia Polytechnic Institute and State University; MA 2007, PhD 2010, George Mason University.

Brigham, Frederick, Professor, Education, Graduate School of Education. BS 1977, MEd 1983, Bowling Green State University; PhD 1992, Purdue University.

Bristol, Joan C., Associate Professor, History. BA 1990, Bryn Mawr College; MA 1994, San Francisco State University; PhD 2001, University of Pennsylvania.

Britt, Thomas, Associate Professor, Film and Video Studies. BA 2002, Emory & Henry College; MFA 2005, Ohio University.

Brie, Courtney A., Associate Professor, English. BA 1994, College of William and Mary; MFA 2001, New York University.


Broekelman-Post, Melissa, Associate Professor and Basic Course Director, Communication. BA 2004, MA 2005, Kansas State University; PhD 2009, Ohio University.

Broshears, Robert, Instructor of Accounting. BA 1978, Indiana University; MA 1984, University of Arizona.

Brouse, Peggy S., Associate Professor, Systems Engineering and Operations Research, Volgenau School of Engineering. BS 1978, American University; MBA 1986, Marymount University; PhD 1992, George Mason University.

Brown, Elizabeth Levine, Associate Professor, Education, Graduate School of Education. BA 2001, Colgate University; MAT 2004, American University; MA 2007, Washington College; PhD 2011, University of Pittsburgh.


Brown, Stephen, Term Assistant Professor, Health Administration and Policy. BS 1974, University of Virginia; MS 1983, University of South Carolina.

Brown-Rolle, Tomeka, Clinical Placement Coordinator and Term Instructor, School of Nursing. BS 2009, University of Central Florida; MSN 2016, George Mason University.

Broz, William, Professor of Education, Graduate School of Education. BA 1977, University of North Carolina; MEd 1979, PhD 1982, University of South Carolina.

Bruno, Irene, Associate Professor, Information Sciences and Technology, Volgenau School of Engineering. BS 1994, University of Pittsburgh; MEd 1991, Pennsylvania State University; PhD 2003, Capella University.

Bryan, Alec, Associate Director of Development, College of Humanities and Social Sciences. BS, BA 2004, University of Florida; MA 2009, University of North Florida.

Buchy, Jaclyn, Senior Assistant Dean, Graduate Enrollment, School of Business. BBA 2004, James Madison University; MPS 2010, Georgetown University.

Buehl, Michelle, Professor, Education, Graduate School of Education. BA 1997, Hollins College; MA 2002, PhD 2003, University of Maryland.

Burek, Jacqueline, Assistant Professor, English. BA 2010, Cornell University; MA 2014, PhD 2017, University of Pennsylvania.

Burge, David, Vice President for Enrollment Management. BGS, MS, University of Kansas.
Burroughs, James N., Term Associate Professor and Director of the Masters of Public Administration Program, Schar School of Policy and Government. BS 1977, James Madison University; JD 1981, College of William and Mary; MPA 1994, George Mason University.


Burroughs, James N., Term Associate Professor and Director of the Masters of Public Administration Program, Schar School of Policy and Government. BS 1977, James Madison University; JD 1981, College of William and Mary; MPA 1994, George Mason University.

Burs, Natalie J., Assistant Professor, Atmospheric, Oceanic and Earth Sciences. BS 2003, BS Honours 2004, MS 2006, PhD 2010, University of Cape Town.

Burmeister, Steven G., Assistant Professor, Forensic Science. BS 1982, Susquehanna University; MS 1984, University of Pittsburgh.

Burns, Carla, Term Assistant Professor of Spanish. BA 2003, MA 2005, George Mason University.

Burt, Ahsan I., Assistant Director, Virginia Serious Game Institute. BS 2009, Virginia Polytechnic Institute and State University; MS 2011, Texas A&M; PhD 2016, University of Texas, Austin.


Butt, Ahsan I., Associate Professor, Schar School of Policy and Government. BA 2006, MA 2008, PhD 2012, University of Chicago.

Button, Kenneth J., University Professor of Public Policy, Schar School of Policy and Government. BA 1970, University of East Anglia, United Kingdom; MA 1971, University of Leeds, United Kingdom; PhD 1981, Loughborough University, United Kingdom.

C

Cabrera, Ángel, University President. BS 1990, MS 1990, Universidad Politécnica de Madrid, Spain; MS 1993, PhD 1995, Georgia Institute of Technology.

Cai, Xiaomei, Associate Professor, Communication. BA 1993, Jilin University; MA, Peking University; MA 1998, PhD 2001, Indiana University.

Calcagno, Theresa, IT and Engineering Librarian, University Libraries. BA 1979, Case Western Reserve University; MS 1982, Rutgers University; MLIS 1999, University of Maryland.

Calhoun, Chris, Adjunct Instructor. BS 2009, Virginia Polytechnic Institute and State University; MS 2011, Texas A&M; PhD 2016, University of Virginia.
Caswell, Shane, Professor, Athletic Training, School of Recreation, Health, and Tourism. BS 1999, State University of New York, Brockport; MS 2000, PhD 2003, Ohio University.

Cattaneo, Lauren, Associate Professor, Psychology. BA 1992, University of Michigan, Ann Arbor; MA 1997, PhD 2001, University of Maryland, College Park.

Cebral, Juan R., Professor, Bioengineering, Volgenau School of Engineering. BS 1991, University of Buenos Aires; PhD 1996, George Mason University.

Cengiz, Mahmut, Research Assistant Professor, Schar School of Policy and Government. BA 1996, Turkish National Police Academy (University); MA 2004, Kirikkal University, Turkey; MIS 2007, American University; PhD 2009, Ankara University, Turkey; PhD 2010, George Mason University.

Chakravarty, Urvashi, Assistant Professor, English. BA 2003, Columbia University; PhD 2010, University of Pennsylvania.

Chalip, Laurence, Professor in the School of Recreation, Health and Tourism in the College of Education and Human Development. AB 1972, University of California, Berkeley; MSocSc 1979, University of Waikato, New Zealand; AM 1983, PhD 1988, University of Chicago.

Champagne, Marie, Coordinator of Student Services, Division of Advanced Professional Teacher Development & International Education in the College of Education and Human Development. BA 1994, Smith College; MA 2000, American University.

Chandhoke, Vikas, Professor, School of Systems Biology. BPharm 1986, MDsc 1986, Birla Institute of Technology and Science; PhD 1991, University of Maine.


Chang, Kathleen, Clinical Instructor, School of Nursing. BSN 1979, Long Island University; MSN Teacher’s College.

Chang, Michael G., Associate Professor, History. AB 1992, Princeton University; PhD 2001, University of California, San Diego.

Chang, Shanti, Term Assistant Professor, School of Nursing. BSN 2010, James Madison University; DNP 2016, George Mason University.

Chaplin, Tara, Associate Professor, Psychology. BA 1997, MS 1999, University of Delaware; PhD 2003, Pennsylvania State University.

Chapman, Jeanette, Senior Research Associate and Deputy Director of the Stephens S. Fuller Institute, Schar School of Policy and Government. BA 2006, University of Virginia; MPP 2015, George Mason University.

Charles, Hans, Assistant Professor, Film and Video Studies. BA 2000, Spring Arbor University; MFA 2011, Howard University.

Chavis, J. Charles, Assistant Professor of Conflict Resolution and History, School for Conflict Analysis and Resolution. BA 2012, UNC-Greensboro; MTS 2014, Vanderbilt University; PhD 2018, Morgan State University.

Cheema, Jehanzeb, Assistant Professor of Information Systems and Operations Management. BA 1999, University of the Punjab; BS,BA 2002, Slippery Rock University of Pennsylvania; MA 2003, PhD 2006, University of Wisconsin-Milwaukee; PhD 2012, George Mason University.

Chen, Cher Weixia, Associate Professor, School of Integrative Studies. LLB 2000, Beijing University, China; LLM 2001, National University of Singapore; MA 2003, PhD 2008, University of Southern California.

Chen, Chun Hung, Professor, Systems Engineering and Operations Research. BS 1987, National Chiao-Tung University; MS 1989, National Taiwan University; PhD 1994, Harvard University.

Chen, Jim, Professor, Computer Science, Volgenau School of Engineering. BS 1983, MS 1986, Southwest Jiao Tong University; PhD 1995, University of Central Florida.

Chen, Long, Associate Professor of Accounting. BS 2000, Beijing Technology and Business University; MS 2005, PhD 2008, Washington University, St. Louis.

Chen, Min, Assistant Professor of Information Systems and Operations Management. BS 2003, MS 2005 International University in Germany; PhD 2011, University of Texas at Dallas.

Chen, Songqing, Professor, Computer Science, Volgenau School of Engineering. BS 1997, MS 1999, Huazhong University; PhD 2004, College of William and Mary.

Chen, Xi, Term Instructor, Chinese. BA 1999, East China Normal University, Shanghai; MED 2002, George Mason University.

Chen, Xiang, Assistant Professor, Electrical and Computer Engineering, Volgenau School of Engineering. BA 2010, Northeastern University; MS 2012, University of Pittsburgh.

Chen, Ya-Han (Chris), Director of Finance, College of Education and Human Development. BBA 2000, MA 2002, National Taiwan University; MA 2004, Ohio State University; MBA 2012, George Mason University.

Cheng, Constant, Assistant Professor of Marketing. BS 1982, Brigham Young University, Hawaii; MBA 1983, Arizona State University; DES 1994, The Graduate Institute; DBA 2014, Swiss Management.

Cheng, Yue, Assistant Professor, Computer Science, Volgenau School of Engineering. B.Eng. 2009, Beijing University of Posts and Telecommunications; PhD 2017, Virginia Polytechnic Institute and State University.

Cherubin, Rose M., Associate Professor, Philosophy. BFA 1984, School of Visual Arts, New York City; PhD 1996, Graduate School, City University of New York.

Cheskin, Lawrence J., Professor and Chair, Department of Nutrition and Food Studies; Interim Chair of Global and Community Health. BA 1977, City University of New York; MD 1980, Dartmouth Medical School.

Chesler, Giovanna, Director and Associate Professor, Film and Video Studies. BA 1996, University of Virginia; MFA 2002, San Francisco State University.

Chitnis, Parag V., Faculty Fellow, Graduation Education, Office of the Provost and Assistant Professor, Bioengineering, Volgenau School of Engineering. BS 2000, West Virginia Wesleyan College; MS 2002, PhD 2007, Boston University.
Chiu, Long, Associate Professor, Atmospheric, Oceanic and Earth Science. BS 1974, University of Miami; ScD 1980, Massachusetts Institute of Technology.

Christophe, Stephen, Professor of Finance. BA 1980, Colby College; MBA 1982, College of William and Mary; PhD 1992, University of North Carolina.

Chrosniak, Linda D., Term Associate Professor, Psychology. BA 1981, University of Texas, Dallas; PhD 1991, George Washington University.

Chung, Rita Chi-Ying, Professor, Education, Graduate School of Education. BA 1981, MA 1983, PhD 1989, Victoria University of Wellington, New Zealand.

Chung, Yoonsun, Associate Professor, Assistive and Special Education Technology, Helen A. Kellar Institute for Human disAbilities, College of Education and Human Development. BS 1994, George Mason University; MEng 1996, Cornell University; PhD 2004, George Mason University.

Cioffi-Revilla, Claudio, University Professor, Computational and Data Sciences. BS 1969, Instituto Patria, Mexico City; PhD 1975, University of Florence, Italy; PhD 1979, State University of New York.

Clare, Kathleen M., Assistant Dean of Undergraduate Academic Affairs, College of Humanities and Social Sciences. BA 2001, MFA 2005, George Mason University.

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Emmott Holman, BS, MA, PhD, Associate Professor Emeritus of Philosophy
Lois Horton, BA, MA, PhD, Professor Emerita of History
Andrew Hughes Hallett, BA, MS, Dphil, University Professor Emeritus of Public Policy and Economics
Lorna Irvine, BA, MA, PhD, Professor Emerita of English
Jenifer Isbister, Professor Emerita of Molecular and Microbiology
Joan P. Isenberg, BS, MS, EdD, Professor Emerita of Education
Evelyn Jacob, BA, PhD, Professor Emerita of Education
Rosemary Jann, BA, MA, PhD, Professor Emerita of English
Helen Jenkins, MSN, PhD, Professor Emerita of Nursing
Faculty Emeriti

Ronald Jensen, BA, MA, PhD, Associate Professor Emeritus of History

George W. Johnson, BA, MA, PhD, President Emeritus, Professor Emeritus of English

Robert Dail Johnston, BS, MS, PhD, Associate Professor Emeritus of Finance

Carol Kaffenberger, BS, MEd, PhD, Associate Professor Emerita of Education

Richard Kamenitzer, BS, MBA, LLB, Director Emeritus of the Arts Management Program

Joseph Kanyan, BS, MM, DMA, Associate Professor Emeritus of Music

Deborah E. Kaplan, BA, MA, PhD, Associate Professor Emerita of English

Don E. Kash, BA, MA, PhD, Emeritus Professor of Public Policy

Donald Preston Kelso, BS, MS, PhD, Associate Professor Emeritus of Environmental Science and Policy

Jerome Kerman, BA, MS, PhD, Professor Emeritus of Behavioral Analysis

Peter Klappert, AB, MA, MFA, Professor Emeritus of English

Steven M. Klein, BA, MA, PhD, Instructor Emeritus of Communication

Barbara Knight, BA, MA, PhD, Associate Professor Emerita of Public and International Affairs

David Kravit, BA, AM, PhD, Professor Emeritus of Management

Howard Vincent Kurtz, BFA, MFA, Professor Emeritus of Theater

Christina Langley, BSN, MPH, PhD, Associate Professor Emerita of Nursing

Elyse Lehman, BA, MA, PhD, Professor Emerita of Psychology

Raymond G. LePage, BA, MA, PhD, Associate Professor Emeritus of French

Jack Levy, BA, MA, PhD, Professor Emeritus of Education

Ronald Levy, AB, AM, PhD, Emeritus Professor Mathematical Sciences

Bernard Joseph Lieb, BS, MS, PhD, Professor Emeritus of Physics and Astronomy

Jeng-Eng Lin, PhD, Associate Professor Emerita of Mathematical Sciences

Cynthia M. Lont, AA, BA, MA, PhD, Professor Emerita of Communication

Sara Looney, BA, MA, PhD, Associate Professor Emerita of Communication

Yehuda Lukacs, BA, MS, PhD, Associate Professor Emeritus of Global Affairs

Randolph Lytton, BA, MA, PhD, Associate Professor Emeritus of History

James Eugene Maddux, BA, MA, PhD, Professor Emeritus of Psychology

Julianne Mahler, BA, MA, PhD, Professor Emerita of Public and International Affairs

Catherine Malloy, BSN, MPH, DrPH, Professor Emerita of Health, Fitness, and Recreation Resources

Bruce Manchester, BS, MA, PhD, Professor Emeritus of Communication

William R. Martin, BA, MA, PhD, Professor Emeritus of Education

Stephen Mastrofski, BA, PhD, University Professor Emeritus

Margo Mastropieri, BA, MEd, PhD, University Professor Emeritus of Education

Carol C. Mattusch, BA, PhD, Professor Emerita of History and Art History

Joseph Maxwell, BA, PhD, Professor Emeritus of Education

William J. McAuley, BA, PhD, Professor Emeritus of Communication

Kevin McCrohan, BS, MBA, PhD, Professor Emeritus of Marketing

Michael J. McDermott, AB, PhL, Associate Professor Emeritus of Philosophy and Religious Studies and Registrar Emeritus

Hazel M. McFerson, BA, MA, PhD, Professor Emerita of International Affairs

Gustavo Mellander, AB, MA, PhD, DHL, Dean Emeritus of the Graduate School of Education

Barbara Melosh, BA, MA, PhD, Professor Emerita of English

Alan G. Merten, BS, MS, PhD, President Emeritus

Henry P. Meyer, BA, MA, PhD, Associate ProfessorEmeritus of French

Margaret Miklanice, LPN, ADN, BSN, MSN, PhD, Associate Professor Emerita of Nursing

John Miller, BA, MS, PhD, Associate Professor Emeritus of Statistics

Christopher Mitchell, BSc, PhD, Professor Emeritus of Conflict Analysis and Resolution

Mary S. Montebello, BS, MS, PhD, Professor Emeritus of Conflict Analysis and Resolution

Jean Burley Moore, BSN, MSN, PhD, Professor Emerita of Nursing

Winston Moore, JD, Associate Dean Emeritus of the School of Law

Margaret Moss, Dip, BSN, MSN, PhD, Professor Emerita of Law

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Hung M. Nguyen, LLB, MA, PhD, Associate Professor Emeritus of Government and Politics

Loretta A. Normile, BSN, MN, PhD, Associate Professor Emerita of Nursing

Sarah Nutter, BS, MBA, PhD, Professor Emerita of Accounting

John S. O’Connor, BA, MA, PhD, Professor Emeritus

Colin Owens, BA, MA, PhD, Professor Emeritus of English

John Paden, BA, MA, PhD, Clarence J. Robinson Professor Emeritus of International Studies

Roger Paden, AB, AM, PhD, Associate Professor Emeritus of Philosophy

Ann Palkovich, AB, MA, PhD, Professor Emerita of Anthropology

James D. Palmer, BS, MSE, PhD, Professor Emeritus of Information Technology and Engineering

Anthony F. Palmieri, BA, MA, PhD, Associate Professor Emeritus of English
Dimitrios Papaconstantopoulos, BS, DIC, MS, PhD, Professor Emeritus of Computational and Data Sciences
Wayne D. Perry, BS, MS, PhD, Professor Emeritus of Public Policy
Paula Petrik, AB, MFA, MA, PhD, Professor Emerita of History and Art History
Samuel H. Phillips Jr., BA, MA, PhD, Professor Emeritus of Economics
Roman Polyak, PhD, Professor Emeritus
Miriam Raskin, BA, MSW, EdD, Professor Emerita of Social Work
Georgine Redmond, BSN, MN, EdD, Associate Professor Emerita of Nursing
Janine Ricouart, PhD, Professor Emerita of Modern and Classical Languages
Linda G. Rikard, BS, MEd, EdD, Associate Professor Emerita of Education
David Rine, BS, MS, PhD, Professor Emeritus of Computer Science
Johannes Rojahn, PhD, Professor Emeritus of Psychology
Karen Rosenblum, BA, PhD, Professor Emerita of Sociology
Paulette Royt, BS, MD, PhD, Professor Emerita of Biology
Catherine E. Rudder, BA, MA, PhD, Professor Emerita of Public Policy
Robert Rugel, BA, PhD, Associate Professor Emeritus of Psychology
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Sylvia Y. Sanchez, BS, MS, EdD, Associate Professor Emerita of Education
Ben F. Sands Jr., MBA, DBA, Professor Emeritus of Management
James Francis Sanford III, BA, MS, PhD, Professor Emeritus of Psychology
David H. Schaefer, BS, Associate Professor Emeritus of Electrical and Computer Engineering
Paul S. Schopf, ScB, ScM, PhD, Professor Emeritus of Atmospheric, Oceanic and Earth Sciences
Betty J. Schuchman, BS, MS, EdD, Associate Professor Emerita of Education
Linda Schwartzstein, AB, JD, LLM, PhD, Vice Provost and Professor Emerita of Higher Education
Thomas Scruggs, BA, MEd, PhD, University Professor Emeritus of Education
Carol J. Sears, BS, MS, PhD, Associate Professor Emerita of Education
Linda Seligmann, BA, MA, PhD, Professor Emerita
Jay Shaffer, BS, PhD, Professor Emeritus of Biology
Jay Shapiro, BS, PhD, Professor Emeritus of Mathematical Sciences
Edgar Sibley, BS, SM, ME, ScD, Professor Emeritus of Computer Science
Mary Silva, BS, MS, PhD, Professor Emerita of Nursing
Judith Skog, BS, MS, PhD, Professor Emerita of Environmental Science and Policy
Shannon Skousgaard, BA, MA, PhD, Associate Professor Emerita of Philosophy
Carlos Sluzki, MD, Professor Emeritus of Global and Community Health
James G. Smith, BM, MM, DMA, Professor Emeritus of Music
Robert F. Smith, BA, MA, PhD, Professor Emeritus of Psychology
Vernon L. Smith, BSEE, MA, PhD, University Professor Emeritus
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William Sutton, BS, MS, PhD, Associate Professor Emeritus of Electrical and Computer Engineering
Eileen Sypher, AB, PhD, Professor Emeritus of English
Daniel Tabak, BSEE, MS, PhD, Professor Emeritus of Information Technology and Electrical Engineering
Stephen R. Taub, AB, PhD, Professor Emeritus of Biology
Anita Taylor, BS, MS, PhD, Professor Emerita of Communication
Wayne Thomas, BA, MEd, PhD, Professor Emeritus of Education
Eva K. Thorp, BA, MA, EdD, Associate Professor Emerita of Education
Ellen Todd, BA, MA, PhD, Associate Professor Emerita of History and Art History
C. Alan Turner, BS, MA, MPA, PhD, Professor Emeritus of Criminology, Law and Society
Zita Tyer, PhD, Professor Emerita of Psychology
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Harry Van Trees, BSc, MS, ScD, University Professor Emeritus of Electrical Engineering
Karen Vaughn, BA, MA, PhD, Professor Emerita of Economics
Rex A. Wade, BA, MA, PhD, University Professor Emeritus of History and Art History

Irmgard Wagner, MA, PhD, Professor Emerita of German

Dorothy J. Walker, BSNE, MSNE, PhD, JD, Professor Emerita of Nursing

Gerald Wallace, BS, MEd, EdD, Professor Emeritus of Education

Patricia Wanschura, BA, MA, PhD, Associate Professor Emerita of Psychology

Keith Q. Warner, D.de l’U Professor Emeritus of French

Lenore J. Weitzman, BS, PhD, Clarence J. Robinson Professor of Sociology and Law Emerita

Inge Wekerle, BA, AM, PhD, Assistant Professor Emerita of German

C. Stephen White, BA, MA, PhD, Professor Emeritus of Education

Louise White, PhD, Professor Emerita of Public and International Affairs

Frank Whittington, BA, MA, PhD, Professor Emeritus of Gerontology

Philip Wiest, BA, MS, PhD, Associate Professor Emeritus of Economics

David K. Wiggins, AB, MA, PhD, Professor Emeritus of Sports Studies

James Willett, AB, PhD, Professor Emeritus of Systems Biology

Chien-Yun Wu, MSN, DNP, PhD, Associate Professor Emerita of Nursing

Norman A. Yance, BS, BD, ThM, MA, PhD, Associate Professor Emeritus of Religious Studies

Margaret R. Yocum, BA, MA, PhD, Emerita of English

Terry Zawacki, BA, MA, DA, Associate Professor Emerita of English
ADMISSIONS

- Undergraduate Admission Policies
- Graduate Admission Policies
- Admission of International Students
- Non-degree Enrollment
- Academic Testing

Undergraduate Admission Policies
Office of Admissions
4400 University Drive, MS 3A4
Fairfax, VA 22030
Phone: 703-993-2400
Fax: 703-993-4622
Email: admissions@gmu.edu
Website: www2.gmu.edu/admissions-aid

Admission to George Mason University is competitive, and based on a variety of factors. Each candidate (applicant) who applies for admission must present sufficient qualifications in order to be reviewed within the context of other qualified applicants. An offer of admission is valid only for the semester for which the student applied. Programs with limited space or special requirements may use a second review process for admission.

Applying for Admission
Application for undergraduate admission should be made to the Office of Admissions. Applications are available at www2.gmu.edu/admissions-aid/apply-now (http://www2.gmu.edu/admissions-aid/apply-now). A non-refundable and non-transferable fee must accompany the application.

Application Deadlines for Freshmen and Transfer Students
The application deadline for fall admission is January 15 for freshman applicants, and March 1 for transfer applicants. The transfer application deadline for the spring semester is October 1. Freshman applicants who wish to be considered for merit-based scholarships must apply by Mason’s priority deadline of November 1. Applications received after published deadlines will be considered on a space-available basis only. The university reserves the right to close applications before published deadlines if conditions warrant. Admission is contingent on satisfactory completion of in-progress course work and graduation from high school or community college, if relevant.

Early Admission
High school juniors who have completed high school graduation requirements except for senior English and government courses may, with the approval of their high school counselor or principal, apply for admission and thereby enter the university as degree-seeking students one year early. Applicants should present satisfactory grades, SAT or ACT scores, and a high school course of study demonstrating rigorous academic preparation for university-level work. Competitive candidates will have pursued the most rigorous curriculum available at their school (i.e. AP/IB/Honors level coursework). Candidates must also submit first semester junior year grades.

Application for a Second Bachelor's Degree
Those holding one or more bachelor’s degrees may earn an additional bachelor’s degree at Mason in another discipline. Application for a second bachelor’s degree after conferral of a first degree from any regionally accredited institution must be conducted through the Office of Admissions. Second Bachelor’s degree applicants should follow the transfer application process outlined on the Transfer Admissions homepage (http://www2.gmu.edu/admissions-aid/how-apply/transfer), and are subject to the same competitive admissions review as first-degree applicants. After admission, students work with the appropriate academic program to develop an approved contract or course of study of at least 30 credits beyond the first degree, taken after admission to the second degree, to meet university residency requirements. Some units will have more stringent requirements. This contract will detail college-level and major requirements that must be met to satisfy graduation requirements.

Enrollment after Previous Attendance
Students in good academic standing who have missed one or more consecutive semesters of enrollment (excluding summer term) at Mason, and who do not meet any of the excluded categories listed below under Readmission after Previous Attendance (below), may re-enter by completing a re-enrollment form available through the Office of the University Registrar (http://registrar.gmu.edu/forms). Undergraduate students do not need to submit a re-enrollment form if an approved Leave of Absence is on file. Upon re-enrollment, undergraduate students who do not have an approved Leave of Absence on file will be required to meet new catalog year requirements. Some academic programs require departmental approval prior to re-enrollment.

Readmission after Previous Attendance
Undergraduate students who have missed one or more consecutive semesters of enrollment (excluding summer term) at Mason must apply for readmission through the Office of Admissions if any of the following conditions are true:

- The student has not been enrolled at Mason for more than 2 years and an approved Leave of Absence form is not on file.
- The student is an undergraduate returning after any absence during which he or she studied at another institution without prior written permission of his or her school or college. Such students must reapply as transfer students.
- The student was suspended or dismissed from any college or university for nonacademic reasons.
- The student was academically dismissed from Mason.
- The student was ever convicted of a felony.

Right to Rescind Admission
Mason reserves the right to rescind offers of admission if applicants fail to (1) successfully complete their current academic program, (2) maintain grades that meet the requirements for admission to George Mason, and (3) exhibit exemplary personal conduct prior to enrollment. Additionally,
Mason may rescind an offer of admission based on cancellation or change of any test score required for admission or if it is determined that admission was obtained through the use of incomplete, falsified, altered, or embellished information. Mason also reserves the right to impose restrictions or requirements on the admission of a student (e.g., housing or educational restrictions or additional conditions or requirements prior to enrollment) as a result of any of the foregoing. Admitted students are required to timely update the Office of Admissions of any new information that may affect their admission, including, but not limited to, any changes in their participation in their current academic program or their grades, or any conduct related issues (e.g., criminal matters and school discipline matters).

Upon learning of any relevant changes to a student's record, either directly from the student or from a third-party, the Dean of Admissions shall refer the case to the appropriate committee for review. The student shall have an opportunity to provide a written statement to the Dean of Admissions for consideration by the committee. The committee shall make a recommendation to the Dean of Admissions regarding whether the offer of admission should be rescinded or whether any restrictions or additional requirements should be placed on the student. In the case of withdrawal of admission from a matriculated student credit earned at Mason may be withheld.

Records Maintenance and Disposal

All admissions documents, including academic records sent from other institutions, become part of the official university file. Admission credentials are retained for only 12 months. They are subsequently destroyed if any of the following conditions are true:

- The applicant does not register for courses within the period for which the offer of admission is valid.
- The applicant was denied admission.
- The applicant does not respond to requests for additional information.
- The applicant fails to submit a complete application, including all official transcripts and test results.

Freshman

Freshmen Requirements

Freshmen applicants to George Mason University are encouraged to apply online by using the Common Application (for those applying to more than one school) or Mason’s Exclusive Online Application (for those applying only to Mason) by visiting www2.gmu.edu/admissions-aid/apply-now (http://www2.gmu.edu/admissions-aid/apply-now). The following factors are considered when reviewing freshman applications for admission:

- Cumulative high school grade point average (GPA) for course work completed in grades 9 through 12
- Level of difficulty of course work elected throughout the high school years, particularly in English, mathematics, laboratory science, social science, and foreign language
- Scores from SAT I or ACT (see exceptions under Score Optional Consideration below)
- For all non-native English speakers, scores from the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) exam
- Essay(s)
- List of extracurricular activities
- Teacher and/or counselor recommendations

Early-action applicants who meet the November 1 deadline will be notified of their non-binding admissions decision in mid-December. Regular decision applicants who meet the January 15 deadline are notified of decisions by April 1. All other applicants are notified on a space-available basis.

The following table specifies the minimum units of college preparatory work required for admission, as well as the minimum units recommended. The recommended units reflect the typical high school program of students who have been admitted to Mason in recent years.

Note that one unit equals one academic year of study.

### Required Minimum

<table>
<thead>
<tr>
<th>Subject</th>
<th>Bachelor of Arts</th>
<th>Bachelor of Science</th>
<th>Applicants with Specific Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Laboratory Science</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Other Academic Electives</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>17</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

1. Refers to students applying for a bachelor of arts, excluding those in the “Applicants with Specific Majors” column
2. Refers to students applying to a bachelor of science degree program, excluding those in the “Applicants with Specific Majors” column
3. Refers to applicants who intend to major in pre-business, chemistry, computer science, engineering, geology, mathematics, or physics
4. Selected from algebra I, algebra II, geometry, trigonometry, analytic geometry, functions, math analysis, pre-calculus or calculus
5. Selected from biology, chemistry, physics, or other advanced lab science

### Recommended Minimum

<table>
<thead>
<tr>
<th>Subject</th>
<th>Bachelor of Arts</th>
<th>Bachelor of Science</th>
<th>Applicants with Specific Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Social Studies</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Laboratory Science</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Other Academic Electives</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23</strong></td>
<td><strong>22</strong></td>
<td><strong>23</strong></td>
</tr>
</tbody>
</table>

1. Refers to students applying for a bachelor of arts, excluding those in the “Applicants with Specific Majors” column
All dual-enrollment students are considered freshman applicants on May 1. Students must confirm their intent to enroll by completing the courses.

Acceptance of Freshman Admission Offer

Mason complies with the national freshman candidate reply date of May 1. Students must confirm their intent to enroll by completing the enrollment confirmation online. The deposit is nonrefundable after May 1.

Transfer Requirements

Students who have graduated from high school and subsequently attempted course work at a college or university are considered transfer applicants. The Admissions Committee considers each transfer application individually and reviews all grades received in courses attempted, as well as the rigor of the applicant's academic program. Transfer applicants are expected to present 30 transferable credit hours, including courses to fulfill the Mason Core requirements in English Composition and mathematics, with a 2.00 minimum cumulative grade point average. Transfer admission is competitive and the number of applications received annually exceeds the available spaces in the transfer class. Meeting minimum standards does not assure transfer admission.

Transfer applicants who have earned less than 30 transferable credit hours are evaluated for admission on the basis of their secondary school record, as well as any post-secondary coursework attempted. Such applicants must provide an official high school transcript or secondary school leaving certificate (final transcript), official SAT I or ACT scores, and official transcripts from all colleges and universities attended. Transfer applicants who have earned more than 30 transferable credit hours upon application may be exempted from providing the secondary school record and official SAT I or ACT results at the discretion of the Admissions Committee. All transfer applicants are required to declare a specific major on the application to benefit from academic advising within their intended program.

All non-native English speakers are required to meet the University's English language proficiency requirement. Most students satisfy this requirement by submitting official TOEFL or IELTS examination results that meet the University’s minimum score requirement. At the discretion of the Admissions Committee, non-native English speakers may alternatively satisfy the English language proficiency requirement. Applicants who complete at least two English Composition courses with grades of C or better at a regionally accredited U.S. college or university may be waived from the TOEFL or IELTS requirement. The Office of Admissions makes the sole determination of whether an applicant satisfies the English language proficiency requirement for admission. For more information please see the full policy on English language proficiency (https://catalog.gmu.edu/admissions/international-students/#text).

Virginia Community College System and Richard Bland College graduates transferring with Associate of Arts, Associate of Arts and Sciences, or Associate of Science transfer degrees may be considered for GAA admission via the Guaranteed Admission Agreement (https://www2.gmu.edu/admissions-aid/how-apply/transfer/gara). Virginia Community College students without transfer degrees and those transferring from other institutions will be considered for regular transfer admission. GAA or regular admission status is specifically noted in the transfer admission letter.

Students on active academic or non-academic suspension or dismissal are not eligible for admission.

Transfer Credit

Transfer students receive a formal evaluation of transfer credit from the Office of Admissions after admission, receipt of the enrollment deposit, and registration for the required new student orientation. Students are
Graduate Admission Policies

Acceptance of Transfer Admission Offer

Admitted transfer students are required to confirm their enrollment by submitting an enrollment deposit by June 15 for fall entrance, or December 1 for spring entrance. Transfer students admitted after June 15 or December 1 are required to submit their enrollment deposit within 7 days of the admission letter. Enrollment deposits are non-refundable after these deadlines. Admitted students who do not accept the offer of admission by the published deadline may forfeit their space in the transfer class.

Deferral of Transfer Admission Offer

Under certain circumstances, students unable to enroll may defer their transfer admission to the next semester after submission of the enrollment deposit. Requests to defer must be made through the online admissions portal no later than the first day of the semester for which you were initially admitted if you wish to request a deferral. Submitting a request to defer admissions does not guarantee that your deferral request will be approved.

Graduate Admission Policies

Graduate applications are generally reviewed by the Admissions Committee only upon completion of the application, and submission of all supplemental materials as required by the program. At its discretion, the Office of Graduate Admissions may issue a decision before an application is complete. Applicants receive electronic notification of the official admission decision through the online Application Portal.
Graduate Application Requirements

For full consideration for graduate admission, applicants must submit the following:

- Completed online application for graduate study
- Nonrefundable application fee
- Application for Virginia In-State Tuition Rates, if claiming entitlement to these rates
- An unofficial transcript for all earned or currently in-progress undergraduate degrees, and, if applicable, an unofficial graduate transcript for any graduate coursework taken, is required during the application process. Official documents, showing all previously earned degrees, including undergraduate bachelor’s degrees and higher, as well as any graduate coursework that you wish to be applied to your Mason degree program, shall be required if you are admitted. For information on how to submit unofficial transcripts as part of the admissions process, visit the website (http://www2.gmu.edu/admissions-aid/how-apply/graduate).
- Goals statement, as required by the program
- Letter(s) of recommendation, as required by the program
- Other materials specified by the program, including official exam scores from Graduate Admission Exams (such as GRE or GMAT), departmental forms, portfolios, and/or interviews

Specific departmental admission requirements for degree-seeking students are listed in this catalog under the relevant discipline, with supplemental material requirements listed online (https://www2.gmu.edu/admissions-aid/how-apply/graduate-deadlines-and-requirements).

Applicants with international educational credentials earned outside of the U.S. should read the Admission of International Students section for more information on required documentation and English Proficiency Standards.

Graduate Admission Exams

Most graduate programs use test scores as an additional measurement of an applicant’s qualifications. The exams most often required by graduate programs include the GRE, GMAT, MAT and/or Praxis Core. Specific departmental admission requirements for degree-seeking students are listed in this catalog under the relevant discipline.

For information on how to submit graduate admission exam scores, visit the website (http://www2.gmu.edu/admissions-aid/how-apply/graduate).

English Proficiency Standards

Mason students participate in rigorous graduate coursework as part of their university educational experience. Therefore, students at Mason must have a full command of academic English at the graduate level in order to be successful throughout their studies. All new graduate students are expected to accurately comprehend written graduate-level English, clearly understand rapidly spoken English in classroom lectures and in professional settings, write with proper grammar and syntax, and be able to respond quickly in English using a vocabulary appropriate for collegiate settings.

For this reason, Mason has a high standard of English proficiency for graduate admission. All Mason graduate programs strictly require applicants to meet that English proficiency standard. Applicants who have earned a bachelor’s, master’s, or doctoral degree from a regionally accredited university in the United States, Canada (excluding province of Quebec), Commonwealth Caribbean (Antigua, Barbuda, Belize, Cayman Islands, Dominica, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, and Trinidad and Tobago), United Kingdom, Ireland, Australia, and New Zealand are considered to have met that standard. All other applicants are required to take an English proficiency examination and meet minimum scores set by Mason in order to be considered for admission. The TOEFL, Pearson Test of English, or IELTS exams can be used to meet this requirement. The Office of Admissions is the sole decision maker for English Language proficiency.

For details on English proficiency requirements, see Admission of International Students (p. 71). Individual programs reserve the right to set different minimum scores and, therefore, their admission requirements in this catalog should be reviewed.

Online Application Portal

Mason provides all graduate applicants access to the Online Application Portal, through which the online application and supplemental documents must be submitted. This Application Portal is where applicants track their application progress and status. The Online Application Portal can be accessed online (https://www2.gmu.edu/admissions-aid/how-apply/application-status). Applicants are responsible for regularly reviewing the Portal in order to submit updated required documentation (when necessary), and reviewing important information regarding their admission status.

E-mail

Mason uses the e-mail account provided at the point of application to communicate with applicants. Applicants should use this to communicate with the Office of Graduate Admissions, school/department/program, and other administrative units, and check it regularly for important information regarding their admission application.

Offer of Admission

Applicants will be notified that a decision has been made on their application via their email. In order to view their official decision letter, applicants must log in to their Online Application Portal. The offer of admissions will not be sent via postal mail, printed, or e-mailed. The offer of admission specifies the effective date of admission, category of admission offered, and name of the advisor or advising team assigned to the applicant. This offer is good only for the semester and program for which the applicant applies. The offer must be accepted by submitting an online Intent to Enroll form (and a deposit if required by the school, college or program) through the Online Application Portal. A denial of admission is not subject to appeal. Questions pertaining to admission waitlists should be directed to the appropriate college or school as policies vary by graduate program.

Right to Rescind Admission

Mason reserves the right to rescind offers of admission if applicants fail to (1) successfully complete their current academic program, (2) maintain grades that meet the requirements for admission to George Mason University, and/ or (3) exhibit exemplary personal conduct prior to enrollment. Additionally, Mason may rescind an offer of admission based on cancellation or change of any test score required for admission or if it is determined that admission was obtained through the use of incomplete, falsified, altered, or embellished information. Mason also reserves the right to impose restrictions or requirements on the admission of a student (e.g., housing or educational restrictions or additional conditions or requirements prior to enrollment) as a result
of any of the foregoing. Admitted students are required to update the Office of Admissions in a timely fashion of any new information that may affect their admission, including, but not limited to, any changes in their participation in their current academic program or their grades, or any conduct related issues (e.g., criminal matters and school discipline matters).

Upon learning of any relevant changes to a student’s record, either directly from the student or from a third-party, the Dean of Admissions shall refer the case to the appropriate committee for review. The student shall have an opportunity to provide a written statement to the Dean of Admissions for consideration by the committee. The committee shall make a recommendation to the Dean of Admissions regarding whether the offer of admission should be rescinded or whether any restrictions or additional requirements should be placed on the student. In the case of withdrawal of admission from a matriculated student credit earned at Mason may be withheld.

Admission of Graduate Degree Holders

Those holding one or more graduate degrees may earn an additional graduate degree in another discipline. For admission to a second graduate degree program, students should submit an application, transcripts, and other documents as required by the second degree program. Course credits used to satisfy the degree requirements for the first graduate degree may not be used to satisfy the degree requirements for the second graduate degree. In programs with overlapping or similar requirements, students will be advised in the subsequent degree program regarding appropriate course substitutions for subjects already covered.

Provisional Admission

Provisional admission specifies requirements that must be met prior to graduation, as detailed below.

Provisional Admission is intended for those applicants who have provided evidence that they are able to pursue graduate coursework, but have not taken foundational or pre-requisite coursework requirements, or do not meet GPA minimum requirements.

A degree-seeking graduate applicant with a baccalaureate degree from a regionally accredited institution of higher education, or international equivalent, with a GPA below the minimum for the graduate program, or applicants who are missing specific foundational or pre-requisite coursework requirements, may, at the discretion of the academic unit or program, be offered provisional admission if sufficient evidence is presented to suggest the ability to pursue graduate work. As a first priority when starting the graduate program, a provisionally admitted student must satisfy the provisions of admission. Once the student has satisfied the provisions specified in the offer of admission and submitted all admission credentials, the provisional qualifier will be removed from the student's record. Written confirmation indicating the removal will be sent to the student from the academic unit, institute dean or director.

Provisionally required courses must be completed successfully, earning a grade of B or better, on the student's first attempt within the first 12 credits of enrollment (or a more restricted time frame specified by the department in the offer of provisional admission). Provisionally required courses may not be repeated. Students who do not complete these courses successfully will be terminated from the program. All applicants admitted provisionally are in degree-seeking status, and course work taken appears as part of their graduate-level transcript. Students in provisional status may not take courses in the consortium or elsewhere, or transfer graduate course work into their program until the provisions of admission have been met.

Due to federal requirements, students on F1/J1 visas are not eligible for Provisional Admission to George Mason University.

While the provision is in effect, graduate students whose registration includes undergraduate courses are considered full time if they meet the undergraduate standard by being registered in at least 12 credit hours per semester. For more information on full-time status, see the Student Classification sections in AP5 Undergraduate Policies (p. 87) and AP6 Graduate Policies (p. 90) of this catalog.

Conditional Admission

Conditional admission specifies requirements that must be met prior to enrollment, as detailed below.

Conditional Admission is intended for those applicants who do not meet the academic standards of admission, but provide sufficient evidence to suggest the ability to pursue graduate coursework. Conditional admission cannot be offered to applicants who have not met minimum English language proficiency requirements as outlined in the English Proficiency Standards (p. 71) under Admission of International Students. It also may not be offered to applicants who do not have, or will not earn, a baccalaureate degree from a regionally accredited institution of higher education or international equivalent. An applicant will not be fully admitted and allowed to enroll into the graduate program until meeting the conditions set for admission.

A graduate applicant who does not meet the minimum admission standards may, at the discretion of the academic unit or program, be offered conditional admission if sufficient evidence is presented to suggest that the applicant has the ability to pursue graduate coursework. Conditionally admitted students must satisfy the conditions of their admission prior to enrollment in courses. Once the student has satisfied the conditions specified in the conditional offer of admission and submitted all admission credentials, including test scores, the conditional offer of admission will be updated to full or provisional admission. Notification of full or provisional admission will be provided to the student in the form of an updated letter of admission from the Office of Graduate Admissions, which will be published to the student's Online Application Portal.

Due to federal requirements, students on F1/J1 visas are not eligible for Conditional Admission to George Mason University.

The conditional offer of admission will be withdrawn if the student does not meet the conditions within one academic year from the first day of classes for the semester to which they applied (or a more restricted time frame specified by the program in the offer of admission).

Deferred Application Decision Pending Additional Coursework

Applicants are notified when action on an application has been deferred pending completion of courses that are prerequisite to graduate study in a chosen field. Applicants should notify their academic unit or program as soon as the prerequisites have been met. Applicants are responsible for furnishing unofficial transcripts confirming that prerequisite courses have been satisfactorily completed. Applicants have one academic year or less, dependent upon the program, to complete
prerequisites. An admission decision cannot be made until these grades are received.

NOTE: The above admission decisions (provisional, conditional, and deferred pending additional coursework) are utilized at the discretion of each academic unit. Applicants should refer to the admissions website of the academic unit to which they are applying for further clarification on the types of admissions decisions that are made for their program of interest.

Deferral or Reconsideration of Admitted Students

The Office of Graduate Admissions, in coordination with the program of admission, will consider requests from admitted students to either defer enrollment or reconsider their application for a future term. These requests are initiated by the applicant through the Intent to Enroll form, which is found on the Online Application Portal. Depending on the program of admission, the applicant will either be granted a deferral, a reconsideration, or the request will be denied.

A deferral is an automatic admission that does not require an applicant to go back through admissions review. A reconsideration is not an automatic admission and an applicant must go through admissions review again, regardless of previous admit decision.

Offers of funding are not guaranteed for deferrals or reconsiderations and are at the discretion of the program of admission.

All requests for deferral or reconsideration must be submitted using the directions on the Online Application Portal by the enrollment deadline listed in the student’s offer of admission. Deferral or Reconsideration is granted only for a period of one full academic year (Ex. Fall to Fall) or less, with some programs having specific term restrictions for delaying enrollment. These restrictions vary by program and, as such, applicants should check with their respective academic unit or program.

Reopening Incomplete Applications

The Office of Graduate Admissions will allow applicants to reopen submitted, but incomplete applications that never received an admission decision for the term of original application. An application may only be reopened for the original program to which the student applied. The reopened application must meet deadlines and requirements for the new term. This reopen is offered as a one-time courtesy without fee. Applications may be moved no further than one full academic year forward from the term of the original application (Ex. Fall to Fall), with some programs having specific term restrictions for reopening an application. These restrictions are listed online (https://www2.gmu.edu/admissions-aid/how-apply/graduate/frequently-asked-questions). To request a reopen the applicant must make the request through Reopen Request Form, located within the cancellation letter.

Records Maintenance and Disposal

All admissions documents, including academic records sent from other institutions, become the property of the Office of Admissions and part of the applicant’s official university file. These documents will not be returned to the applicant. Admission credentials are retained for only 12 months. They are subsequently destroyed if applicants do not register for courses within the period for which the offer of admission is valid, have been denied admission, do not respond to requests for additional information, or fail to submit complete applications, including all official transcripts and test results.

Admission of International Students

Office of Admissions
Undergraduate Admissions
4400 University Drive, MS 3A4
Fairfax, VA 22030

Graduate Admissions
4400 University Drive, MS: 4C8
Fairfax, VA 22030

Phone: 703-993-2400
Fax: 703-993-4622 (Fax)

Website: admissions.gmu.edu

General Requirements

Application for admission by international students should be made directly to the Office of Admissions via the online application (https://www2.gmu.edu/admissions-aid/apply-now).

Application deadlines are as follows:

| Freshman Fall | April 1 |
| Transfer Fall | March 1 |
| Freshman Spring | October 1 |
| Transfer Spring | October 1 |
| Graduate | Varies by academic program. |

Please check http://admissions.gmu.edu/grad for specific program details.

These deadlines ensure adequate time to process applications and prepare immigration documents. All international applications must be accompanied by the nonrefundable application fee. Items that must be submitted with the application form and fee are official transcripts and degree certificates (in original language and, if applicable, certified English translation); evidence of English proficiency (please see the English proficiency website (https://www2.gmu.edu/admissions-aid/how-apply/international/english-proficiency-requirements) for more details); the Certificate of Financial Responsibility (https://mymasonportal.gmu.edu/bbcswebdav/;orgs/AU_Provost_IEM/documents/internationalFinancialResponsibilityCertificate.pdf) (CFR); financial support documents; copy of passport identification page; and for those present in the United States, copies of immigration documents verifying current nonimmigrant status. Other documentation such as recommendation letters, essays, portfolios, etc., may be required by the academic program. Please visit Admissions (https://www2.gmu.edu/admissions-aid/how-apply/international/english-proficiency-requirements) for full details on items required and deadlines.

Applications from international students are reviewed with all other applications. Admission to the university is competitive; therefore, while minimum standards ensure that an application will be considered, they do not guarantee admission. The number of applicants, qualifications of the applicant pool, and the amount of available space determine the number of admission offers that Mason can make. In addition to overall admission requirements, some schools and colleges have individual
requirements for acceptance into the major. For more information, see school or college admission requirements (https://www2.gmu.edu/admissions-aid/how-apply/international).

Applicants who are accepted to a program will receive an online admission decision via their online application portal. Most students come to the United States on an F-1 visa, but students who are sponsored by the U.S. government, their home government, or another organization may be required to enter the United States on a J-1 Exchange Visitor’s Visa. To be issued an immigration document (Form I-20 for F-1 status or Form DS2019 for J-1 status), students must prove they have sufficient financial support to cover their expenses while at Mason. If the documentation submitted is satisfactory, the university will issue Form I-20 for F-1 status or Form DS2019 for J-1 status and mail it to the address indicated on the Certificate of Financial Responsibility.

International students outside the United States may use their immigration documentation to schedule a visa interview with the U.S. embassy or consulate nearest their place of residence and apply for an F-1 or J-1 student visa. For more information about the visa application process, check with the nearest U.S. embassy or consulate, or go to the Department of State’s website (https://www.state.gov).

Students in a nonimmigrant visa category other than F-1 or J-1 may submit the CFR and copies of immigration documents indicating their immigration status. They do not need to submit financial support documents unless they plan to change to a student visa. For more information pertaining to immigration status, contact the Office of International Programs and Services (OIPS) at 703-993-2970. Additional information is available on the OIPS website (https://oips.gmu.edu).

Freshman and Transfer Requirements

A freshman student is a first time university student who has never before enrolled in a college or university after graduating from secondary school. A transfer student is one who has completed course work at another college or university after graduating from secondary school. In addition to the requirements defined for all applicants, international students must meet the following standards:

- Freshman applicants must submit certified official copies of all secondary or high school transcripts in the original language along with an English translation, if applicable. Official results of any leaving certificates or university entrance exams also must be submitted.

- Transfer applicants must submit official transcripts from each post-secondary institution attended, sent directly to Mason from the institution.

- International students may be considered for admission without an SAT or ACT score through our score optional admission program; however, SAT or ACT results may be required for merit-based scholarship consideration. Applicants to Mason’s science and engineering programs must also submit a qualifying SAT or ACT score.

- Applicants must demonstrate English language proficiency. Undergraduate applicants who have completed four years (grades 9-12) of college preparatory English at a U.S. secondary school or secondary school in the following countries with grades of C or better in each English course are considered to have met this standard: United States, Canada (excluding province of Quebec), Commonwealth Caribbean (Antigua, Barbuda, Belize, Cayman Islands, Dominica, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, and Trinidad and Tobago), United Kingdom, Ireland, Australia, and New Zealand. All other applicants are required to submit TOEFL, Pearson Test of English, IELA, or IELTS exam results. To be considered for admission, applicants must have scored at least 80 with a minimum of 18 in each subsection on the Internet-based TOEFL, 550 on the paper-based TOEFL; undergraduate applicants to Volgenau School of Engineering programs are not required to meet the associated subsection score requirements. English language proficiency may also be demonstrated by receiving a score of 6.5 or higher with a minimum 6.0 in each subsection on the IELTS exam, or a 59 overall band score on the Pearson Test of English. Further, English proficiency may be demonstrated by scoring an overall score of 176, with a minimum of 169 in each subsection, on the IELA examination, which is coordinated by INTO Mason. All English proficiency scores are valid for two years from the test date. Official test scores must be sent directly from the Educational Testing Service or IELTS. For more information, visit Test of English as a Foreign Language website (https://www.ets.org/toefl), the IELTS website (https://www.ielts.org), or the Pearson Test of English website (https://www.pearsonpte.com). Successful completion of INTO-Mason Academic English Level 6 is also accepted. Further information concerning Mason’s English language proficiency requirements may be found on the admissions website (https://www2.gmu.edu/admissions-aid/how-apply/international/english-proficiency-requirements).

- Applicants with English proficiency exam results below the minimum qualifying score for direct entry may be referred to an INTO Mason Pathway or Academic English program (https://intohigher.com/us/en-us/the-universities/into-mason).

- All transcripts from colleges or universities outside the United States must be translated into English and evaluated course by course by a NACES (National Association of Credential Evaluation Services) recognized U.S. evaluation agency before an admission decision can be made. Applicants are responsible for the timely translation and evaluation of documents and all costs and fees associated with these services. A list of accepted evaluation agencies is available here (https://www.naces.org/members.htm). Please note all transcripts and documents submitted to the university will become part of the applicant’s permanent record and will not be returned.

- International students already in the United States with F-1 status must complete immigration transfer procedures within 15 days of the program start date. For processing of immigration transfers, contact OIPS at 703-993-2970 or visit their website (https://oips.gmu.edu).

Graduate Requirements

International students interested in pursuing graduate study must meet the following requirements:

- In order to be considered for admission, applicants must complete the online Application for U.S. Graduate Study (https://www2.gmu.edu/admissions-aid/apply-now) and submit all required materials, including any supplemental documentation required by their academic program directly to the Office of Admissions.

English Proficiency Standards

Mason students participate in rigorous graduate coursework as part of their university educational experience. Therefore, students at Mason must have a full command of academic English at the graduate level in order to be successful throughout their studies. All new graduate students are expected to accurately comprehend written graduate-level English, clearly understand rapidly spoken English in classroom lectures
and in professional settings, write with proper grammar and syntax, and be able to respond quickly in English using a vocabulary appropriate for collegiate settings.

For this reason, Mason has a high standard of English proficiency for graduate admission. All Mason graduate programs strictly require applicants to meet that English proficiency standard. Applicants who have earned a bachelor's, master's, or doctoral degree from a regionally accredited university in the United States, Canada (excluding province of Quebec), Commonwealth Caribbean (Antigua, Barbuda, Belize, Cayman Islands, Dominica, Guayana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, and Trinidad and Tobago), United Kingdom, Ireland, Australia, and New Zealand are considered to have met that standard. All other applicants are required to take an English proficiency examination and meet minimum scores set by Mason in order to be considered for admission. The TOEFL, Pearson Test of English, IELA, or IELTS exams can be used to meet this requirement.

Decisions regarding English proficiency are the sole discretion of Mason's Office of Admissions.

Listed below are the English proficiency examinations that Mason accepts and the corresponding minimum score requirements and submission procedures. Individual programs reserve the right to set higher minimum scores:

**TOEFL**

IBT - 88 points total AND a minimum of 20 points in each section
- Graduate School of Business - 93 points total AND a minimum of 20 points in each section
- Graduate School of Engineering - 80 points total, no minimum section scores

PBT - 570 points

**IELTS - Academic**

6.5 total band score
- Graduate School of Business - 7.0 total band score AND a minimum of 7.0 in each subsection

**Pearson Test of English**

59 overall score

**IELA Graduate**

Overall score of 176
- Graduate School of Business - 185 overall score AND a minimum of 185 in each subsection

**INTO-Mason Academic English**

Level 7

All English proficiency scores are valid for two years from the test date. Official test scores must be provided directly from the testing agency. For TOEFL, IELTS, and the Pearson Test of English, please make sure you have scores sent to the Mason Office of Graduate Admissions. It is not necessary to use the exact department code as test scores arrive to our institution electronically.

Applications with English proficiency exam results below the minimum qualifying score for direct entry may be referred to an INTO Mason Pathway or Academic English program (https://www.intostudy.com/en/universities/george-mason-university/programs).

**Students with International Degrees**

Mason requires the equivalent of a four-year U.S. bachelor's degree from an appropriately accredited international institution of higher education for direct admission to a graduate degree program. All applicants who were educated outside the United States are required to submit an official credential evaluation, written either by an approved evaluation company or by Mason evaluators. Please review the International Transcript Submission Guidelines (https://admissions.gmu.edu/documents/internationalTranscriptGuidelines.pdf) for further details. Complete information on this and all international admissions requirements can be found at Admissions (https://www2.gmu.edu/admissions-aid/how-apply/international). Mason Admissions has final authority on equivalency of degrees.

- All transcripts from colleges or universities outside the United States must be translated into English, if applicable, and submitted to the Office of Admissions for evaluation. Mason will provide evaluation service free of charge for all international transcripts. Because of the volume, more time may be needed to process applications requiring a Mason evaluation. For expedited services, students can submit their documents to a recognized U.S. evaluation service at their own expense. A list of recognized evaluation services is available at Mason's Office of Admissions or online (https://www.naces.org).
- Graduate students’ documents should show the award for either a bachelor’s degree or equivalent, or a graduate degree.

**Special Conditions for International Applicants**

A complete list of application requirements at all levels can be found online (https://www2.gmu.edu/admissions-aid/how-apply/international).

Note the following:

- Federal regulations prohibit students on visitor visas (B-1 and B-2) from enrolling in school. Students who entered the United States on a visitor visa should not plan to study. For more information, contact OIPS.
- Federal regulations prohibit F-2 spouses of F-1 students from engaging in full-time study, and F-2 children may engage in full-time study only from kindergarten through 12th grade. F-2 dependents may engage in study that is vocational or recreational in nature. F-2 dependents seeking to pursue full-time or degree study in the United States must change their status to F-1. For more information, contact OIPS.
- Students enrolled at the university in F-1 or J-1 nonimmigrant status must maintain full-time enrollment each fall and spring semester. For undergraduate students, this means 12 credit hours each semester. Full-time status for graduate students is defined by the Office of the University Registrar, and information can be found in the AP6 Graduate Policies section of this catalog. Because of this requirement, F-1 or J-1 international students do not qualify for part-time programs.
- Students in F-1 and J-1 status may enroll in online courses, but F-1 students may count only one online course toward full-time status. J-1 students may not count online courses toward full-time.
status. For the purpose of this regulation, an online course is one that the University Registrar defines as online, for which no significant requirements (such as attendance, examinations, etc.) must be fulfilled in person.

- Admission for international students is offered for fall (August) and spring (January).
- Prospective students who seek to enter the United States in F-1 or J-1 immigration status, or who seek to attend Mason following attendance at another US school, must complete the Certificate of Financial Responsibility (CFR), which can be downloaded online (https://admissions.gmu.edu/documents/internationalFinancialResponsibilityCertificate.pdf). The form and financial support documents must be submitted to the Admissions Office with the application.
- Students already in the United States should submit copies of immigration documents verifying current nonimmigrant status. This documentation should be submitted with the application for admission.
- Prior to issuing an I-20 or DS-2019 form, the University is required to verify that a student has sufficient financial support to pay for both educational and living expenses. If source is a sponsor, confirmed funding must be documented for the first year of study, typically with a sponsor letter and current bank statement or a scholarship award letter or an assistantship offer. The source of funds for subsequent years must be shown, although for sponsored students a bank statement is required only for the first year. Students who are self-funded must show funds on deposit for the full term of their program. The CFR gives an estimate of annual expenses, including tuition, living expenses, and health insurance; and it also explains what type of documentation is accepted.
- All new students admitted to the university must submit an Immunization Record Form signed by a health care provider. Requirements, information and forms are available online (https://shs.gmu.edu/immunizations).
- Financial sponsors who wish to be billed directly must provide a U.S. billing address. Mason does not bill third parties overseas. It is the student’s responsibility to make sure tuition and fees are paid on time.

International Student Health Insurance

University policy requires all F-1 and J-1 visa students to have health insurance. Federal law requires all students on a J-1 visa to have health insurance that includes coverage for medical evacuation and repatriation. Medical evacuation coverage pays for returning a seriously ill student to his or her home country. Repatriation coverage pays for returning a student’s remains to his or her home country. Mason offers health insurance for students on J-1 and F-1 visas. When international students register for classes, the cost of this coverage is automatically billed to their account by the Office of Student Accounts. This fee is due by the tuition payment due date. Failure to pay this insurance fee or successfully obtain an exemption may result in the cancellation of class registration. Late fees may be assessed if charges are not paid by the deadline established by the Student Accounts Office.

International students are required to purchase insurance for fall and spring/summer semesters.

Exemption from the International Student Health Insurance

International students are automatically enrolled in the Mason Student Health Insurance Plan. International students with health insurance coverage from the following list may request an exemption from the Mason Student Health Insurance Plan. Submission of a request does not guarantee that a waiver will be granted. The Student Health Insurance Office reserves the right to audit all waivers in order to ensure compliance with University Policy 6002.

Students may apply for an exemption:

1. If they have a scholarship or government-sponsored program that provides insurance for them that meets or exceeds the Mason Student Health Insurance Plan.
2. If they or their spouse or parent have a United States employer who provides health insurance for them that meets or exceeds the Mason Student Health Insurance Plan.

Each fall, continuing F-1 and J-1 visa students are required to either pay for the Mason Student Health Insurance or successfully obtain an exemption. Exemptions must be obtained no later than one week after the last day to add/drop classes.

See here (https://shs.gmu.edu/insurance) for more information and exemption form.

Non-degree Enrollment

Office of Admissions
4400 University Drive, MS 3A4
Fairfax, VA 22030
Phone: 703-993-2400; Fax: 703-993-4622
Website: admissions.gmu.edu

Non-Degree Status

Non-degree status enables visiting students from other institutions or community members seeking personal enrichment to enroll in courses for which they are qualified without seeking formal admission to a degree program. Enrollment in specific courses is based on eligibility criteria and availability of space in courses. Registration priority is given to degree-seeking students. Academic departments may restrict or prohibit non-degree enrollment in some courses. Admitted and enrolled non-degree students are responsible for the same policies and procedures that apply to degree-seeking students, including the University Honor Code and the Code of Student Conduct.

George Mason University enrolls non-degree students in three categories: High-School Guest Matriculants, Undergraduate Non-degree students, and Graduate Non-degree students. All Non-degree applicants must complete the online application for admission and supply all official supporting documentation as requested by the Office of Admissions.

Non-degree application information and deadlines are available online (http://www2.gmu.edu/admissions-aid/apply-now).

Students are responsible for registering properly and paying applicable tuition and fees by the deadlines. Students should confirm the correctness of their enrollments (including drop and add) via Patriot Web. Incorrect enrollments may result in academic and financial penalties.
High School Guest Matriculants

Exceptionally talented high school juniors and seniors may be considered for dual enrollment in lower-level (100-299) undergraduate courses. These applicants will be evaluated based on their academic performance in high school. Only students who have excelled in high school and demonstrate the preparation and maturity indicative of the potential to succeed in Mason’s competitive course work will be admitted. Mason cannot guarantee that courses will fulfill high school graduation requirements or that courses taken while the student is a high school guest will transfer to other institutions. High school dual enrollment students may enroll for one course (a maximum of 4 credit hours) each semester or in Summer Term C. An official high school transcript and written permission of the high school counselor is required for admission consideration. Non-native speakers of English are required to meet the University English language proficiency requirement. The Admissions Committee may ask for other supporting documentation such as test scores or transcripts from other dual enrollment credit.

Additional non-degree study for high school guest matriculants beyond the first semester requires a new application each semester and admissions review. High school guest matriculants are expected to maintain a 2.00 or better Mason GPA, and are subject to all academic policies outlined in this catalog.

High School Partnership Programs

Select high school students may be invited to participate in one of several partnership programs offered through George Mason University. Students enrolled in Guest Matriculant Partnership Programs have unique admissions and enrollment requirements set forth by the University. Only students that meet these requirements and agree to the University Honor Code will be admitted. Mason cannot guarantee that Non-Degree credit awarded will fulfill requirements at other institutions.

Undergraduate Non-Degree

Visiting undergraduate students from other colleges or universities, or community members who have completed some college-level course work at a regionally accredited institution, may be considered for Undergraduate Non-Degree admission.

To be considered for admission, Non-Degree Undergraduate applicants must present a minimum 2.00 cumulative grade point average and be eligible to return to all previous institutions attended. Non-native speakers of English are required to meet the University English language proficiency requirement. Students who are actively suspended or dismissed will not be offered admission. Admission is offered for one semester and students may enroll in a maximum of 10 undergraduate (100-499) credits. Admitted Non-Degree Undergraduate students are assessed undergraduate tuition rates, and non-degree students are ineligible for financial aid. Meeting the minimum standard for Undergraduate Non-Degree study neither guarantees admission nor implies future admission to a degree-seeking program. Additional Non-Degree study beyond the first semester requires a new application and admission review, with exceptions existing for Senior Citizens and ROTC students.

Non-Degree Undergraduate students are expected to maintain a 2.00 or better Mason GPA and are subject to the AP6 Undergraduate Policies section of this catalog. Select undergraduate students may be invited to participate in one of several partnership programs offered through George Mason University. Students enrolled in Undergraduate Non-degree special programs have unique admission and enrollment requirements set forth by the University. Only students that meet these requirements and agree to the University Honor Code will be admitted.

More information about Undergraduate Non-Degree application requirements and policies can be found online (http://www2.gmu.edu/admissions-aid/how-apply/non-degree).

Graduate Non-Degree

Current graduate students visiting from other colleges or universities, or community members who hold a conferred baccalaureate and/or graduate degree from a regionally accredited institution, may be considered for Graduate Non-degree admission. The minimum standard for Graduate Non-degree admission is a 3.00 cumulative grade point average on the baccalaureate record. Non-native speakers of English are required to meet the University English language proficiency requirement. An unofficial transcript for all earned or currently in-progress undergraduate degrees, and, if applicable, an unofficial graduate transcript for any graduate coursework taken is required during the application process. These documents are uploaded through the online application for Graduate Non-Degree studies. Applicants who present Ministry of Education recognized international transcripts are also required to provide an official NACES approved course-by-course credential evaluation. For more information on how to submit transcripts, visit the website (http://www2.gmu.edu/admissions-aid/how-apply/non-degree).

Students may enroll in a maximum of 10 undergraduate or graduate (100-799) credits per semester. Admitted Non-degree Graduate students are assessed graduate tuition rates for all (100-799) courses. Non-degree Graduate students are ineligible for financial aid. Meeting the minimum standard for Graduate Non-degree study neither guarantees admission nor implies future admission to a degree-seeking program. Among the factors that may be considered in the admissions process are previous academic performance, professional experience, and academic fit.

Non-degree Graduate students are expected to maintain a 3.00 or better Mason GPA and are subject to the AP6 Graduate Policies (p. 90) section of this catalog.

More information about Graduate Non-Degree application requirements and policies, as well as a listing of restricted programs, can be found online (http://www2.gmu.edu/admissions-aid/how-apply/non-degree).

Senior Citizen Enrollment

Mason welcomes applications from Virginia’s senior citizens. Under the terms of the Senior Citizens Higher Education Act of 1974, eligible Virginia residents, 60 years of age or older with a taxable individual income not exceeding $23,850 may apply to take university courses for credit in either degree or non-degree seeking status without paying tuition. Admitted senior citizens may register to audit courses regardless of income level. Mason provides all of Virginia’s senior citizens with an application fee waiver, regardless of income level.

All application and admission requirements and deadlines apply to Senior Citizen Enrollment.

Upon admission and enrollment, the Senior Citizen Tuition Waiver form must be completed with the Office of the University Registrar in the applicant is seeking benefits under the Senior Citizens Higher Education Act of 1974.
Academic Advising

Non-Degree Undergraduate students may seek academic advising from the Office of Academic Advising, Retention and Transitions (CAART). Graduate Non-Degree students may seek academic advising from the academic department offering their course(s) of interest.

Grades earned through Non-Degree studies remain a part of the student’s permanent Non-Degree record and are recorded on the student’s transcript. They will not appear on the degree transcript unless the student is accepted to a degree program and permission is given by the dean to apply the Non-Degree credit to the degree program. A maximum of 30 undergraduate credits taken in Non-Degree status may apply to an undergraduate degree program if approved by the relevant program dean.

International Students

International students holding F or J visas are not admitted in Non-Degree status. Exceptions exist for specific situations, as determined by, and at the sole discretion of, the Office of Admissions. These exceptions include those students enrolled in either the Undergraduate International Year One Program (p. 131), Graduate International Year One Program (p. 136) or Academic English Program (p. 139), or those who wish to attend George Mason University pursuant to the terms of an exchange agreement or memorandum of understanding (MOU) between Mason and their home university. Additionally, J-1 Au Pair applicants may be considered for Non-Degree status.

International applicants who have questions regarding their eligibility to apply as Non-Degree applicants should contact the Office of Admissions at nondegree@gmu.edu ( nondegree@gmu.edu).

Academic Testing

Office of Admissions

4400 University Drive, MS 3A4
Fairfax, VA 22030

Phone: 703-993-2400
Fax: 703-993-4622

Website: admissions.gmu.edu

Credit by Exam

The Office of Admissions awards transfer credit for several advanced standing examinations based upon minimum score requirements established by Mason academic departments. A complete list can be found online (http://admissions.gmu.edu/exams). Students are responsible for providing official test score transcripts at time of application. Transfer credit evaluations are considered final after the first academic year of enrollment.

Mason Departmental Exams

Proficiency exams are offered in a number of courses usually taken during the first two years. Students may not earn credit by exam for courses in which they are currently enrolled beyond the time allotted to add courses in that semester; or for courses already audited or failed at the university. Transfer students may not earn by exam any part of the 30 credits that must be completed at Mason to earn a degree.

English 101 and English 302 Proficiency Testing

The English Department offers proficiency testing for the required composition courses ENGH 101 Composition (Mason Core) (p. 142) and ENGH 302 Advanced Composition (Mason Core) (p. 142). Students seeking a waiver for ENGH 101 Composition (Mason Core) (p. 142) may take the ENGH 101 Composition (Mason Core) (p. 142) Proficiency Exam. Students seeking a waiver for ENGH 302 Advanced Composition (Mason Core) (p. 142) may submit a writing portfolio to the English Department and complete a timed exam. Students who receive a waiver through these processes do not also receive course credit. Additional information can be found on the exemptions page of the Composition website (http://composition.gmu.edu/waivers).

Foreign Language Placement

SAT Subject Tests in foreign languages are used for placement in many of the languages offered at Mason. Freshman applicants who wish to receive the appropriate foreign language placement should take this exam during their senior year in high school. Transfer students receiving credit for college-level foreign language study completed at other colleges usually do not need a placement test, but should consult the Department of Modern and Classical Languages to determine correct placement.

For students who wish to continue the study of a language at Mason, it is the student’s responsibility to take a placement exam and obtain results before enrolling in a foreign language course. The placement exam is given in conjunction with orientation. The schedule can be found on the website of the Department of Modern and Classical Languages. Specific information on interpreting test scores can be obtained from the department.

Some students whose degree programs require intermediate proficiency in a foreign language may be eligible for a waiver of the requirement based on prior knowledge of foreign language. For information on waiver of the foreign language requirement see the website of the Undergraduate Academic Affairs Office of the College of Humanities and Social Sciences.

Math Placement Exam

The Math Placement Exam is a computer-based test to help assess a student’s proficiency. Entering students are required to complete the exam successfully during orientation unless they have received transfer credit for a mathematics course used to satisfy the University's quantitative reasoning Mason Core requirement. The math placement test schedule can be found online (http://math.gmu.edu/placement_test.php).
Policies

- Academic Policies
- General Policies
- Honor Code and System
- Student Rights and Responsibilities

Academic Policies

- AP1 Registration and Attendance
- AP2 Course Information
- AP3 Grading
- AP4 Degree Application, Conferral and Graduation
- AP5 Undergraduate Policies
- AP6 Graduate Policies
- AP7 Research Policies

AP1 Registration and Attendance

AP1 Registration and Attendance

Registration for the next semester or summer term begins after midsemester of fall or spring semesters and is opened to various groups according to priority (graduate students, seniors, juniors, and so on). The Office of the University Registrar (http://registrar.gmu.edu) assigns each student a time ticket, which is a specific date and time after which a student may register. The time ticket is based on the number of credits earned. Thus, the time ticket will not be the same for all students within a particular priority group. Students should consult the Office of the University Registrar (http://registrar.gmu.edu) and Patriot Web (http://patriotweb.gmu.edu) for information about their registration date and time.

AP1.1 Academic Calendar

The academic calendar may be accessed on the Office of the University Registrar (http://registrar.gmu.edu) website. Mason runs on a semester schedule, including an active summer term.

AP1.2 Academic Load

The minimum full-time load for undergraduate students is 12 credits per semester. For graduate full-time classification, see AP6 Graduate Policies (p. 90). For planning purposes, applicants for admission are asked to indicate their preference for full- or part-time status, and day or evening classes; however, they may freely choose between evening and day sections of courses and may change their full- or part-time status.

Although many students must work to meet living expenses, employment must not take priority over academic responsibilities. Students employed more than 20 hours a week are strongly urged not to attempt a full-time academic load. Students employed more than 40 hours a week should attempt no more than 6 credits per semester. Students who fail to observe these guidelines may expect no special consideration for academic problems arising from the pressures of employment.

Although 12 credits per semester represent a minimum full-time undergraduate load, students planning to graduate in four years need to carry an average of at least 15 credits per semester. Written approval must be submitted to the Office of the University Registrar (http://registrar.gmu.edu) before students can register for more than the maximum allowable credits. Undergraduate and Non-Degree

Undergraduate students should contact their Dean for permission. Graduate and Non-Degree Graduate students should contact their department for permission.

<table>
<thead>
<tr>
<th>Student Status</th>
<th>Maximum Credit Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>18</td>
</tr>
<tr>
<td>Undergraduate on warning, probation or returning from suspension</td>
<td>13</td>
</tr>
<tr>
<td>Graduate</td>
<td>12</td>
</tr>
<tr>
<td>Nondegree</td>
<td>10</td>
</tr>
</tbody>
</table>

AP1.2.1 Financial Good Standing; No Holds on Record

Financial good standing and a university record clear of holds are required for students to receive academic services. Services, including, but not limited to, transcript issuance, diploma release, and class registration (add, drop, withdrawal, etc.) will not be provided to students with a financial balance due or a hold of any kind on their record. Holds are based on outstanding obligations and may be financial. Examples include fines owed for traffic or parking violations, incomplete immunization records, fines owed to the Mason or consortium libraries, and other administrative holds.

AP1.3 Registration Procedures

Patriot Web (https://patriotweb.gmu.edu) will list specific course information before priority registration each semester. Courses listed may be canceled for insufficient enrollment. Mason reserves the right to change the class schedule and adjust the individual section enrollment as necessary.

Registration is usually accomplished using Patriot Web (https://patriotweb.gmu.edu); however, if a section is closed or registration into a selected section is controlled, permission to enroll must be obtained from the academic program offering the course. Various schools and departments have their own processes for granting this permission. For some courses, the student must submit a completed and signed course permit form in person to the Office of the University Registrar (http://registrar.gmu.edu). Students may not attend classes for which they are not registered.

Students must be present at the first meeting of every course (lecture and laboratory) to validate their registration. If students cannot attend the first meeting, they must notify the instructor beforehand if they intend to continue in that section. Otherwise, their name may be removed from the class roll in both lecture and lab.

Students are responsible for registering properly and paying by the deadline. Students should confirm the correctness of their enrollments (including drop and add) via Patriot Web (https://patriotweb.gmu.edu). Incorrect enrollments may result in academic and financial penalties.

Students are responsible for tuition payments and grades received for all courses in which they are registered unless registration is canceled administratively because of suspension, dismissal, or termination; the section is canceled; or the student drops the course before the tuition liability begins. See Office of the University Registrar (http://registrar.gmu.edu) for deadlines.
AP.1.3.1 Course Prerequisites, Corequisites

Course prerequisites or corequisites state requirements for student entry into courses and reflect necessary preparation for attempting the course. It is the student’s responsibility to be aware of these as stated in the catalog and to have taken prerequisites recently enough to be of value. The administrator of the academic unit in which the course is taught or the instructor of the course may summarily drop students who have enrolled in a course for which they have not met the prerequisites (required or recommended). Graduate course prerequisites are normally met with a grade of B- or better; undergraduate course prerequisites are normally met with a grade of C or better. Individual programs may have higher standards. Questions should be addressed to the local academic unit or course instructor.

AP.1.3.2 Changing Registration

Registration changes must be completed within the schedule adjustment period defined below. Changes to registration are usually made via Patriot Web (https://patriotweb.gmu.edu).

The last day for adding a 15-week course is eight calendar days after and including the first day of classes. The last day for dropping a 15-week course is 22 days after and including the first day of classes. After the drop deadline, students may self-withdraw from courses until the start of the selective withdrawal period; a W will appear on the transcript and count toward attempted hours. The last day for selective withdrawal from a 15-week course is nine calendar weeks after the first day of classes (including the first day). Withdrawal after this time period is granted only for nonacademic reasons by the student’s academic dean. This approval is typically given for all courses at once, constituting withdrawal from a semester. For courses that are shorter than 15 weeks, the add, drop, and withdrawal deadlines are set in proportion to the length of the session. These dates are published on the Office of the University Registrar (http://registrar.gmu.edu) website each semester. Students who drop all courses during the drop period will have no entry on their transcript for that semester and will not be considered an enrolled student for that semester. If it is the student’s first semester, the student will not have a Mason transcript and must contact Admissions (https://www2.gmu.edu/admissions-aid) regarding enrollment in a future semester.

All students are expected to complete their initial enrollment before the first day of classes for the semester. Any additions to that enrollment must be processed by the end of the add period through official registration procedures. Students will not receive credit for courses unless their names are on the official class rosters and final grade sheets. Retroactive credits will not be awarded to students who report that they attended classes but were not on the official rosters. After the last day to add, students will not be added to courses except in unusual circumstances beyond the student’s control; such actions require approval by the administrator of the local academic department offering the course.

AP.1.3.3 Canceling Registration

Students who cannot attend classes during the semester for which they have registered should cancel registration using Patriot Web (https://patriotweb.gmu.edu) prior to the first day of classes for the semester.

Refunds of tuition on and after the first day of classes are made according to the tuition-liability dates published in this catalog and the Office of the University Registrar (http://registrar.gmu.edu) website.

AP.1.3.4 Repeating a Course

Some courses are annotated in the catalog as “repeatable for credit.” These are courses which students may repeat and receive additional credit for each time the course is taken. The maximum number of credits is specified in each course’s description. Special topics and independent study courses are examples. All grades and credits earned are included in the calculation of the student’s GPA up to the maximum allowable credits. In cases where the student has exceeded allowable credits in a repeatable class, the grade and credits of the earliest registration of the class for which credit was earned will not be included in the calculation of the GPA.

Undergraduate students (degree-seeking or non-degree) may repeat undergraduate courses that are not repeatable for credit. There is a limit of three graded attempts for all courses. Academic programs may have more restrictive limits. A W does not count as a graded attempt. This policy applies only to repeating the same course, or courses that are designated in the catalog as equivalent. Academic programs may restrict all students from repeating certain courses or restrict students from repeating high-demand courses for the purpose of improving a satisfactory grade. Academic programs may restrict repeats of certain courses by students in their major. Excessive repeats may result in termination from the major. (See AP 5.2.4 Termination from the Major.) Appeals to this policy begin with the student’s academic advisor.

The grade received in a repeated course will replace the earlier grade in the calculation of the GPA, even if the more recent grade is lower. Duplicate credit is not earned. All courses taken and their grades remain part of the student’s transcript. The exclusion of earlier grades and credits from the calculation of the GPA will not change the academic standing or dean’s list notations for the earlier semester. A grade in a Mason course will not be excluded from the GPA based on taking an equivalent course at another university.

Graduate students who have earned a satisfactory grade in a course that is not repeatable for credit are not permitted to repeat the course for replacement credit. Grades of B- and higher are considered satisfactory.
unless the academic program specifies a higher minimum satisfactory grade. Students must obtain permission from their academic program to repeat a course in which they have earned an unsatisfactory grade. Each unit establishes procedures for granting such permission. Duplicate credit is not earned. When a course is repeated, all credits attempted are used to determine warning, termination, or dismissal; the transcript shows grades for all courses attempted; and only one grade per course may be presented on the degree application.

Effective July 1, 2011 Federal Regulations no longer allow federal student aid funds to apply to courses that a student has already taken twice with a passing grade. This limitation does not include courses that are “repeatable for credit,” as described above. Students should contact the Office of Student Financial Aid (https://www2.gmu.edu/admissions-aid/financial-aid) to determine how repeated coursework would affect their financial aid eligibility.

AP.1.3.5 Auditing a Course
Auditing a course requires the instructor’s permission. Audit forms are available at Office of the University Registrar (http://registrar.gmu.edu). A previously-audited course may be taken again for credit in a later term. Students may also audit a course previously taken and passed; however, students may not change from credit to audit status or from audit to credit status after the end of the drop period, as defined above. The usual tuition and fees apply to audit status.

AP.1.4 Special Registration Procedures
AP.1.4.1 Advisor’s Permission to Register
All newly-admitted students, undeclared undergraduates on academic warning or academic probation, and undergraduates returning from suspension, are required to obtain an advisor’s approval for registration. All students are strongly encouraged to consult with their advisor concerning course registration each semester.

AP.1.4.2 Permission to Study Elsewhere
Currently enrolled Mason students who wish to take courses at another regionally accredited U.S. institution must obtain advance written approval. This process permits a student to enroll elsewhere in a suitable course unavailable at Mason or through the Consortium of Universities of the Washington Metropolitan Area. Students who wish to study abroad must contact the Mason Study Abroad (http://studyabroad.gmu.edu). Students wanting to pursue study through the Consortium of Universities of the Washington Metropolitan Area should contact the Office of the University Registrar (http://registrar.gmu.edu).

• The Permission to Study at Another Regionally Accredited U.S. Institution form can be found at the Office of the University Registrar (http://registrar.gmu.edu). Submission of this form does not guarantee approval.
• Catalog numbers and descriptions of courses to be taken elsewhere must be submitted with the request for approval.
• A minimum course grade must be achieved; however, grades themselves do not compute into any Mason GPA. For undergraduate courses, a minimum grade of C (2.0 on a 4.0 scale) is required. For graduate courses, a minimum grade of B (3.0 on a 4.0 scale) is required.
• Graduate students must obtain advance written approval from the director of their graduate program and the graduate dean of their school/college. Undergraduate students must obtain advance written approval from their academic advisor and the academic dean of the school/college offering the course to be taken elsewhere.

AP.1.4.3 Permission to Register as Graduate Student
Registration for courses in a graduate program is permitted only after the student has been notified of admission. Students admitted to degree programs are given preference over non-degree students through the registration process. Dual registration (for example, as a graduate student and non-degree enrollee) is not permitted. The graduate student is responsible for being properly registered and aware of all regulations and procedures required by a program of study. Regulations and degree requirements are not waived nor are exceptions granted because of ignorance of any regulations. Registration in graduate-level courses is restricted to admitted graduate degree students and non-degree graduate students (unless excluded by program). Undergraduate degree students may register for graduate courses only with special approval (see section below). Non-degree undergraduate students may not enroll in courses numbered 500 or above. Courses numbered 800 and above are available only to admitted graduate degree students.

AP.1.4.4 Graduate Course Enrollment by Undergraduates
Courses numbered 700 and above are closed to undergraduates. Undergraduates in degree programs may enroll in graduate-level courses 500 to 699 only with written permission, which must be obtained before registration. Forms are available at Office of the University Registrar (http://registrar.gmu.edu). Written permission is waived for undergraduate students admitted to combined bachelor’s/accelerated master’s programs.

To enroll in graduate courses for credit applicable to an undergraduate degree, undergraduates must have completed all course prerequisites, have exhausted all upper-level undergraduate courses relevant to their educational objectives, and be able to demonstrate the level of maturity required for graduate courses.
Approval to register for reserve graduate credit (earned credit held in reserve to apply later toward a graduate degree) is given only to Mason seniors within 15 credits of completing undergraduate study who have successfully completed all course prerequisites. In addition, this privilege is normally extended only to seniors who have completed at least 12 credits at the university, have a cumulative GPA of 3.00 or better, and have a major in the department offering the course. Approval for reserve graduate credit is limited to 6 credits and does not imply approval for admission into a Mason graduate program or that credit earned will be accepted at another graduate school.

Undergraduates enrolled in graduate courses are eligible to receive only those letter grades applicable to graduate grading. For more information, AP.3 Grading (p. 84). Credit for the same course may not be applied to both graduate and undergraduate degrees.

**AP.1.4.5 Special Registration for Nonenrolled Students**

Degree-seeking students not enrolled in a credit-bearing course but whose academic unit certifies that they are pursuing an activity related to their Mason enrolled program can retain active status by registering for Special Registration (ZREG 200) for a $45 fee. Written approval from the student's advisor and the local academic unit is required. Special registration allows students to retain library and computer privileges, receive a student ID, and buy a parking decal. Students must have active status to apply for or receive a degree, take an exam, or participate in cooperative education.

**AP.1.4.6 Enrolling for Credit Without Grade Points (Satisfactory/No Credit)**

Courses normally graded as satisfactory/no credit (S/NC) are annotated in the catalog, but students may elect to take credit without grade points. Undergraduates may take up to 6 credits to be graded S/NC; this option applies only to electives outside the field of the major, concentration, minor, general education requirement, or certificate program. Graduate students may elect the S/NC grade option only for courses that do not apply to the degree or certificate requirements. S/NC grading will also be used for courses numbered 998 and 999. For more information, see AP.3.3 Additional Grade Notations (p. 84).

**AP.1.4.7 Senior Citizen Waiver Program**

Under terms of the Senior Citizen Higher Education Act of 1974, eligible Virginia residents 60 years of age or older, with a taxable income not exceeding $23,850 for Virginia income tax purposes for the year preceding the award year, are entitled to enroll in courses offered for academic credit on a space available basis without paying tuition and enrollment fees via the Senior Citizen Waiver Program. In order for this to occur, the applicant must meet all admission requirements. Senior citizens who meet all admission requirements, the income eligibility requirement, and have completed a minimum of 75 percent of degree requirements may enroll in a degree program as a full-time or part-time student, during normal registration periods without paying tuition and enrollment fees. They may register for and audit up to three courses offered for academic credit in any one academic term, quarter, or semester for an unlimited number of academic terms, quarters or semesters without paying tuition and enrollment fees. Students seeking to audit a class must notify the Office of the University Registrar (http://registrar.gmu.edu) when registering for classes. Fees for course materials may apply to senior citizen enrollees, and tuition may be charged for courses designed exclusively for senior citizen groups. Senior citizens must adhere to all admissions and registration policies and processes and follow normal procedures to add and drop courses within the deadline dates outlined in each semester's academic calendar.

**AP.1.4.8 Summer Term**

Phone: 703-993-2441
Web: registrar.gmu.edu/summer (http://registrar.gmu.edu/summer)

Summer enrollment provides an opportunity for eligible undergraduate, graduate, and non-degree students to begin or continue the pursuit of their academic goals. Courses are offered in intensive five to twelve-week sessions, as daytime and evening classes and as distance education courses.

Summer registration for current Mason students begins in mid-March while registration for non-degree students begins in late March to early April. Students who are new to Mason are required to apply and be evaluated for admission. Prospective students may contact the Office of the University Registrar (http://registrar.gmu.edu) at 703-993-2441.

**AP.1.4.9 University Consortium**

Mason is a member of the Consortium of Universities of the Washington Metropolitan Area, which includes American University, The Catholic University of America, Corcoran College of Art and Design, Gallaudet University, The George Washington University, Georgetown University, Howard University, Marymount University, National Defense Intelligence College, National Defense University, Trinity Washington University, the University of the District of Columbia, and the University of Maryland-College Park. Eligible Mason students may enroll in courses at any of the consortium institutions. The consortium's cross-registration arrangement permits students enrolled in eligible degree programs at one member institution to take a course at another member institution.

Participation in consortium cross registration is available to degree-seeking juniors, seniors, and graduate students in good standing and currently enrolled at Mason. Participation is limited to courses that are approved by the student's local academic unit and dean, apply to the student's program of study, are not offered during that semester at Mason, and have space available at the visited institution. Additional restrictions apply. Students may take one consortium course per semester, with a career maximum of 6 credits for undergraduates (9–12 if foreign language study is approved) and 6 credits for graduate students. Credit earned through the consortium is considered resident credit, so grades count in the Mason GPA.

Information and regulations, including restricted and excluded courses, for both outgoing and incoming Mason consortium students are available on the web (http://registrar.gmu.edu/topics/washington-consortium). Information pertaining to all member institutions is available.

Citizens who wish to take advantage of this act must complete the appropriate online non-degree or degree application found at Admissions (https://www2.gmu.edu/admissions-aid) and submit all required transcripts and documents. If the application for admission is approved, qualified senior citizens can request a waiver of tuition and enrollment fees by completing the Senior Citizen Tuition Waiver Form, available from the Office of the University Registrar (http://registrar.gmu.edu/forms). To facilitate processing, senior citizens should provide their Mason student identification number on the waiver form.

In addition, the act allows admissible senior citizens to enroll in up to three noncredit courses in any one academic term, quarter, or semester for an unlimited number of academic terms, quarters or semesters without paying tuition and enrollment fees. Students seeking to audit a class must notify the Office of the University Registrar (http://registrar.gmu.edu) when registering for classes. Fees for course materials may apply to senior citizen enrollees, and tuition may be charged for courses designed exclusively for senior citizen groups. Senior citizens must adhere to all admissions and registration policies and processes and follow normal procedures to add and drop courses within the deadline dates outlined in each semester's academic calendar.
4-VA's mission is to promote inter-university collaborations that leverage the strengths of each partner university in order to accomplish much more than any individual university could achieve alone. 4-VA strives to: define instructional models, including the clear definition of instructional costs; significantly expand access for all Virginians to programs preparing them for rewarding careers; increase research competitiveness, and enhance the success rate of students in Science, Technology, Engineering, and Mathematics (STEM) courses and programs. For more information, visit their website (http://4-VA.gmu.edu).

AP.1.5 Withdrawal
AP.1.5.1 Selective Withdrawal for Undergraduates
After the self-withdrawal period, undergraduates enrolled in bachelor's degree programs are eligible to withdraw from a limited number of courses without the dean's approval and at the student's discretion. A W will appear on the transcript and count toward attempted hours. Students may process a maximum of three such selective withdrawals during their entire undergraduate career at Mason. The three courses may have any number of credits.

AP.1.5.2 Course Withdrawal with Dean Approval
For graduate and non-degree students, withdrawal after the last day to drop a course requires approval by the student's academic dean, and is permitted only for nonacademic reasons that prevent course completion. For undergraduate students, withdrawal after the open withdrawal period, for cause within the period, or after a student has used all three selective withdrawals, requires approval by the student's academic dean and is typically permitted only for nonacademic reasons that prevent course completion.

AP.1.5.3 Semester Withdrawal with Dean Approval
Undergraduates taking three or fewer classes may use the selective withdrawal for all courses for a semester; see the Selective Withdrawal for Undergraduates section. Otherwise, students who need to withdraw from a semester beginning the 6th week may do so only for nonacademic reasons with the approval of the academic dean. Withdrawal forms are available at the appropriate academic dean's office. Students who stop attending all classes without the dean's approval and without processing selective withdrawals, if eligible, will receive a grade of F in all courses.

AP.1.5.4 Effects of Course or Semester Withdrawal
All withdrawal results in a grade of W on the student's transcript for the withdrawn course(s). While a grade of W does not affect the GPA, undergraduate students should note that withdrawn courses are part of "attempted credit hours," which serve as the basis for the student's credit level. In the university's undergraduate retention system, GPA standards increase according to credit level. See AP5.2.3 Student Retention Categories (p. 88).

AP.1.6 Attendance Policies
Students are expected to attend the class periods of the courses for which they are registered. In-class participation is important not only to the individual student, but also to the class as a whole. Because class participation may be a factor in grading, instructors may use absence, tardiness, or early departure as de facto evidence of nonparticipation. Students who miss an exam with an acceptable excuse may be penalized according to the individual instructor's grading policy, as stated in the course syllabus.

AP.1.6.1 Absence for Religious Observances or Participation in University Activities
Mason encourages its faculty to make a reasonable effort to allow students to observe their religious holidays or to participate in university-sponsored activities (e.g., intercollegiate athletics, forensics team, dance company, etc.) without academic penalty. Absence from classes or exams for these reasons does not relieve students from responsibility for any part of the course work required during the absence. Students who miss classes, exams, or other assignments as a consequence of their religious observance or for participation in a university activity will be provided a reasonable alternative opportunity, consistent with class attendance policies stated in the syllabus, to make up the missed work. It is the obligation of students to provide faculty, within the first two weeks of the semester, with the dates of major religious holidays on which they will be absent, and the dates for which they are requesting an excused absence for participation in any university-sponsored activity scheduled prior to the start of the semester, and as soon as possible otherwise. Students requesting an excused absence for participation in a university-sponsored activity must provide their instructor with a letter from a university official stating the dates and times that participation in the activity would result in the student missing class. Faculty members are encouraged to take religious observances into consideration when constructing class schedules and syllabi.

AP.1.7 Re-enrollment After Previous Attendance
Undergraduate students who have missed one or more consecutive semesters must follow the requirements detailed in the Enrollment section in the Undergraduate Admission Policies section of the catalog. Graduate and Non-Degree students who have missed two or more consecutive semesters must re-enroll. All graduate students must receive departmental approval prior to re-enrollment. Students may find the re-enrollment form at the Office of the University Registrar (http://registrar.gmu.edu).

AP.1.8 Undergraduate Leave of Absence
All undergraduate students who are planning an absence from George Mason University must submit a formal request for Leave of Absence (http://registrar.gmu.edu/forms) to the Office of the University Registrar (http://registrar.gmu.edu).

Students do not need to complete the Leave of Absence form if they are participating in a George Mason University sponsored study abroad program or have received permission to study elsewhere.

Eligibility Requirements
A student must:

• Be eligible to register for classes
• Be a degree-seeking undergraduate student
• Be registered during the semester immediately prior to the beginning of the Leave of Absence
• Have no holds (e.g., disciplinary, financial, etc.) which would restrict registration
  • The maximum time allowed for a Leave of Absence is two years.
  • A new admission application will be required if a student is away for more than two academic years. Re-admission is not guaranteed.
  • Prior approval is required. Advisors approve one-semester requests. Advisor and Dean approval is required if the leave of absence requested is for more than one semester.
  • Students are not permitted to study elsewhere while on a Leave of Absence.
  • A student who was admitted as a new first semester freshman or transfer student but did not attend will not be eligible for a Leave of Absence. Instead, he or she must contact Undergraduate Admissions.
  • A student who was re-admitted but did not attend will not be eligible for a Leave of Absence. He or she must contact Undergraduate Admissions.
  • Requests for extensions on a previously submitted Leave of Absence require submission of a new Leave of Absence form.

AP Course Information

AP Course Information

AP.2 Course Information

AP.2.1 General Information

Each course indicates:

• the number of credits earned
• course equivalencies
• the repeat status (see AP.1.3.4 (p. 78) for policies regarding repeating a course)

Not Repeatable for Credit

student may attempt the course unlimited times during academic career but will receive credit towards the degree only once

Repeatable within Term for Credit

student may register and receive credit for more than one section of the course within the same academic term

Repeatable within Degree for Credit

student may register and receive credit for more than one section of the course during academic career

Limited to 2 Attempts

similar to ‘Not Repeatable’ but student may only attempt the course twice during academic career

Limited to 3 Attempts

similar to ‘Not Repeatable’ but student may only attempt the course three times during academic career

Individual instructors set hours for independent study, readings, topics, or similar courses. If a course is listed as having an equivalent course, students may not receive credit for both courses.

AP.2.2 Schedule Types

Activity-Based (ACT)

Students receive instruction in a physical-discipline and then practice that discipline under instructor supervision. May include sports or drill formation exercises.

Dissertation (DIS)

Student is enrolled in a course working toward a doctoral dissertation supervised by a faculty member. Course must be numbered 998 or 999.

Fieldwork (FLW)

Coursework primarily consists of specialized fieldwork experiences, which may include professional licensure (in social work, nursing, legal, counseling, business) volunteering, service learning, science fieldwork, etc.

Independent Study (IND)

Refers to those situations where students work primarily on their own initiative on a project through reading and writing. Contact with an instructor may be one-on-one or in small groups and is generally only on a few arranged occasions throughout the semester to receive assignments, have progress checked, etc. Examples include: directed reading, problems and special projects.

Internship (INT)

Refers to those situations where the student applies previously-acquired knowledge and skills in a supervised situation which approximates the conditions under which those knowledge/skills will ultimately be used, usually off campus. Examples: practicums, on-the-job training, work experience programs, cooperative education programs, apprenticeships, externships, preceptorships, etc. Excludes Student Teaching PreK-12.

Laboratory (LAB)

Instructional activities in settings providing specialized facilities or equipment for students to master the subject matter either by performing experiments or practicing the skills being learned. The instructor generally supervises, assists, answers questions, etc., rather than making presentations.

Lecture (LEC)

Primary organization of class instruction. Instructors mainly present material by talking to the class about the subject matter.
Private Music Instruction (PMI)  Student receives one-on-one instruction from faculty member for a specific musical instrument.

Recitation (RCT)  Refers to a secondary organization of class instruction, typically smaller groups reviewing or discussing material previously presented in a lecture section.

Research (RSC)  Individualized research, creative, or scholarly projects that are not for graduate thesis or dissertation.

Seminar (SEM)  Course material is primarily delivered via small group discussion led by a faculty member.

Studio (STU)  Refers to situations where the student is engaged in the practice and use of techniques for productions in the areas of visual and performing arts. This instruction is used to further advance student's skills in the course-specific field. The instructor role varies from direct assistance to simple availability for questions and supervision.

Student Teaching (STC)  Practicum placement in schools PreK-12.

Thesis (THS)  Student is enrolled in a course working toward a master's thesis supervised by a faculty member. Course must be numbered 798 or 799.

500-699  Graduate-level courses; primarily for graduate, bachelor's/accelerated master's and non-degree graduate students. Advanced undergraduate students may request permission to register for these courses by using the Graduate Course for Undergraduate credit or the Reserve Graduate credit forms. Appropriate approval is required and is not guaranteed. Some restrictions may apply.

700-799  Graduate-level courses; primarily for graduate and non-degree graduate students. Some restrictions may apply.

800-999  Doctoral-level courses; primarily for doctoral students

**Special Course Number Designations**

- 798  Master's research
- 799  Master's thesis
- 790, 890  Supervised practicum
- 794, 894  Internship
- 796, 896  Directed reading and research courses for master's and doctoral students
- 998  Doctoral dissertation proposal
- 999  Doctoral dissertation research

**AP.2.3 Contact Hours**

University coursework is measured in terms of quantity and quality. A credit normally represents one hour per week of lecture or recitation, or not fewer than two hours per week of laboratory work, throughout a semester. The number of credits is a measure of quantity. The grade is a measure of quality.

**AP.2.4 Course Numbering**

<table>
<thead>
<tr>
<th>Course Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-199</td>
<td>Lower-division undergraduate courses; primarily for freshman</td>
</tr>
<tr>
<td>200-299</td>
<td>Lower-division undergraduate courses; primarily for sophomores</td>
</tr>
<tr>
<td>300-399</td>
<td>Upper-division undergraduate courses; primarily for juniors</td>
</tr>
<tr>
<td>400-499</td>
<td>Upper-division undergraduate courses; primarily for seniors</td>
</tr>
</tbody>
</table>

**University Transitions Courses**

This series of courses focuses on transition through the various stages of college. UNIV 100 – 199 courses help first-year college students adjust academically and socially, hone decision-making skills, learn about services and opportunities for involvement on campus, and solidify resources and techniques for assessing and improving their academic performance. UNIV 200 – 299 course topics focus on success in the second year of college and include choosing a major or career or participating in a Living Learning Community. UNIV 300 – 399 courses have three tracks: the first is for transfer students making the transition to a new university, the second focuses on career readiness for internships and research experiences, and the third is designed for specific groups of student leaders. UNIV 400 – 499 courses have a focus on research and scholarship, as well as life beyond college in the workplace or graduate school.

**University Special Topics Courses**

Upper-level University courses are open to all students unless specific prerequisites are indicated. They are usually repeated offerings.
AP.3 Grading

AP.3.1 Undergraduate Grading

The university-wide system for undergraduate grading is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
<th>Undergraduate Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.00</td>
<td>Passing</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
<td>Passing</td>
</tr>
<tr>
<td>A-</td>
<td>3.67</td>
<td>Passing</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
<td>Passing</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>Passing</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
<td>Passing</td>
</tr>
<tr>
<td>C+</td>
<td>2.33</td>
<td>Passing</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td>Passing</td>
</tr>
<tr>
<td>C-</td>
<td>1.67</td>
<td>Passing</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
<td>Passing</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
<td>Failing</td>
</tr>
</tbody>
</table>

No credit toward graduation accrues from a failing grade or a grade that is replaced by a retaken course.

AP.3.1.1 Undergraduate Grading Scales

Grading scales are indicated on each specific course. Scales are listed below and indicate possible grades which may be earned within each:

- Undergraduate Regular: allows for all grades listed above in AP.3.1 as well as IN, AB
- Undergraduate Special (ABC/NC): only allows for A+, A, A-, B+, B, B-, C+, C, NC, IP
- Undergraduate Special: allows for all grades listed above in AP.3.1 as well as AB, IN, IP
- Satisfactory/No Credit: allows for S, NC, AB, IN, IP

AP.3.2 Graduate Grading

The university-wide system for grading graduate courses is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
<th>Graduate Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.00</td>
<td>Satisfactory/Passing</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
<td>Satisfactory/Passing</td>
</tr>
<tr>
<td>A-</td>
<td>3.67</td>
<td>Satisfactory/Passing</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
<td>Satisfactory/Passing</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>Satisfactory/Passing</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
<td>Satisfactory 1/Passing</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td>Unsatisfactory/Passing</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
<td>Unsatisfactory/Failing</td>
</tr>
</tbody>
</table>

1 Although a B- is a satisfactory grade for a course, students must maintain a 3.00 average in their degree program and present a 3.00 GPA on the courses listed on the graduation application.

AP.3.2.1 Graduate Grading Scales

Grading scales are indicated on each specific course. Scales are listed below and indicate possible grades which may be earned within each:

- Graduate Regular: allows for all grades listed above in AP.3.2 as well as IN, AB
- Graduate Special: allows for all grades listed above in AP.3.2 as well as IN, AB, S, NC, IP
- Satisfactory/No Credit: allows for S, NC, AB, IN, IP

AP.3.3 Additional Grade Notations

Satisfactory/No Credit (S/NC)

An S grade reflects satisfactory work (C or better for undergraduate students, B- or better for graduate students); otherwise, the student receives no credit (NC). S and NC have no effect on the student's GPA. Entire courses normally graded S/NC are annotated in the catalog, and include doctoral dissertation courses 998 and 999. Students may also individually elect to take credit without grade, with restriction. For more information, see AP.1.4.6 Enrolling for Credit Without Grade Points (Satisfactory/No Credit) (p. 80).

Incomplete (IN)

This grade may be given to students who are passing a course but who may be unable to complete scheduled coursework for a cause beyond reasonable control. Unless the faculty member has specified an earlier deadline, the student must then complete all the requirements by the end of the ninth week of the next semester, not including summer term, and the instructor must turn in the final grade by the end of the 10th week. Faculty members who choose to require an earlier incomplete deadline will be required to file an Incomplete Grade Contract with the local academic unit's office, detailing the work that remains to be done, the general reason for the incomplete, and the student's grade at the point of receiving the incomplete. Unless an explicit written extension is filed with the Office of the University Registrar by the faculty deadline, the grade of IN is changed by the University Registrar's office to an F. The maximum IN extension is to the end of the same semester in which it was originally due. Students who have filed their intent to graduate have only six weeks from the date of degree conferral to resolve any incomplete grades and have the final grades recorded by the University Registrar's office.

While a grade of IN remains on the transcript, it is treated as an unsatisfactory grade in determining probation, suspension, termination, or dismissal. Removal of INs from the transcript may result in retroactive elimination of probation, suspension, termination, or dismissal.

Incomplete, extended (IX)

IX is given by the Office of the University Registrar after receiving an Incomplete Extension form signed by the instructor and the appropriate dean. The extension gives students additional time to complete work; the amount of time is specified by the instructor. The final grade must be submitted to the University Registrar's office before final exams for the semester in which the IN grade was originally due. A grade of IX affects the academic record in the same way as does a grade of IN.

In Progress (IP)

This grade may be given in selected courses, including graduate theses, dissertations, practicums, and internships. IP may also be used when the work of BIS 490 RS: Senior Project (Mason Core) (p. 142), CS 112 Introduction to Computer Programming (Mason Core) (p. 142), CS 211 Object-Oriented Programming, ECON 495 RS: Honors Thesis in Economics, or if a course that is graded S/NC or A/B/C/NC is not completed within one semester. IP has no effect on the GPA. With the exception of the formerly-mentioned courses, IP remains on the
record until the work is completed and a final grade is assigned. An IP in BIS 490 RS: Senior Project (Mason Core) (p. 142), CS 112 Introduction to Computer Programming (Mason Core) (p. 142), CS 211 Object-Oriented Programming, or ECON 495 RS: Honors Thesis in Economics not changed to a final grade by the last day of classes of the next semester, not including summer term, is changed by the Office of the University Registrar to an F. IP grades will also be awarded in courses numbered 799, 998 and 999 until successful completion, and then they will be changed to S/NC. Upon successful completion of 799, 998 or 999 and submission of the final grade, grades for all prior sections will be changed to S/NC.

**Absent with permission (AB)**
A student who has received permission from the academic dean or director to be absent from a final exam for cause beyond reasonable control may receive a temporary grade of AB. A rescheduled exam must be administered within 10 business days of the original exam date, or the AB will automatically become an F. Final determination of academic status is not complete while the AB remains on the transcript.

**Special Provision (SP)**
The grade of SP may be given by a dean to students who are unable to complete the course requirements because of extraordinary long-term circumstances, such as major illness or military deployment. SP has no effect on the GPA and remains on the transcript until the work is completed and a final grade is assigned.

**AP.3.4 Midterm Reports**
Midterm progress is reported for all full-semester 100- and 200-level classes, and for 300- and 400-level classes at the discretion of the professor. The reporting period extends from the fifth through the eighth week of the semester, allowing flexibility to individual faculty in providing reports for their classes. Students should check with their instructors as to when reports will be complete and available for viewing through Patriot Web. These progress reports, which appear in Patriot Web as “Midterm Grades,” do not become part of the student’s official record. They are not calculated in any GPA, and they do not appear on any official or unofficial transcript.

**AP.3.5 Final Grades**
Semester grade reports are available through Patriot Web. Students may print a grade report for their own records or to issue to a third party.

**AP.3.6 Transcripts**
Official transcripts include all credit coursework attempted at the university, including all courses taken as a graduate, undergraduate or non-degree student. Official transcripts will not be issued when unsatisfied financial obligations to the university exist. Unofficial transcripts may be printed by the student from Patriot Web. See the Office of the University Registrar (http://registrar.gmu.edu) for information and instructions on ordering official transcripts.

The Antonin Scalia Law School issues transcripts for courses taken as a law student. See Law School (http://law.gmu.edu) for information and instructions on ordering transcripts.

**AP.3.6.1 Transcript Key**
The transcript key, which appears on the reverse side of official transcript paper, summarizes policy information pertinent to understanding individual students’ transcripts and may be updated as necessary.

**AP.3.7 GPA**
Quality point values are assigned to letter grades as indicated in the grading system table. A quality point score is computed by multiplying the value of a letter grade by the number of credits for the course. For example, a student receiving an A (4.00) in a 3-credit course earns 12 quality points. The GPA is computed by dividing the quality points earned by the number of credits graded A+ through F (GPA hours).

For undergraduates, the GPA computed for the current term gives the current GPA, which is the measure of academic performance in one semester and affects eligibility for the dean’s list. The GPA computed for all institutional credit gives the cumulative GPA, which is the basis for the university’s retention policies, including good standing, warning, probation, suspension, and dismissal. Cumulative GPA also determines students’ eligibility to graduate and have university honors posted to their record at graduation.

Current GPA and cumulative GPA do not apply to graduate students. A notation of academic warning is entered on the transcript of a graduate student who receives a grade of C, or a grade of F in a graduate course or while a grade of IN or IX is in effect. A degree GPA is computed for graduate students based on graded courses completed at the university and applied toward the degree. For more information, see AP6 Graduate Policies (p. 90).

**AP.3.8 Change of Grade**
The conditions and time limits for changes from the temporary grades IN, IP, AB, and SP to final grades appear in Additional Grade Notations (p. 84).

Once a final grade has been recorded by the Office of the University Registrar, it can be changed only in cases of computational or recording error, or pursuant to a successful appeal of the grade as described below. Additional work of any type submitted to improve a grade after the final grade has been assigned and sent to the Office of the University Registrar is never accepted.

All changes of final grades must be initiated, approved, and recorded by the last day of classes of the next regular semester (spring for fall grades, and fall for spring and summer term grades).

**AP.3.9 Grade Appeals**
Although faculty members are generally the best judges of student performance, there may be times when a student believes a grade is unfair. In such cases, the student should ask the faculty member to reconsider the grade. If the student is not satisfied, an appeal may be made to the local academic administrator of the unit offering the course. The administrator should ask the student to return to the faculty member who assigned the grade for further consultation.

If the faculty member is no longer associated with the university, the administrator will appoint a faculty surrogate, who will assume the authority of the instructor of record.

If a mutually satisfactory agreement is not reached, the student may request that the administrator form a review committee of three faculty peers of the faculty member who assigned the grade. If the administrator believes the student’s appeal does not have merit, this reservation is reported to the collegiate dean. If the dean concludes the student’s appeal does not have merit, no review is conducted.

The faculty member or the student may challenge and have replaced one of the three members of the committee without giving a reason for the
challenge. The committee meets separately with the faculty member and the student to explore the full particulars of the case. A nonparticipating observer of the student’s choice may attend the meeting. Every effort is made to avoid an adversarial relationship.

After the committee has reviewed the case thoroughly, it issues to the administrator (with a copy to the faculty member) a written recommendation that includes the reasons for its findings. At this time, the faculty member has an opportunity to take the recommended action, if any. If the matter is not resolved at this point, the administrator considers the committee recommendation and makes a recommendation to the dean. If the dean decides that the recommendation to change the grade is appropriate and the faculty member refuses to make the change, then the dean may direct the Office of the University Registrar to do so. The decision of the dean is not subject to further appeal.

Grade appeals are not accepted after the last day of classes of the following semester (spring for fall grades, fall for spring and summer grades).

The Provost’s Office does not consider grade appeals, nor does the University Academic Appeals Committee.

AP.3.9.1 Pending Grade Appeal for Students in Academic Difficulty
A student may request a delay from the dean in imposing academic suspension because of a pending grade appeal that could change the student’s status. An approved delay allows the student to register.

If the grade appeal is successful, the official transcript is corrected and the student continues in classes as a student in good academic standing, on probation or on warning. If the grade appeal is not successful, the student is required to stop attending all classes immediately. No record of registration for the academic period appears on a transcript and the student receives the appropriate refund as of the decision date.

AP.3.10 Final Exams
Undergraduate courses usually culminate with a final exam. Except in predominantly laboratory courses, final exams may not be given during the last week of classes. Exams may not exceed the scheduled length of two hours, 45 minutes. Changes in location or time of in-class final exams must be approved by the appropriate department chair and dean. A professor who is considering assigning a take-home exam or significant end-of-semester paper or project should inform the students at the beginning of the semester. Such assignments should be distributed by the beginning of the last week of classes so that students can coordinate them with preparation for other exams. Students must not be required to submit exams before the date of the regularly scheduled exam for a course. Retaking final exams is not permitted. Students who have more than two examinations scheduled on the same day should consult their instructors to make other arrangements. If campus-wide disruptions to class meeting schedules occur during the semester (e.g., due to severe weather), a revised final exam schedule may be issued. In this event, students and faculty are expected to adhere to the revised schedule. The examination period may be prolonged and individual exams may be shifted to the last day of the revised exam period.

Students with permission to take deferred examinations may receive a temporary grade of AB (absent with permission). Rescheduled exams must be completed within the time deadline set by the university. See below for more information.

AP.3.10.1 Absences from Final Exams
Absences from final exams will not be excused by the instructor except for sickness on the day of the exam. Other causes must be approved by the student’s academic dean or director. The effect of an unexcused absence from an undergraduate final exam shall be determined by the weighted value of the exam as stated in the course syllabus provided by the instructor. If absence from a graduate final exam is unexcused, the grade for the course is entered as F. See AP.3.3 Additional Grade Notations (p. 84) for information on being absent with permission.

AP.4 Degree Application, Conferral and Graduation

AP.4.1 Application for Degree
In the semester prior to the expected completion of degree requirements, students must confirm their intent to graduate through Patriot Web (https://patriotweb.gmu.edu). The deadline to apply to graduate is generally three to four months prior to the conferral date. Specific deadlines and complete instructions regarding graduation are published on the Office of the University Registrar’s website (http://registrar.gmu.edu). Separate applications for each graduate degree or certificate are required.

For a degree to be conferred, all coursework must be completed, even if the coursework is not being applied to the degree. All students must complete the following degree requirements prior to the conferral (graduation) date: credit-by-exam, oral exams, theses, scholarly papers, and comprehensive exams. Students in doctoral programs must also complete internship/practicum requirements prior to the conferral date. Master’s theses and doctoral dissertations are due in the library well before the conferral date. For more information visit the University Dissertation & Thesis Services web (http://library.gmu.edu/udts) page (http://thesis.gmu.edu).

Students must have active registration status in the semester or summer term of graduation. Students not registered for coursework in the term of graduation must obtain a special registration. (For more information, see AP.1 Registration and Attendance (p. 77).) Degree applications will not be automatically extended if graduation is postponed; students must reapply for each conferral date.

AP.4.2 Degree Conferral
Mason awards degrees and certificates in programs and at levels authorized by the State Council of Higher Education for Virginia (SCHEV). The university confers degrees at the bachelor’s, master’s, and doctoral levels. An academic program may include a degree program and additional majors, minors, or certificates. The university offers no certificate program below the bachelor level; some post baccalaureate certificates, however, may be awarded concurrently with the bachelor’s degree. For more information, see listings in Find Your Program (http://catalog.gmu.edu/programs).

AP.4.2.1 Definitions of Degree Components
• Degree program, major, or field: A program of study that normally requires at least 30 credits of coursework in the specified field. The primary program name (degree and major or field) appears on the diploma for bachelor’s and master’s degrees. Only the degree name appears for doctoral degrees. An undergraduate who desires to graduate with a BA or BS degree in two or more subjects must meet departmental requirements for the major in each field. For each major, at least 18 credits used to fulfill its requirements must be applied
only to that major, i.e., cannot be used to fulfill the requirements of a concentration, minor, undergraduate certificate, or another major.

- **Concentration**: A second-order component of a degree program. A concentration consists of at least 12 hours that are not applied to any other concentration. Undergraduate concentrations are approved by the Undergraduate Council at the undergraduate level or by the Graduate Council at the graduate level.

- **Certificate**: A non-degree program complementary to a degree that requires at least 15 unique undergraduate or 12 graduate credits. For each undergraduate certificate, at least 15 credits used to fulfill its requirements cannot be used to fulfill the requirements of a major, concentration, minor, or another undergraduate certificate. The name of a completed certificate program appears on the transcript after the conferral of an undergraduate degree. Certificates are approved by Undergraduate or Graduate Council as appropriate. Credits from a maximum of one graduate certificate may also apply to a master’s or doctoral degree program.

- **Minor**: A complement to a bachelor’s degree program or major normally requiring at least 15 credits in a field other than the student’s major. Of the courses presented for a minor, at least 8 credits must be applied only to that minor and may not be used to fulfill requirements of the student’s major, concentration, an undergraduate certificate, or another minor. When coursework for a minor is used to fulfill a component of a major, only those credits in excess of the 30 required for a major may be applied to the requirement for unique credits.

- **Option**: The choice of a thesis or nonthesis path in graduate programs.

**AP.4.2.2 Catalog Requirements for Degrees**

Catalog year refers to the setting of course and non-course requirements within academic programs as stated in the school and college section of a specific catalog. Catalog year does not set academic policies other than program requirements in place, however. For more information, see the Knowledge of University Policies section of the Student Rights and Responsibilities (p. 101) page. Not all programs and degree components are available in all catalogs. For any one degree, all requirements must be met as stated in a single catalog. The only exception is that Bachelor’s degree students may select a minor from another catalog year for which they are eligible, as noted below.

Bachelor’s degree candidates may choose to graduate under the terms of any catalog in effect during their enrollment in degree status. Students who have been inactive for two or more years or who have attended another institution without prior approval from their academic dean or director must graduate under a catalog in effect at or after their re-admission and during their enrollment in degree status.

Master’s and doctoral degree candidates who have been continuously enrolled may choose to graduate under the terms of any catalog in effect during their enrollment in degree status. Students who have been inactive more than one year, however, may be required by their program to graduate under a catalog in effect after they have been granted permission to re-enroll. In no case may a student choose the requirements of a future catalog year that take effect after the student’s degree is anticipated.

**AP.4.3 Graduation**

Graduation ceremonies provide opportunities for students and their families to share in the conferral of academic degrees. Students who wish to participate should check GMU Events (http://events.gmu.edu) for current information about all graduation details including tickets, regalia, and schedules. Note: there is one formal commencement ceremony per year, in May, that includes all schools and colleges; students are recognized in groups, by their degrees. Each college holds a separate convocation where individual student names are called. Bachelor’s and master’s degree candidates who declare their intent to graduate in August but who have not yet completed all degree requirements may participate in the graduation ceremonies in anticipation of degree completion. Their names are marked with an asterisk identifying them as candidates pending completion of all requirements. Doctoral students may participate only if they have successfully completed all degree requirements, including defending and submitting a signed, final copy of their dissertation by the deadline. A Winter Graduation ceremony is held for August and December graduates where each student is individually recognized.

**AP.4.4 Conferral of Posthumous Degree**

A posthumous degree is an official Mason degree that is awarded to a deceased student in recognition of the student’s academic achievement. The criteria for the award are established in order to uphold academic and institutional integrity. If a student does not qualify for a posthumous degree, an “In Memoriam” degree may be awarded to a student in good academic standing. Either degree award is subject to final review by the Provost.

**Criteria**

A posthumous degree may be awarded if, at the time of the student’s death, he or she was enrolled in George Mason University, was in good academic standing. Either degree award is subject to final review by the Provost.

**AP.5 Undergraduate Policies**

**AP.5.1 Student Classification**

Admitted undergraduates are classified as follows:

- **Freshman**: 0–29 credits completed
- **Sophomore**: 30–59 credits completed
- **Junior**: 60–89 credits completed
- **Senior**: 90 or more credits completed
Full-time undergraduates are classified as those students enrolled in 12 or more credits per semester. Completed hours are defined as a combination of all credits earned at the university plus credits transferred from other institutions or obtained by testing. Please note that different criteria for full-time status may apply for tuition, verification, and financial aid purposes. For more information, contact the offices of Student Accounts (http://studentaccounts.gmu.edu), University Registrar (http://registrar.gmu.edu), and Student Financial Aid (https://www2.gmu.edu/admissions-aid/financial-aid), respectively.

**AP.5.2 Academic Standing**

The following system of academic progress became effective in fall 2004 and applies to all undergraduate degree and nondegree students at Mason.

Academic retention is based solely on the cumulative GPA. The cumulative GPA required for retention varies according to the credit level or attempted credit hours, which is a combination of all credits attempted at the university plus credits transferred from other institutions or obtained by testing.

**AP.5.2.1 Academic Period**

Academic period refers to fall semester, spring semester, or summer term. For determining the duration of academic warning, probation, and suspension, academic period is defined as follows:

Each academic period begins on the 15th day following the last scheduled day of final exams for the previous period. Each academic period ends on the 14th day after the last scheduled day of final exams.

For example, assume that the last scheduled day of final exams for a semester is Monday, December 23. That period then ends on Monday, January 6. The next period begins on Tuesday, January 7.

**AP.5.2.2 Good Academic Standing**

Students are in good academic standing unless they are academically dismissed, suspended, or on probation. Students on academic warning are still considered to be in good academic standing.

**AP.5.2.3 Student Retention Categories**

Students with at least 7 attempted credits and a cumulative GPA of less than 2.00 fall into one of three categories: warning, probation, and suspension. All notations of academic standing are included in a student’s permanent record. The cumulative GPA range that defines each of the categories varies according to the credit level, as noted below:

<table>
<thead>
<tr>
<th>Credit Level</th>
<th>Warning</th>
<th>Probation</th>
<th>Suspension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempted Credit Hours:</td>
<td>Cumulative GPA Range:</td>
<td>Cumulative GPA Range:</td>
<td>Cumulative GPA Range:</td>
</tr>
<tr>
<td>7-16</td>
<td>0.00-1.99</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>17-29</td>
<td>1.75-1.99</td>
<td>1.00-1.74</td>
<td>0.00-0.99</td>
</tr>
<tr>
<td>30-59</td>
<td>1.85-1.99</td>
<td>1.25-1.84</td>
<td>0.00-1.24</td>
</tr>
<tr>
<td>60-89</td>
<td>1.95-1.99</td>
<td>1.55-1.94</td>
<td>0.00-1.54</td>
</tr>
<tr>
<td>90+</td>
<td>1.85-1.99</td>
<td>0.00-1.84</td>
<td></td>
</tr>
</tbody>
</table>

**Exception for Freshmen and Transfer Students**

Freshmen and transfer students in their first semester of study at Mason will receive probation as the strongest academic sanction. GPA retention levels, as stated above, will apply in all subsequent semesters. Students in this category should be on notice that they must improve their academic record to avoid suspension in future semesters; in particular, they should consult their advisors and consider repeating courses to achieve academic good standing.

**AP.5.2.4 Termination from the Major**

Undergraduate students in any retention category may be reviewed for possible termination by their dean according to the published policy approved by the major program. Termination from a major—or from all majors in a college—may be imposed as a result of excessive repeating of required courses without achieving the minimum standard, and for other evidence of continued failure to make adequate progress toward completion of the major. Students must be informed a semester in advance and given a chance to meet the standard or appeal according to the published college procedures. Once a termination decision has been made, a letter of termination is sent to the student by the dean and notification of termination from the major is affixed to the student’s academic record. Students who are terminated are no longer eligible to pursue that major, but may declare a different major within the university to complete their undergraduate degree.

**AP.5.2.5 Academic Suspension**

Students in degree status who incur a first suspension following a spring semester or summer term serve a period of suspension through the next fall semester. Students who incur a first suspension following a fall semester serve a period of suspension through the next summer term. A second suspension is for one calendar year: two semesters and a summer term. Students returning from suspension are on probation for one academic period. Course credits earned at other colleges during the period of suspension from Mason (for academic or nonacademic reasons) are not accepted for the degree program.

Nondegree undergraduate students placed on suspension have no specified rights of return to the university. Nondegree students who have been suspended and wish to resume their studies after a period of absence must qualify for readmission through the Office of Admissions (https://www2.gmu.edu/admissions-aid).

**AP.5.2.6 Academic Dismissal**

A third suspension results in academic dismissal, a status that is usually permanent. In exceptional cases, students who have been dismissed may apply for readmission after a minimum absence of three calendar years from the university, but only if they meet one or more of the following conditions after having been dismissed:

- Demonstrate academic success (2.50 GPA or better) in at least 18 credits of classes taken during the period of dismissal at an accredited two- or four-year college or university. Such credits may be considered for transfer back to Mason, but there is no guarantee of acceptance of the credit.
- Provide other evidence of a renewed ability to achieve academic success.
- Provide evidence that all degree requirements will be met once an additional 12 or fewer credits are complete.

Meeting the above requirements does not guarantee a return. The Office of Admissions and the appropriate school or college dean will make individual decisions in the best academic interests of the student and the university. For students seeking readmission to a new school or college, the new dean will make the decision in consultation with the former dean and the Office of Admissions (https://www2.gmu.edu/admissions-aid). For more information, see AP.5.2.9 Academic Clemency (p. 89).

**AP.5.2.7 Academic Performance and Credit Limit**

Undergraduate students on warning, probation, or returning from suspension are limited to a maximum of 13 credits for following semesters until they achieve good standing. Students registered for 14
or more credits are responsible for seeking academic advisement and adjusting their enrollment to a maximum of 13 credits.

**AP.5.2.8 Academic Standing and Student Activities**

Only students in good academic standing are eligible to hold or run for elective or appointive office in any organization or activity associated with Mason, compete in any athletic or other activity representing Mason on either an intercollegiate or a club level, or serve as a working staff member of any student organization. Note that students on warning are considered to be in good standing. Some organizations and activities may impose stricter academic criteria for participation.

A student whose eligibility for an activity requires the completion of a semester will have fulfilled that requirement when the student's publicly scheduled exams are over, unless continued eligibility depends on the grades received. In the latter case, the student will not become eligible until the end of the semester as defined in AP.5.2.1 Academic Period (p. 88).

**AP.5.2.9 Academic Clemency**

Undergraduate students returning to Mason after a separation of a minimum of three calendar years may petition their academic dean to have up to 16 previous credits earned at Mason removed from the calculation of their cumulative GPA. Courses and grades so removed will not count toward graduation requirements. Note that the courses, with their original grades and the notation “Academic Clemency” will remain listed on the student’s transcript permanently. The petition for clemency must be filed within 12 months starting from the first day of the re-enrollment semester at Mason; approval may depend on successful completion of that semester. Approval of the request is neither automatic nor guaranteed.

**AP.5.3 Requirements for Undergraduate Programs**

**AP.5.3.1 Declaration of Major**

To plan a sound academic program, undergraduates should select a degree and major as soon as it is practical but no later than four weeks before the end of the sophomore year. To declare a major, students should confer with the appropriate advisor in the new major program. Students approaching the recommended point for declaring a major, but still uncertain of their choice, should consult:

Student Academic Affairs - Advising, Retention, and Transitions
Student Union Building I, Room 3600
advisor@gmu.edu

Note that all degree components including Mason Core, majors and concentrations must be contained in a single catalog year. See AP.4.2.2 Catalog Requirements for Degrees (p. 87) for exception regarding minors.

**AP.5.3.2 Requirements for Bachelor's Degrees**

- **Admission.** Candidates must have been officially admitted into degree-seeking status.
- **Residency.** At least one-fourth of the total credits applied to the degree must be completed at Mason and include at least 12 upper-level credits (courses numbered 300 or above) in the major program. A maximum of 30 credits earned in non-degree status at Mason can be applied toward a bachelor’s degree.
- **Credit Hours.** Students must complete at least 120 credits that count toward graduation and fulfill all degree requirements. A few programs require more than the minimum 120 credits.
- **Quality.** Candidates must achieve a cumulative GPA of 2.00 or higher, and must meet all higher standards for grades allowable in majors, minors, or certificates. The Mason cumulative GPA does not include transfer courses.
- **Upper Level.** Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.
- **Mason Core (p. 142) (formerly University General Education).** Candidates must complete categories of general education courses and writing requirements as described for their catalog year. This includes satisfying the requirement of two semesters of English composition (ENGH 101 Composition (Mason Core) (p. 142) and ENGH 302 Advanced Composition (Mason Core) (p. 142)) with a grade of C or better. Additionally, as part of the university's commitment to student writers in all undergraduate programs, at least one upper-division course in each major has been designated as fulfilling the writing-intensive (WI) requirement.
- **College/Department General Education.** Students must satisfy additional general education requirements for specific degree programs, as described on each individual college page.
- **Major.** Students must satisfy all requirements for their major and degree program, as described on each individual college page, and as detailed in the degree evaluation for their catalog year.

**AP.5.3.2.1 English Composition Requirement**

Mason requires students to complete at least two semesters of English composition. Students who complete the Honors curriculum complete the English composition requirement through coursework in those programs. Equivalent credit may be granted through course transfer or external exam. Exemption (but not credit) may be granted through a proficiency exam administered by the English department. All other students must enroll in ENGH 101 Composition (Mason Core) (p. 142) (or ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142)) upon admission and, after meeting its prerequisites, ENGH 302 Advanced Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in composition courses to fulfill degree requirements.

**AP.5.3.2.2 Writing-Intensive Course Requirement**

As part of the university’s commitment to student writers in all undergraduate programs, at least one upper-division course in each major has been designated as fulfilling the “writing-intensive” (WI) requirement. While other courses in the major may require written projects, teachers of the designated WI courses will devote class time to instruction on how to complete assignments successfully, assign and grade a minimum of 3500 words, provide constructive feedback on drafts, and allow revision of at least one graded assignment. See the description of each major for the specific course or courses that fulfill the WI requirement. For a complete list of approved courses, see Writing Intensive (p. 151) courses.

**AP.5.3.3 Second Bachelor’s Degree**

A second bachelor’s degree may be earned, either concurrently or sequentially. To graduate with two degrees, students must present at least 30 Mason credits beyond those required by either degree alone. For sequential awarding of degrees, students must be readmitted for the second degree through the Office of Admissions and complete a minimum of 30 credit hours after that point to have fulfilled the residency requirement for that degree.

Students who are concurrently pursuing two bachelor's degrees at Mason must present a detailed program of study for both degrees and obtain authorizing signatures from the chair or director of each degree program and the dean or director, if required by the college, school, or institute.
Students may declare the second concurrent degree by completing the Declaration of Second Bachelor's Degree section of the Change/Declaration of Academic Program Form. Both degrees must be declared the semester before the student intends to graduate. Students pursuing concurrent degrees should apply to graduate when both degrees are complete, or be prepared to meet the requirements noted above for sequential awarding of degrees.

**AP.5.3.4 Minors**

Students may elect minor programs of study in addition to major fields by submitting a completed Minor Declaration (Undergraduate) form to the Office of the University Registrar. Minors usually require between 15 and 21 credits of study, at least 8 of which must be applied only to that minor and may not be used to fulfill requirements of the student's major, concentration, an undergraduate certificate, or another minor. Students must complete at least 6 credits in their minor at Mason and achieve a minimum 2.00 GPA in courses applied to the minor. Students interested in a minor should consult the appropriate departmental sections in this catalog. Note that these are university minimum requirements; individual programs may have higher standards and/or more restrictive requirements.

**AP.5.3.5 Undergraduate Certificates**

Students may elect undergraduate certificate programs of study in addition to major fields by submitting a completed Change/Declaration of Academic Program form to the Office of the University Registrar. Students pursuing undergraduate certificates must be admitted to Mason in degree-seeking status. Undergraduate certificate programs must have 15 unique credits that cannot also be used to fulfill the requirements of a major, a concentration, a minor, or another undergraduate certificate. More than half of the credit hours for an undergraduate certificate must be taken at Mason, and more than half must be taken in degree-seeking status. Students must achieve at least a 2.00 GPA in courses applied to the certificate.

Students with a previous bachelor’s degree, who are admitted to an undergraduate certificate program alone, have four years to complete certificate requirements. Such students who are given permission to re-enroll following an absence from Mason may not count the four-year time limit as beginning on the date of re-enrollment. International students attending in F-1 or J-1 status have a more restrictive time limit; contact the Office of International Programs and Services for information. Students who will not meet the published time limit because of circumstances beyond their control may petition their dean for an extension. Failure to meet the time limit or to secure approval of an extension request may result in termination from the program.

A completed undergraduate certificate may be posted to the transcript only after completion of a bachelor's degree. Note that these are university minimum requirements; individual programs may have higher standards and/or more restrictive requirements.

**AP.5.3.6 Change of Academic Program**

Students considering a change in their academic program (major or degree) are encouraged to see an advisor in the Academic Advising and Transfer Center or a faculty advisor in their prospective discipline. Departmental sections of this catalog describe requirements for acceptance. Students not meeting the requirements may appeal to the department chair for an exception.

Once a student has completed 60 credits, a change of major requires a meeting with an advisor in the new major before the change is complete. To file a change of major, signatures of advisor or designate in the new major program must be obtained on the Undergraduate Change/Declaration of Academic Program form (http://registrar.gmu.edu/forms).

**AP.5.3.7 Credit for More than One Undergraduate Major**

Students seeking to graduate with a BA or BS degree in two or more subjects must meet departmental requirements for the major in each field. For each major, at least 18 credits used to fulfill its requirements cannot be used to fulfill the requirements of another major, a concentration, a minor, or an undergraduate certificate.

Students pursuing two or more concurrent majors must complete the Second Major section of the Undergraduate Change/Declaration of Academic Program form (http://registrar.gmu.edu/forms). The applicant must present a detailed program of study for both majors and obtain the authorizing signature from the chair or director of the second program and from the dean or director, if required by the college, school, or institute. When required by a specific academic unit, department chairs and deans or directors must also approve all changes to the programs of study. Students may begin a program at any time that permits completion before the anticipated graduation date.

**AP.5.4 University Honors**

A student graduates with distinction from the University when at least 60 undergraduate institutional credits applied toward graduation are earned at Mason, and the student's cumulative GPA is at least equal to one of three values:

- 3.90, summa cum laude
- 3.70, magna cum laude
- 3.50, cum laude

A student graduates with recognition from the university when between 45 and 59 (inclusive) credits applied toward graduation are earned at Mason, and the student's cumulative GPA is at least 3.80.

In addition, high achieving students may qualify for membership in one of the many recognized university honor societies. In 2011, George Mason University was awarded a chapter in Phi Kappa Phi, the nation’s oldest all-disciplinary honor society. In 2012, Mason was awarded a chapter of Phi Beta Kappa, the nation’s oldest and most prestigious honor society dedicated to the liberal arts. Membership is by invitation only to both of these honor societies.

**AP.5.5 Dean's List**

Students in degree status who take at least 6 credits in a semester and earn a semester GPA of 3.50 or higher merit placement on the Dean's List. Courses subsequently repeated and excluded will not retroactively affect Dean's List status. This notation will be placed on the individual’s permanent record.

**AP.6 Graduate Policies**

**AP.6.1 Graduate Programs**

At the graduate level, Mason offers certificates and master's and doctoral degrees. There are also a number of combined bachelor's and accelerated master's degree programs for academically-strong undergraduates with a commitment to research.
### AP.6.1 Student Classification
Students may access graduate classes and programs according to their status as nondegree or enrolled degree students. For more information, see Graduate Admissions (p. 68).

### AP.6.2 Full-Time and Half-Time Status Classification
Graduate students are considered full-time if they are enrolled in at least 9 graduate credits per semester or hold a full-time assistantship (total 20 hours a week) and are enrolled in at least 6 graduate credits per semester. Graduate students are considered half-time if they are enrolled in at least 4.5 graduate credits per semester.

Master's students who are enrolled in thesis credits are considered full-time if they are enrolled in at least three credits of 799 per semester. Master's students may enroll in 1 credit of 799 and be considered in status (either full-time or half-time) only if they have completed 3 credits of 799 and the student along with their advisor and department chair certify each semester that the student is working full-time or half-time on the thesis. See AP.6.9.3 Master's Thesis (p. 95) for more information regarding 799.

Doctoral students who are enrolled in dissertation credits (either 998 or 999) are considered full-time if they are enrolled in at least 6 credits per semester, regardless of whether they hold an assistantship. Doctoral students who have advanced to candidacy and have completed the minimum number of credits required by the university and their degree program, including the minimum number of credits of 998 and 999, are considered in status (either full-time or half-time) if they are registered for at least 1 credit of 999 and the student along with their advisor and department chair certify and communicate to the Office of the University Registrar each semester that they are working full-time or half-time on the dissertation. See AP.6.10.6 Dissertation Registration (p. 98) for more information regarding 998 and 999.

To be considered as full-time under the aforementioned clauses, a student must complete and submit the appropriate forms to the Office of the University Registrar prior to the first day of classes for the semester. Different requirements for full-time and half-time status may apply for tuition, verification, loan deferral, and financial aid. Contact Student Accounts (http://studentaccounts.gmu.edu), the Office of the University Registrar (http://registrar.gmu.edu), and Student Financial Aid (https://www2.gmu.edu/admissions-aid/financial-aid), respectively, for more information. Note that the official designation of time status for all students is determined by the Office of the University Registrar.

### AP.6.3 Academic Advising
When a student is admitted to graduate study, the student is assigned a faculty advisor by the academic program responsible for the student's program of study. Registration for newly admitted graduate students, as well as continuing students, begins with a visit to the student's academic advisor. There, the student can obtain information about specific courses and degree requirements and develop an individual program of study. Progress in an approved program of study is the shared responsibility of the student and the advisor. The graduate student is responsible for compliance with the policies and procedures of the college, school, or institute, and all applicable departmental requirements that govern the individual program of study. Students should consult with their advisors before registration each semester.

### AP.6.4 Student Status
#### AP.6.4.1 Change from Nondegree Status
A student admitted for graduate study in nondegree status may apply to obtain degree status within the same program. All admission requirements (as defined by the student's program for degree status) must be met, including official transcripts and letters of recommendation. If the student intends to use credits earned in nondegree status toward a degree, the credits must be approved on the Graduate Transfer of Credit Request form. The credit must have been earned within six years prior to first enrollment as an admitted student in the specific certificate or degree program, and a minimum grade of B (3.00) must have been earned. There is a limit on the number of credits that can be transferred when changing from nondegree to degree status; please see the applicable degree program for specific information.

#### AP.6.4.2 Removing Provisional Qualifier
For policies concerning students admitted provisionally, see Graduate Admission Policies (p. 68).

#### AP.6.4.3 Permission to Re-Enroll
Permission to re-enroll in a program must be obtained by all graduate certificate, master's and doctoral degree students who have failed to enroll in at least 1 credit of coursework for two or more consecutive semesters at Mason. A program may allow a student to petition to graduate under any catalog in effect while the student was enrolled. All program components, including concentrations, must appear in the catalog for the year selected. The final decision as to catalog year rests with the unit dean or director. The Graduate Re-enrollment form is available here (http://registrar.gmu.edu/forms).

#### AP.6.4.4 Voluntary Resignation from Graduate Academic Program
Degree-seeking students may officially resign from their academic program with the approval of their department or program chair and their dean. The Voluntary Resignation form must be approved by the student’s program and Student Accounts, then submitted to the Office of the University Registrar for notation on the transcript. Resignations after the drop period will result in grades of W on the student’s transcript for that semester and removal from any future registered courses. Program resignation is final.

### AP.6.5 Credit by Exam, Reduction or Transfer
#### AP.6.5.1 Credit by External Exam
Degree credit for satisfactory completion of an external exam is limited to those exams and achievement levels specifically approved by the Graduate Council.

#### AP.6.5.2 Reduction of Credits
All students must meet the university residency requirement; however, the number of credits required by a doctoral, or master's program may be reduced on the basis of a relevant post-baccalaureate degree earned prior to admission. Reduction of credits requires the approval of the program director and the dean or director of the school, college, or institute. They determine whether the credits are applicable to the degree program and the number of credits to be reduced.

### Doctoral Programs
The maximum reduction for doctoral programs derives from the total credits required by the program and the university requirements for institutional, resident, and unique credits. For a 72-credit program, the maximum reduction is 30 credits. Programs that require more than 72 credits may be reduced by more than 30 credits provided that the student meets the aforementioned university requirements. Doctoral students earning a secondary master's degree at Mason do not receive a reduction...
of credits and should indicate on their program of study which courses apply to the doctoral degree. Because individual doctoral programs may have more restrictive policies, make sure to consult with the program and/or academic unit to learn of their reduction of credit policies.

**Masters Programs**

The maximum reduction for master’s programs derives from the total credits required by the program and the university requirements for institutional, resident, and unique credits. Because individual masters programs may have more restrictive policies, make sure to consult with the program and/or academic unit to learn of their reduction of credit policies.

Students requesting a reduction of credits must supply official transcripts. For transcripts from outside the United States, students must supply an official transcript evaluation and an official translation for transcripts not in English if these documents were not supplied in the admission process. Reduction of credits requests from students who are admitted provisionally are not considered until the students have fulfilled the conditions of their admission and had the provisional qualifier removed from their records.

Credits used in reduction of credits are not subject to time limits, and the credits must have been applied to a previous degree. The credits used in the reduction may include transfer credit used for a previously earned degree but may not include credits that are applied to both an undergraduate and graduate degree in a joint bachelor’s/master’s program or in Mason’s Bachelor’s/Accelerated Master’s Programs. Reduction of credits may not be requested for more credits than were applied to the previous degree. Excess thesis credits beyond those allowed by the previous degree may not be applied to a reduction of credits.

Coursework applied to a reduction must have received a minimum grade of B. Courses graded ‘pass/fail’ or ‘satisfactory/no credit’ may be applied to a reduction of credits provided that is the standard grade mode for the course and that it can be reasonably interpreted as a B or better according to the home institution's grading system. Graduate degrees that follow a non-standard format will be evaluated on a case-by-case basis.

**AP.6.5.3 Transfer of Credit**

Graduate credit earned prior to admission to a certificate, master’s, or doctoral program may be eligible to be transferred into the program and applied to the certificate or degree. Transfer of credit requires the approval of the program director and dean or director of the school, college, or institute. They will determine whether the credit is eligible for transfer and applicable to the specific certificate or degree program. Note that credits accepted for transfer do not compute into any Mason GPA. Limits on the number of credits that can be transferred derive from the degree requirements given below.

Credit is usually considered for transfer at the student's request at the time of initial registration as a degree-seeking student. Students must supply official transcripts. For transcripts from outside the United States, students must supply an official transcript evaluation and an official translation for transcripts not in English if these documents were not supplied in the admission process. Credit transfer requests from students who are admitted provisionally are not considered until they have fulfilled the conditions of their admission and the provisional qualifier has been removed from their records.

To be eligible for transfer credit, the credit must be graduate credit earned at another accredited university, earned at another institution and recommended for graduate credit in the American Council on Education guidebook, or earned at Mason while in a nondegree status. The credit must have been earned within six years prior to first enrollment as an admitted student in the specific certificate or degree program, and a minimum grade of B (3.00) must have been earned. The course must be applicable toward a degree at the institution offering the course. Extension and in-service courses that are not intended by the institution offering the courses to be applied to a degree program are not eligible for transfer credit to Mason. The credits cannot have been previously applied toward a degree at another institution or Mason; however, up to 3 credits previously applied to a degree program at another institution may be transferred into a certificate program at Mason.

**AP.6.5.4 Permission to Study Elsewhere**

Students enrolled in a degree program may take graduate courses at another accredited institution and apply these credits to a master’s or doctoral degree with prior approval. Approval must be secured in writing from the director of the graduate program and the dean or director of the school, college, or institute, and submitted to Mason’s Office of the University Registrar before registering at the other institution. Upon completion of the course, students must arrange for an official transcript to be submitted to Mason so that the credits may be transferred into their Mason degree program. These credits are subject to all the other conditions given above for transfer credit, including limits on numbers of credits that can be taken elsewhere. Note that credits accepted for transfer do not compute into any Mason GPA. Permission to take a course elsewhere does not exempt a graduate student from satisfying the degree requirements given below.

Enrolled, degree-seeking graduate students may be eligible to take a limited number of courses through the Consortium of Universities of the Washington Metropolitan Area. See AP.1.4.2 Permission to Study Elsewhere (p. 79) for more information. Credits earned through the consortium are considered resident, not transfer, credits, and are therefore not subject to transfer of credit conditions or limitations.

**AP.6.6 Graduate Academic Standing**

**AP.6.6.1 Academic Warning**

A notation of academic warning is entered on the transcript of a graduate student who receives a grade of C or F in a graduate course or while a grade of IN is in effect.

**AP.6.6.2 Academic Termination**

A degree-seeking graduate student will be terminated for the reasons listed below unless an academic policy exception is obtained. Non-degree graduate students will be terminated for unsatisfactory performance as described below. These are minimum standards of performance; some programs have higher standards. Note that the university reserves the right to terminate any student based on cancellation (by the testing administrator) of any test score required for admission. Once a student has met the criteria for termination, they may only avoid termination by obtaining an academic policy exception, as described below, through the process provided for by their academic unit in conjunction with the Associate Provost for Graduate Education.

**Students May Be Terminated for Any One of the Following Reasons**

**Fully-Admitted Graduate Students Enrolled in a Degree and/or Certificate Program**

- Fail to make satisfactory progress toward degree as determined by the academic unit and/or Associate Provost for Graduate Education.
• Accumulate grades of F in two graduate courses or 9 credits of unsatisfactory grades in graduate courses.

Provisionally-Admitted Degree Seeking Graduate Students

• Fail to meet provisions of admission within time limits.
• Fail to make satisfactory progress toward the degree, as determined by the academic unit and/or Associate Provost for Graduate Education.
• Accumulate 12 credits of unsatisfactory grades in undergraduate courses.
• Accumulate grades of F in two graduate courses or 9 credits of unsatisfactory grades in graduate courses.

Note: Undergraduate and graduate course grades are not combined to reach the termination threshold; they are considered separately.

Non-Degree Graduate Students

• Accumulate 12 credits of unsatisfactory grades in undergraduate courses.
• Accumulate grades of F in two graduate courses, or 9 credits of unsatisfactory grades in graduate courses.

Note: Undergraduate and graduate course grades are not combined to reach the termination threshold; they are considered separately.

The student is responsible for knowing both the termination criteria (including, but not limited to, program time limits and grade requirements) and the process for initiating an academic policy exception request to the dean of their academic unit. In cases of program time limits and grade requirements, the University Registrar will notify the student within two weeks of termination eligibility that the student’s performance has reached the threshold for termination, provide notice of the start of the request for exception period, and direct the student to their respective academic unit for information on submitting an academic policy exception request. For all other termination criteria, the academic unit will notify the student within two weeks of termination eligibility that the student's performance has reached the threshold for termination, provide notice of the start of the request for exception period, and direct the student to information on submitting an academic policy exception request.

Each academic unit, and the Associate Provost for Graduate Education as applicable, shall publish on their respective university web page the process for initiating an academic policy exception request and the criteria used in their respective reviews. Each academic unit and the Associate Provost for Graduate Education shall also publish on their respective university web pages the process for filing an appeal of an academic policy exception denial. The Associate Provost for Graduate Education is responsible for publishing the criteria used by that office and by the Graduate Academic Appeals Committee during their respective appeal reviews. During the review of any request or appeal, the student may register and enroll in classes.

Once an academic policy exception request or appeal period has expired, or when the student’s exception request has been denied by the academic unit, the Associate Provost for Graduate Education, or the Graduate Academic Appeals Committee with no further appeal option, a letter of termination signed on letterhead by the dean or director of the student’s academic unit will be sent to the student by mail and email within one week, with an electronic copy provided to the University Registrar. A notification of academic termination will be affixed to the graduate student’s official record and the student may then be administratively dropped or withdrawn from currently enrolled classes. See AP.1.3 (https://catalog.gmu.edu/policies/academic/registration-attendance/#text) for more information.

Should a student continue:
• in the enrolled degree and/or certificate program or non-degree program, or
• change programs within a single college without going through an admissions process

any grades of F or unsatisfactory grades shall count toward reaching the termination threshold as described above.

AP.6.3 Readmission to Graduate Study at Mason
Former graduate students who have been terminated, dismissed or have resigned from a Mason graduate program are not permitted to take any additional coursework at Mason unless a new graduate program application has been submitted and the applicant has been admitted to graduate study. Time limits for the degree begin with the date of admission to the new program. If the student applies and is readmitted to the same graduate program at Mason from which the student was terminated, dismissed, or resigned, any grades of F or unsatisfactory grades accumulated within six years prior to readmission shall count toward reaching the termination threshold.

Academic units and programs may have additional restrictions concerning re-admission. If so, those restrictions apply. Upon full admission to an alternative graduate program at Mason, any grades of F or unsatisfactory grades accumulated in previous graduate programs at Mason will be excluded and shall not count towards reaching the termination threshold as described in AP.6.2 (p. 92).

AP.6.7 Bachelor’s/Accelerated Master’s Degrees
The university offers a number of Bachelor’s/Accelerated Master’s Programs for academically strong Mason undergraduates with a commitment to research or graduate or professional studies. Applicants receive a waiver of the graduate application fee and admitted students may obtain both a bachelor’s and a master’s degree after satisfactory completion of 144 - 150 credits (number of required credits depends on the graduate program).

AP.6.7.1 Application and Admission
Application to accelerated master’s degree programs should be made once the student has earned between 75 and 100 credits. Individual colleges, schools and programs may set more specific requirements for earned hours prior to application. Admission is competitive and must be approved by the faculty director of the student’s undergraduate program, the faculty director of the intended graduate program, and the relevant graduate dean or designee.

AP.6.7.2 Coursework Requirements
After admission and having earned 90 undergraduate credits, accelerated master’s students complete 3 to 6 credits of graduate coursework in their field of study (with a 3.00 GPA or better in each course), specified by their undergraduate and graduate advisors. These credits will apply to the undergraduate degree and provide the student advanced standing in the related Mason master’s program. All graduate course prerequisites must be completed prior to enrollment. While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate
credits do not apply to the undergraduate degree. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree, including a minimum of 18 applicable graduate credits taken after the bachelor’s degree has been completed and posted to the student’s academic record.

**AP.6.7.3 Timeline Requirements**

Accelerated master’s students must graduate from their undergraduate program in the semester specified on their application to the accelerated degree program. Changes to the timeline for conferral of the undergraduate degree must receive written approval by the graduate program director. Students are also required to enroll in the related master’s program in the fall or spring semester that immediately follows the term of undergraduate degree conferral. Some programs may allow a deferral of no more than one year from time of admittance to graduate status. Students must abide by all timelines outlined in each specific program. Failure to enter the graduate program in accordance with specified timelines will result in forfeiture of graduate advanced standing and/or more restrictive requirements.

**AP.6.7.4 Instructions for International Students**

F-1 and J-1 students must request a change of program level and an I-20/DS-2019 extension at the time they move from the undergraduate to graduate level of study. Funding for the additional time in F-1 or J-1 status also must be documented as required by federal immigration regulations.

**AP.6.8 Requirements for Graduate Certificates**

Candidates must satisfy all applicable university requirements and all requirements established by the graduate certificate program faculty. Individual departmental graduate certificate requirements are listed under their academic departments in this catalog. Note that the following are university minimum requirements; individual programs may have higher standards and/or more restrictive requirements.

- Graduate certificate programs require a minimum of 12 graduate credits.
- Only graduate courses may apply toward the graduate certificate.
- A maximum of 3 graduate credits taken at another institution can be transferred into a graduate certificate program. See AP.6.5 Credit by Exam (p. 91).
- In the case of a certificate offered through consortial arrangement, at least one-third of the credit applied to the certificate must be earned through direct instruction at Mason.
- Candidates must have a minimum GPA of 3.00 in coursework presented on the certificate application, which may include no more than 3 credits of C. (Grades of C+, C-, and D do not apply to graduate courses.) The GPA calculation excludes transfer credits.
- Certificate students are subject to graduate termination policies.

**AP.6.8.1 Students in Master’s or Doctoral Programs also Pursuing Graduate Certificates**

**Admission**

Students must be admitted to the master’s or doctoral program in degree status. They must also be admitted to the graduate certificate program at least one semester before completion of certificate requirements.

**Coursework in Degree Status**

More than half of the credits required for the certificate program must be taken in degree status for the master’s or doctoral degree.

**Time Limits**

The time limits coincide with the six-year time limit for master’s degrees or the six-year time limit for advancement to candidacy in a doctoral degree. Master’s and doctoral time limit rules apply.

**Multiple Programs**

Students may be enrolled in one graduate certificate program while they pursue a master’s or doctoral degree. Students who have completed a graduate certificate may subsequently be approved to apply many of the credit hours for that one certificate to a graduate degree, as long as they were taken within six years of official enrollment into the degree program. There is no limitation on the sharing of credits between the graduate degree and one certificate.

**AP.6.8.2 Students in Graduate Certificate Programs Only**

**Admission**

Students pursuing graduate certificates must be admitted to Mason in degree-seeking status. Failure to make satisfactory progress (as determined by the academic unit) toward certificate requirements may result in termination from the certificate program.

**Coursework After Admission**

More than half of the credits required for the graduate certificate program must be taken after admission to that program.

**Time Limits**

The time limit for completion is six (6) years from the date of admission to the graduate certificate program. International students attending in F-1 or J-1 status have more restrictive time limits; contact the Office of International Programs and Services for information. The time limit is not extended because of an absence and subsequent re-enrollment into the graduate certificate program. Failure to meet the time limit or to secure an extension request shall result in termination from the program. This policy does not supersede a student’s university-approved disability services accommodations plan.

**Multiple Programs**

Students not admitted to any graduate degree program (master’s or doctoral) may be admitted to two graduate certificate programs at the same time. The graduation application for each graduate certificate must include a minimum of 12 credits that apply only to that certificate and not to another. (Credits from only one certificate may be subsequently applied to a future degree program, subject to program approval and time limit.)

**AP.6.8.3 Financial Aid for Students in Certificate Programs Only**

Not all certificate programs are eligible for Federal financial aid. A list of the eligible graduate certificates can be found in Financial Aid (p. 125).

**AP.6.9 Requirements for Master’s Degrees**

Candidates must satisfy all applicable university degree requirements and all requirements established by the master’s program faculty. Individual departmental degree requirements are listed under the respective master’s programs in this catalog. Programs may impose more stringent requirements.

- **Admission.** Candidates must have been officially admitted into degree status.
- **Credit Hours.** Candidates must earn a minimum of 30 graduate credits.
- **Credit Level.** Only graduate courses may apply toward the degree.
- **Institutional Credit.** The majority of the credits applied to the degree must be earned at Mason or, in the case of programs offered through joint, cooperative, or consortium arrangements, at the participating
institutions. At least one-third of the credits applied to the master's degree must be earned through direct instruction at Mason.

• Residency. A minimum of 18 credits must be taken in degree status, after admission to the degree program.

• Thesis/Project Limits. A maximum of 6 credits of master's thesis research (799) or master's project may be applied to the degree.

• Quality. Candidates must have a minimum GPA of 3.00 in coursework presented on the degree application, which may include no more than 6 credits of C. (Grades of C+, C, or D do not apply to graduate courses. The GPA calculation excludes all transfer courses and Mason nondegree studies credits not formally approved for the degree.)

AP.6.9.1 Thesis Options
Requirements regarding a thesis vary with the degree program. A number of master's programs offer both thesis and nonthesis options. The same quality of work is expected of students regardless of their chosen option. For more information, consult the section on degree requirements under each degree program.

AP.6.9.2 Time Limit
Master's degree students have six (6) years from the time of first enrollment as a degree-seeking student to complete their degrees. Individual master's programs may have stricter time limits, which are published in this catalog. International students attending in F-1 or J-1 status also have more restrictive time limits; contact the Office of International Programs and Services for information. Students who are given permission to re-enroll following an absence from Mason may not count the six-year time limit as beginning on the date of re-enrollment. Students who will not meet published time limits because of compelling circumstances beyond their control may petition for an extension. Failure to meet the time limits or to secure approval of an extension request shall result in termination from the program. See detailed information (http://registrar.gmu.edu/forms/timelimit) regarding how to determine the initial deadline. This policy does not supersede a student's university-approved disability services accommodations plan.

AP.6.9.3 Master's Thesis
When a thesis proposal has been approved by the appropriate department, the department chair sends the collegiate dean or director a copy of the thesis proposal, including the approval signatures of the master's thesis committee members. Students may enroll in thesis research (799) at the beginning of the next semester. Students must register for a minimum of three credit hours in their first semester of 799. After that semester, students must enroll for one credit of 799 per semester until the thesis is complete and has been successfully submitted to the library. Such students enrolled for one credit of 799 may be considered in status (either full-time or half-time), if the following requirement is met: the student, advisor and department chair must certify each semester that the student is working full-time or half-time on the thesis. See AP.6.2 (p. 91) Full-time and Half-time Status Classification for more information. Please note: Master's students must maintain continuous enrollment in 799, excluding summers, each semester until the thesis is complete and has been successfully submitted to the library. Students who are completing their thesis in the summer must be registered for at least 1 credit of 799 in the summer. Graduation candidates who miss the library deadline for thesis submission but do submit successfully before the next semester begins do not have to register for 799 in the next semester. Such students must apply for graduation in order to have their degree conferred. Students registered in 799 are graded S/NC, and previous IP grades are updated by the Office of the University Registrar to reflect the final S or NC grade.

Students selecting the thesis option should obtain a copy of Mason's Thesis, Dissertation, or Project Guide. Students may register in 799 only after their thesis proposal has been submitted and approved as prescribed in the guide. Any student not in attendance at Mason who is preparing a thesis under the active supervision of a member of the faculty or wishes to take an exam must maintain continuous registration in 799 for at least 1 credit per semester.

The master's thesis committee is composed of at least three members of the graduate faculty, at least two of whom must be from the student's department or program. Faculty who are not members of the graduate faculty or other appropriate persons not affiliated with the university may serve as additional members. Committee members are appointed by the chair or director of the academic unit or program, or designee, after consultation with the student's adviser and the student. Only a member of the graduate faculty with a full-time appointment at George Mason University may serve as the thesis chair.

The thesis committee chair is primarily responsible for directing the candidate's research and writing activities. The student is responsible for keeping all committee members informed of the scope, plan, and progress of the research as well as the writing of the thesis.

AP.6.9.4 Thesis Submission
On or before the thesis submission deadline for any semester, each student will submit a CD with a complete electronic copy of his/her thesis (signed Signature Sheet through Curriculum Vitae) as a PDF to University Dissertation & Thesis Services (UDTS). The PDF will be uploaded into the Mason Archival Repository Service (MARS). At the time of final submission, the student will also turn in completed versions of the Transmittal Sheet, ETD Submission Form, and MARS Agreement.

For degree conferral in a particular semester, the above materials must be submitted to the library by 5:00 p.m. on the Friday before the last day of class in that semester. (For specific deadlines and more information, please see The Office of the University Registrar (http://registrar.gmu.edu).)

Under circumstances determined by the student's school, college, and/or program, a student may petition to embargo all or part of his/her thesis, preventing online access to it for a period of time (2 years, 5 years, or 10 years). A student may choose to embargo his/her work in order to avoid potential contract disputes with future publishers or to protect intellectual property. Not all schools, colleges, and/or programs will permit a student to embargo his/her work, and the both the student’s thesis chair and the graduate associate dean of the school/college must approve the student’s petition. Upon approval of an embargo, the thesis chair, the graduate associate dean and the student must sign the embargo approval form. The student must turn in this completed, signed embargo form to UDTS at the time of submission of his/her thesis and all other materials. The UDTS Coordinator will confirm with both the chair/director and the associate dean that they have signed the submitted form. A hard copy of the confirmation will be retained by the UDTS Coordinator. At the time the work is uploaded to MARS and/or ProQuest, the author will receive an email notification, with an official PDF attached, stating that the embargo will begin and end on a certain date, and advising the author that it is his/her responsibility to keep track of the embargo lift date. The author will further be advised that it is his/her responsibility to notify the UDTS Coordinator via email (udts@gmu.edu) that he/she wants to lift the embargo prior to the termination date, or that
he/she wants to renew the embargo (or institute a new limit). In the form, the author will also be advised that he/she should retain this form and place it in the care of his/her attorney, next of kin, or other appropriate designee. In case of death, incapacity, or other similar circumstance, it is up to the author’s estate, power of attorney, or other appropriate designee to ensure that the embargo continues.

If the student wishes to extend the embargo past the thesis’s release date, the student is required to secure the approval of the graduate associate dean of the student’s college/school at the time of the extension request. Students can request a renewal period of 2 years, 5 years, or 10 years. If approved, the student must notify UDTS via email (udts@gmu.edu) of his/her intention to extend the embargo. The UDTS Coordinator will confirm with the associate dean that the embargo extension has been approved, and will retain copies of both the student’s request and the associate dean’s confirmation that the embargo can be extended.

Theses embargoed for any period will be accessible electronically on-campus in Special Collections UNLESS the student/author can provide evidence that the document should NOT be reviewed for a certain period. Permission to restrict access on-campus for such period or fully may be granted by the Associate Provost for Graduate Education. Only under extreme circumstances will a student’s work be considered by the Associate Provost for Graduate Education for such an embargo. A student must have proof that publication of his/her work poses a danger to themselves, national security, or similar scenario.

Once a student has submitted the final (i.e. defended, formatted, and signed) version of his/her project, thesis, or dissertation to University Dissertation & Thesis Services (UDTS), subsequent edits WILL NOT BE ALLOWED EXCEPT under the following circumstances:

1. A formatting error has been introduced into the PDF document when converting from another document type that affects the meaning of the dissertation. For example: in the process of formatting the document into a PDF, all of the ampersands (&) have disappeared and the error is not discovered until after final submission to UDTS. Re-submission would not be allowed to revise margins, fonts, or other non-substantive items.

2. Incidence of fraud or plagiarism. The relevant college/school must conduct a review of the thesis or dissertation and determine an appropriate course of action in accordance with the university catalog and approved by the Dean. If the approved course of action includes allowing the student to resubmit a corrected version of a thesis or dissertation, the UDTS Coordinator must be informed in writing by an appropriate college/school or LAU official.

UDTS will not allow corrections of theses and dissertations for the following:

- Rewording the Dedication, Acknowledgments, Abstract, or Biography.
- Correction of citations or quotations.
- Addition of new text, or deletion of existing text, in the body.
- Correction of misspellings or grammar issues.
- Replacing, adding, or deleting Tables, Figures, or Equations.
- Correction of any other minor errors or omissions.

AP.6.9.5 Doctoral Students Also Pursuing a First Master’s Degree

Requirements for master’s degrees apply with the following exceptions. Residency derives from the doctoral degree requirements. Time limit may derive from the doctoral requirements, although programs may reject coursework that is not sufficiently current. Students must be officially admitted to degree status in the master’s program a full semester before the one in which they will complete master’s degree requirements, i.e. admitted in fall for graduation the following spring.

AP.6.9.6 Individualized Dual Master’s Degree Programs

George Mason students have the option to pursue two master’s degrees simultaneously. For purposes of administration, if a different rate of tuition is assessed for each program, the student will be assessed at the higher rate. The program with the higher rate will be considered the primary program. The six year time limit for completion of dual master’s programs derives from the admission date of the initial program.

Students in dual master’s degree programs are not eligible for reduction of credit based on a previously earned relevant post-baccalaureate degree earned prior to admission. Any Reduction of Credits that was granted upon admission to the initial program will be removed from the student’s record upon matriculation into the second program.

Students are not eligible to pursue two master’s degrees until they have completed one semester in their initial master’s program. Interested students should know:

- A full admissions application must be submitted for both programs.
- Students must apply and be accepted to the second master’s degree within one year of matriculation in the initial program.
- A restricted number of credits may be shared across dual degree programs, according to University Policy 3007 (http://universitypolicy.gmu.edu/policies/dual-degree-program-arrangements).
- An Individualized Dual Master’s Degree Program of Study form (http://registrar.gmu.edu/wp-content/uploads/DMPS.pdf), approved by directors of both programs, must be submitted to the Office of the University Registrar (http://registrar.gmu.edu) upon matriculation in the second program. This will determine the maximum number of credits and specific courses that may be shared across programs.
- The Program of Study must include a written statement explaining the intellectual or pedagogical purpose behind the degree program, and the academic symmetries that exist between the underlying fields of study.

AP.6.10 Requirements for Doctoral Degrees

Candidates must satisfy all applicable university degree requirements and all requirements established by the doctoral program faculty. Departmental degree requirements are listed under the respective doctoral programs in this catalog. Programs may impose more stringent requirements.

- Admission. Students must have been fully admitted into degree status.
- Credit Level. Only graduate courses may apply toward the degree.
- Credit Hours. Candidates must earn a minimum of 72 graduate credits, which may be reduced on the basis of a completed master’s degree or other suitable, approved transfer work. (See AP.6.5 Credit by Exam, Reduction or Transfer (p. 91))
- Unique Credit. A minimum of 42 credits must apply only to the doctoral degree.
- Institutional Credit. More than half of the required credits (minimum 72) for the doctoral degree must be earned at Mason or in the case of programs offered through joint, cooperative, or consortium arrangements, at the participating institutions.
• **Residency.** More than half of the required credits (minimum 72) must be taken in doctoral degree status, after admission to the degree program.

• **Candidacy.** Candidates must pass a written or oral doctoral candidacy (qualifying) exam, or both.

• **Dissertation.** Candidates must complete a minimum of 12 credits of doctoral proposal (998) and doctoral dissertation research (999), including at least three credits of 999. A maximum of 24 credits of 998 and 999 may be applied to the degree.

• **Defense.** Candidates must pass a final public defense of the doctoral dissertation.

• **Quality.** Candidates must have a minimum GPA of 3.00 in coursework presented on the degree application, which may include no more than 6 credits of C. (Grades of C+, C, or D do not apply to graduate courses. The GPA calculation excludes all transfer courses and Mason extended studies or nondegree credits not formally approved for the degree.)

### AP.6.10.1 Time Limit

For both full-time and part-time students enrolled in doctoral programs, whether entry is post-baccalaureate or post-master’s, the total time to degree will not exceed nine (9) calendar years from the time of first enrollment as a doctoral student. Doctoral students are expected to progress steadily toward their degree and to advance to candidacy within no more than six (6) years, although colleges may set a shorter time limit.

Students who do not meet published time limits because of compelling circumstances beyond their control may petition their dean for a single extension of one calendar year at any point during their program. If such an extension is granted, the total time limit for completion of the degree will not exceed ten (10) years. Reenrollment following an absence from Mason does not change the student’s time limit, which is based on the date of initial admission. Failure to meet the time limits or to secure approval of an extension request shall result in termination from the program. Faculty and students share in the responsibility to progress toward completion of degree requirements, and faculty must be actively involved in helping students conform to the nine (9) year time limit. This policy does not supersede a student’s university-approved disability services accommodations plan.

Non-immigrant students in F-1 or J-1 status are further limited by the regulations governing their stay in the United States. The University issues visa documents (forms I-20 and DS-2019) that indicate the estimated length of the student’s academic program. Students who need extensions beyond the initial period of stay must request them through the Office of International Programs and Services (OIPS). Documentation of the compelling circumstances necessitating the extension request is required by federal regulations. For further information, please consult with an advisor in OIPS.

### AP.6.10.2 Doctoral Research Skill Requirements

Some doctoral degree programs require demonstration of proficiency in a research skill, including knowledge of the research literature in a foreign language, computer language, statistical methods, or a research tool specific to the discipline. Research skill requirements are included with the degree requirements for the specific doctoral degree. Where demonstration of research skills is required, certification that this requirement has been met must be completed for advancement to candidacy.

### AP.6.10.3 Program of Study

Usually before the end of the second year of graduate study but no later than consideration for advancement to candidacy, doctoral students must submit a program of study for approval by the dean or director of the college, school, or institute. The program of study must include major courses and supporting courses to be completed, research skills required, subject areas to be covered by the candidacy exam, and a proposed date for the candidacy exam. Program of Study Forms are available from each program’s doctoral coordinator. Any changes in the programs of study must be documented with an amended Program of Study Form.

### AP.6.10.4 Advancement to Candidacy

Advancement to candidacy implies that a doctoral student has demonstrated both a breadth and a depth of knowledge in the field of study and is capable of exploring problems on the boundaries of knowledge, and has identified a research area that is likely to lead to a successful dissertation. The candidacy exam includes a written part and may include an oral part, depending on the particular doctoral program. Doctoral students should consult the degree requirements for each doctoral program to determine whether an oral portion is required, whether it is judged separately or with the written portion, the number of times a failed candidacy exam may be repeated and any associated time limits, and any time limits for attempting the candidacy exam.

Before doctoral students may be advanced to candidacy by the unit dean or director, they must have completed all coursework as indicated on the approved program of study, been certified in all doctoral research skills required, passed the candidacy exam, and been recommended by the doctoral supervisory committee or program coordinator. Students advanced to candidacy after the add period for a given semester must wait until the following semester to register for 999 Dissertation Research.

### AP.6.10.5 Dissertation Committee

The Dissertation Committee provides guidance and oversight of the student’s dissertation research and writing. In some units this committee may also function as the program committee, facilitating the design and approval of the student’s program of study, conducting required examinations, and regularly assessing the student’s progress and accomplishments.

#### Committee Size and Composition

**Committee Size:** Doctoral candidates must have a Dissertation Committee made up of a Chair and at least two other members (Member #1, Member #2).

**Committee Chairs:** Full-time faculty members at George Mason University may serve as Dissertation Committee Chairs as long as they are members of the Graduate Faculty, they are members of the core faculty for the student’s degree program, and they are relevant to the student’s field of study.

If the Chair of a Dissertation Committee leaves the university or retires during the student’s degree, the program director may request that Graduate Faculty status be granted to allow the continuation of the member’s service as Co-chair.

**Committee Co-chairs:** In some cases it may be appropriate to designate additional faculty as Co-chair. Graduate faculty who are from any George Mason University LAU or who are external to the university may serve as Co-chair. Non-tenure/tenure-track faculty and individuals from outside the university must be approved as members of the graduate faculty for purposes of having Co-chair privileges (see section below, Committee
Service by Personnel other than Tenured or Tenure-Track Faculty at George Mason University. If the Co-chair designee meets all requirements then the Co-chair may count as Member #1 or Member #2.

Committee Members on Dissertation Committees: Each Dissertation Committee must have at least two members in addition to the Chair. The Chair, Member #1, and Member #2 must have graduate faculty status and be relevant to the student’s field of study. In addition, Member #1 must be full-time faculty at George Mason University. Member #2 may be from George Mason University or external to the University.

Additional committee participants may be added. Committee service by other qualified individuals inside or outside the university may be requested by the student’s LAU/program (see section below, Committee Service by Personnel other than Tenure or Tenure-Track Faculty at George Mason University).

Students should refer to the policies and procedures for their degree program for any specific guidelines for graduate Dissertation Committee service within the LAU/program.

Committee Service by Personnel other than Tenured or Tenure-Track Faculty at George Mason University: Personnel with suitable academic training and research experience who are not George Mason University full time, tenured, or tenure track faculty may be recommended for inclusion on a graduate student Dissertation Committee. This category includes personnel from outside George Mason University as well as Research Faculty, Administrative/Professional Faculty, Instructors, Affiliate Faculty, Adjunct Faculty, Retired or Emeritus Faculty, and Term Faculty at George Mason University. Such personnel must have an appropriate terminal degree. Inclusion of personnel with comparable experience in place of a terminal degree is requested by the student’s Dissertation Committee Chair and the Dean/Dean’s designee and approved by the Associate Provost of Graduate Education.

Full-time term or administrative/professional faculty members at George Mason University may serve as Dissertation Committee Chairs as long as they are members of the graduate faculty. Other personnel may be added to the committee as Co-chair, Member #2, or an additional member. Additional members need only be approved by the Graduate Program/LAU. Inclusion of committee members in the other categories is requested by the student’s Dissertation Committee Chair and Graduate Program Director and approved by the Dean/Dean’s designee; all such personnel must be appointed to graduate faculty by the Office of the Provost. If such members are on a temporary appointment there should be assurance that they will be available throughout the student’s degree. They may share dissertation supervision responsibilities, and enjoy voting rights and privileges. A curriculum vitae for the proposed committee member must be included with the request for graduate faculty status and the particular advantages of including this person on the committee should be cited. Once approved for graduate faculty status, a new request is not required for service on additional committees. Faculty, staff, and students are urged to check the online list of approved graduate faculty members.

Individual programs may have more restrictive policies. If so, those restrictions apply.

Refer to the policies and procedures of the degree program for information on how to change membership of previously established dissertation committees.

Committee Structure

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<thead>
<tr>
<th>Membership</th>
<th>Minimum Required Attributes</th>
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<tbody>
<tr>
<td>Chair (required member)</td>
<td>• Full-time Mason Faculty</td>
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<td></td>
<td>• Graduate Faculty</td>
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<tr>
<td></td>
<td>• Member of the program’s core faculty</td>
</tr>
<tr>
<td>Member #1 (required member)</td>
<td>• Full-time Mason Faculty</td>
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<tr>
<td></td>
<td>• Graduate Faculty</td>
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<td></td>
<td>• Faculty in any Mason LAU</td>
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<tr>
<td>Member #2 (required member)</td>
<td>• Graduate Faculty; and,</td>
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<td>• Faculty relevant to student’s field of study; and EITHER:</td>
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<td>• Faculty in any Mason LAU OR</td>
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<td>• External to Mason</td>
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<tr>
<td>Member #3 (if required by program)</td>
<td>• Graduate Faculty; and,</td>
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<td>• Faculty relevant to student’s field of study; and EITHER:</td>
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<td>Co-chair (if present)</td>
<td>• Graduate faculty; and, EITHER</td>
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<td>• Faculty in any Mason LAU OR</td>
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<td>• External to Mason</td>
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<tr>
<td>Additional members (if present)</td>
<td>• Approval by Dissertation Committee Chair; Graduate Program Director</td>
</tr>
</tbody>
</table>

AP.6.10.6 Dissertation Registration (998, 999)

Students working on dissertation research (999) must register for a minimum of 3 credits of 999 per semester (excluding summers) until they have completed the minimum number of credits of 998 and 999 required by the university and their degree program. Then, they must register for 1 credit of 999 until the dissertation is complete and has been successfully submitted to the library. See AP.6.2 Full-time and Half-time Classification (https://catalog.gmu.edu/policies/academic/registration-attendance/#text) for more information. Students registered in 998 or 999 are graded IP until work in 998 or 999, respectively, is complete; at that time they are graded S/NC, and previous IP grades are updated by the Office of the University Registrar to reflect the final S or NC grade.

All registration for doctoral dissertation research (999) is open only to doctoral students who have advanced to candidacy. Once enrolled in 999, students must maintain continuous registration in 999 each semester.
until the dissertation is complete and has been successfully submitted to the library, excluding summers. Students who defend in the summer must be registered for at least 1 credit of 999 in the summer. Individual doctoral programs may require continuous registration beginning with 998. Graduation candidates who miss the library deadline for dissertation submission, but do submit successfully before the next semester begins, do not have to register for 999 in that next semester, but must apply for graduation in order to have their degree conferred.

It is the student’s responsibility to complete registration for dissertation proposal (998) or research (999) prior to the first day of classes for the semester. If this date is missed, students must still enroll in these courses via Add or Late Schedule Adjustment procedures and are subject to Late Registration fees. Failing to register on time in a particular semester does not alter the requirement for continuous registration in 999.

**AP.6.10.7 Doctoral Dissertation**

A dissertation is required for the doctor of philosophy degree and most professional doctoral degrees. The dissertation is a written piece of original thinking that demonstrates doctoral candidates' mastery of subject matter, methodologies, and conceptual foundations in their chosen field of study. This is generally achieved through consideration of a problem on the boundaries of knowledge in the discipline.

The director of the dissertation committee is primarily responsible for directing the doctoral candidate’s research and guiding the preparation of the written dissertation. After the dissertation committee is appointed, the student should begin discussions with the director to define a suitable problem for the dissertation. Before the student may enroll in doctoral dissertation research (999), the dissertation proposal must be approved by the dissertation committee and evidence of approval sent to the unit dean or director for approval. Before that time, the student may enroll in proposal research (998).

Guidelines for the content and general format of doctoral dissertations are in the *Thesis, Dissertation, or Project Guide*. Consult a doctoral coordinator to determine which additional reference manuals are suitable.

**AP.6.10.8 Doctoral Defense**

As soon as all degree requirements have been satisfied, including completion of the doctoral dissertation, the doctoral candidate may request a doctoral defense. Approval for the defense is given by the doctoral dissertation committee, department or program chair, and relevant dean or director of the school, college, or institute. Notice of a defense must be circulated to the university community two weeks before the defense date. The public defense should demonstrate the candidate’s maturity of judgment and intellectual command of the chosen branches of the field of study.

At the close of the final defense, the dissertation committee makes final judgments for approving the dissertation. The doctoral candidate is responsible for making all required changes promptly, submitting the original and required copies, and obtaining signatures. Final approval for the dissertation is given by the doctoral dissertation committee, department or program chair, and the relevant dean or director of the school, college, or institute, all of whom must sign the final copy.

For a dissertation to be approved, all members of the committee must sign. If a committee member refuses to do so, the student or any member of the committee may petition the unit dean or director for a review and ruling. The dean or director may seek the advice of outside reviewers to provide an assessment of the work. The final decision is that of the dean or director, and is not subject to appeal.

**AP.6.10.9 Dissertation Submission and Fees**

On or before the dissertation submission deadline for any semester, each student will submit a CD with a complete electronic copy of his/her dissertation (signed Signature Sheet through Curriculum Vitae) as a PDF to University Dissertation & Thesis Services (UDTS). The PDF will be uploaded into the Mason Archival Repository Service (MARS). At the time of final submission, the student will also turn in completed versions of the Transmittal Sheet, ETD Submission Form, and MARS Agreement.

For degree conferral in a particular semester, the above materials must be submitted to the library by 5:00 p.m. on the Friday before the last day of class in that semester. (For specific deadlines and more information, please see the University Registrar’s website, [http://registrar.gmu.edu](http://registrar.gmu.edu).)

Under circumstances determined by the student’s school, college, and/or program, a student may petition to delay embargo all or part of his/her dissertation, preventing online access to it for a period of time (2 years, 5 years, or 10 years). A student may choose to embargo his/her work in order to avoid potential contract disputes with future publishers or to protect intellectual property. Not all schools, colleges, and/or programs will permit a student to embargo his/her work, and both the student’s dissertation chair and the graduate associate dean of the school/college must approve the student’s petition. Upon approval of an embargo, the dissertation chair, the graduate associate dean, and the student must all sign the embargo approval form. The student must turn in the signed embargo form to UDTS at the time of submission of his/her dissertation and all other materials. The UDTS Coordinator will confirm with both the dissertation chair and the graduate associate dean that they signed the submitted form. A hard copy of the confirmation will be retained by the UDTS Coordinator. At the time the work is uploaded to MARS and/or ProQuest, the author will receive an email notification, with an official PDF attached, stating that the embargo will begin and end on a certain date, and advising the author that it is his/her responsibility to keep track of the embargo lift date. The author will further be advised that it is his/her responsibility to notify the UDTS Coordinator via email (udts@gmu.edu) that he/she wants to lift the embargo prior to the termination date, or that he/she wants to renew the embargo (or institute a new limit). In the form, the author will also be advised that he/she should retain this form and place it in the care of his/her attorney, next of kin, or other appropriate designee. In case of death, incapacity, or other similar circumstance, it is up to the author’s estate, power of attorney, or other appropriate designee to ensure that the embargo continues.

If the student wishes to extend the embargo past the dissertation’s release date, the student is required to secure the approval of the graduate associate dean of the student’s college/school at the time of the extension request. Students can request a renewal period of 2 years, 5 years, or 10 years. If approved, the student must notify UDTS via email (udts@gmu.edu) of his/her intention to extend the embargo. The UDTS Coordinator will confirm with the associate dean that the embargo extension has been approved, and will retain copies of both the student’s request and the associate dean’s confirmation that the embargo can be extended.

Dissertations embargoed for any period will be accessible electronically on-campus in Special Collections UNLESS the student/author can provide evidence that the document should NOT be reviewed for a certain period. Permission to restrict access on-campus for such period or fully may be granted by the Associate Provost for Graduate Education. Only under extreme circumstances will a student’s work be considered by
the Associate Provost for Graduate Education for such an embargo. A student must have proof that publication of his/her work poses a danger to themselves, national security, or similar scenario.

Doctoral students are also required to submit their dissertations to ProQuest through University Microfilms International (UMI). Submission will take place through the UMI Administrator site (www.etadmin.com/gmu (http://www.etadmin.com/gmu)). Traditional submission, in which the dissertation is available only through ProQuest’s subscription service, costs nothing. Open Access submission, in which the dissertation is available through ProQuest’s Open Access site, costs $95. Students can also opt to register their dissertations with the U.S. Copyright Office via the Administrator; doing so costs $44, payable to ProQuest. Students can also choose to purchase their own bound copies through the Administrator. The student is responsible for any aforementioned fees, which can be paid by credit or debit card. At the time of final submission, the UDTS Coordinator will confirm that the student has uploaded his/her dissertation through the Administrator.

Doctoral students also must complete a Survey of Earned Doctorates. This form must also be turned in to the UDTS Coordinator at the time of final submission.

Once a student has submitted the final (i.e. defended, formatted, and signed) version of his/her project, thesis, or dissertation to University Dissertation & Thesis Services (UDTS), subsequent edits WILL NOT BE ALLOWED EXCEPT under the following circumstances:

1. A formatting error has been introduced into the PDF document when converting from another document type that affects the meaning of the dissertation. For example: in the process of formatting the document into a PDF, all of the ampersands (&) have disappeared and the error is not discovered until after final submission to UDTS. Resubmission would not be allowed to revise margins, fonts, or other non-substantive items.
2. Incidence of fraud or plagiarism. The relevant college/school must conduct a review of the thesis or dissertation and determine an appropriate course of action in accordance with the university catalog and approved by the Dean. If the approved course of action includes allowing the student to resubmit a corrected version of a thesis or dissertation, the UDTS Coordinator must be informed in writing by an appropriate college/school or LAU official.

UDTS will not allow corrections of theses and dissertations for the following:

• Reworking the Dedication, Acknowledgments, Abstract, or Biography.
• Correction of citations or quotations.
• Addition of new text, or deletion of existing text, in the body.
• Correction of misspellings or grammar issues.
• Replacing, adding, or deleting Tables, Figures, or Equations.
• Correction of any other minor errors or omissions.

AP.6.10.10 University Dissertation and Thesis Services
University Dissertation and Thesis Services (UDTS) facilitates completion and submission of dissertations, theses, and graduate-level projects. The program assists Mason students in all stages of production. The UDTS website (http://thesis.gmu.edu), provides students with useful tools, including downloadable templates of necessary elements, forms required for the submission process, and links to related web sites. Students completing a thesis or dissertation are required to complete a format review. UDTS is located in Fenwick Library, Special Collections and Archives, Wing 2C. For more information, contact the university dissertation and thesis coordinator at 703-993-2222.

AP.6.11 Graduate Council
The Graduate Council is an advisory and legislative board on matters of graduate education whose purpose is to promote excellence in all graduate programs. The Council advises the Provost regarding academic policies governing graduate education; approval of new and revised graduate courses, programs and degrees; review and assessment of graduate programs; planning and attainment of graduate education strategic goals; and policies and resources for graduate student support. The Office of the Provost administers university graduate policies for the Graduate Council.

AP.6.12 Graduate Faculty
The graduate faculty consists of all George Mason University tenured and tenure-track faculty. Other Mason faculty members, as well as individuals from outside the university, may be appointed to the graduate faculty by the Provost for a specified duration of time.

AP.7 Research Policies
Research Development, Integrity and Assurance Office
Website: oria.gmu.edu

AP.7 Research Policies
AP.7.1 Human Subjects Research
All research activities involving human subjects or human subjects data conducted by faculty, staff, or students must be submitted to the Research Development, Integrity and Assurance (http://rdia.gmu.edu) office for review and approval. All application forms must be submitted through the Institutional Review Board (http://irbnet.org). All covered research activities must be approved by the Institutional Review Board prior to initiation of the activity. Separate approval by the Confidential Student Contact Information (http://provost.gmu.edu/requesting-confidential-student-contact-information) (CSCI) committee is required if contact information for Mason students is needed to conduct the research. All student research must be supervised by a faculty member. The faculty member will serve as the principal investigator for the research and will assume responsibility for the legal and ethical conduct of the work.

AP.7.2 Animal Use in Research
All work with live vertebrate animals, whether for research, teaching, or testing, must be approved by the Institutional Animal Care and Use Committee (IACUC) prior to initiation of the work. All use of animals at Mason must be carried out under the supervision of a faculty member who is qualified and experienced in the work being conducted and assumes responsibility for legal and ethical conduct. Further information and submission forms can be found at the Research Development, Integrity and Assurance (http://rdia.gmu.edu) office.

AP.7.3 Misconduct in Research and Scholarship
George Mason University is committed to the highest standards of ethical research and scholarship. All faculty, staff, and students are responsible for conducting research and scholarship in an ethical manner. The university has developed a comprehensive policy and procedures to address allegations of misconduct: University Policy 4007
Student Rights and Responsibilities

Policies and Procedures Affecting All Students

Knowledge of University Policies

Each student is responsible for knowing Mason’s rules, regulations, requirements, administrative policies and Academic Policies. This catalog is the normal repository of academic policy statements, but corrections, changes, or interpretations can be promulgated by other means, including electronic publication.

When the university or one of its academic units changes course requirements, grading procedures, or criteria for acceptance into particular programs, academic standing, or graduation, the changes apply to all students enrolled at the time of implementation of the change and thereafter.

Students have certain choices regarding the set of degree requirements under which they graduate, as detailed in the Catalog Requirements for Degrees in AF4 Degree Application, Conferral and Graduation (p. 86). PDFs of all previous catalogs may be found online (http://registrar.gmu.edu/catalog-archives). Additionally, the Special Collections and Archives section of the Fenwick Library has copies of all previous catalogs. They may not be checked out, but may be photocopied. Any student in doubt about an academic matter should consult a faculty advisor or dean.

Students are subject to the university’s stated policies regarding patents and copyrights. These policies are available online (http://osp.gmu.edu).

Catalog Requirements for Degrees

Catalog year refers to the setting of course and non-course requirements within academic programs as stated in the school and college section of a specific catalog. However, catalog year does not set academic policies other than program requirements in place. Not all programs and degree components are available in all catalogs. For any one degree, all requirements must be met as stated in a single catalog. The only exception is that Bachelor’s degree students may select a minor from another catalog year for which they are eligible, as noted below.

Bachelor’s degree candidates may choose to graduate under the terms of any catalog in effect during their enrollment in degree status. Students who have been inactive for two or more years or who have attended another institution without prior approval from their academic dean or director must graduate under a catalog in effect at or after their re-admission and during their enrollment in degree status.

Master’s and doctoral degree candidates who have been continuously enrolled may choose to graduate under the terms of any catalog in effect during their enrollment in degree status. Students who have been inactive more than one year, however, may be required by their program to graduate under a catalog in effect after they have been granted permission to re-enroll. In no case may a student choose the requirements of a future catalog year that take effect after the student’s degree is anticipated.

Mason ID Card

Fairfax Campus: Student Union I, 1203
Phone: 703-993-1004

Science and Technology Campus: Colgan Hall, 202
Phone: 703-993-9779

**Arlington Campus:** Founders Hall, 220
Phone: 703-993-9153

**Loudoun Campus:** 21335 Signal Hill Plaza, Suite 130
Phone: 703-993-4350

**Distance Learners:** please contact the Mason Card Office at masonid@gmu.edu to make arrangements

Web: masonid.gmu.edu/mason-id (http://masonid.gmu.edu/mason-id)
Email: masonid@gmu.edu

After registering, each student should obtain a Mason ID card. It must be presented to use library services and is required for admission to university events and when using facilities after normal operating hours. It is not transferable and is valid as long as the student has active status.

### Official Communication with Students

Web: masonlive.gmu.edu (http://masonlive.gmu.edu)

Mason uses electronic mail to provide official information to students. Examples include notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account and are required to activate that account and check it regularly. Students are also expected to maintain an active and accurate mailing address in order to receive communications sent through the United States Postal Service.

### Preferred Name Policy

Web: University Policy 1143 (http://universitypolicy.gmu.edu/policies/preferred-name-policy)

A student may designate and use a Preferred Name for University purposes, except when use of a legal name is required by University or by law.

A student may designate a Preferred Name in University information systems only when such systems allow for such designation.

The University will ordinarily use a student’s Preferred Name in university communications and reporting except when use of a legal name is required by the University or by law. By way of example but not limitation, Preferred Names will be reflected on class rosters, in Blackboard, in Patriot Web (including Degree Works), and in directory listings including email address.

A student’s legal name shall be used for billing, verification of enrollment, payroll, official transcripts, communication with external authorities, or as otherwise required by the University or by law. A student’s identification card must display only the student’s legal name. The University may identify students by both legal name and Preferred name at any time.

A student may not use a Preferred Name for any kind of misrepresentation. A student may not use profanity in a Preferred Name.

### Change of Status, Address

Each student is required to provide Mason with current contact and identifying information, including permanent and local addresses, telephone numbers, and legal name. Each student must also maintain the university e-mail account assigned at the time of admission. Students are responsible for official communications directed to Mason e-mail accounts. For more information, check the website (http://masonlive.gmu.edu).

Addresses should be updated over the Internet using Patriot Web. Name and Social Security number changes require official documentation and must be processed in person at the Office of the University Registrar or with the original copy of a notarized request.

### Appeals of Academic Procedures

Students have the right to appeal decisions regarding requests for academic actions. The appeals process begins in the academic unit. Each college, school, and institute at Mason has a written statement of that unit’s appeal process on file in the dean or director’s office. Students who feel the appeals process was conducted unfairly by a college or school may appeal to the Provost’s Office. All appeals must be in writing, and they must demonstrate that the student has exhausted all options within the academic unit. Undergraduate students initiate appeals of unit decisions with the Associate Provost for Undergraduate Education. Graduate students initiate appeals of unit decisions with the Associate Provost for Graduate Education. The Provost’s Office does not consider grade appeals or appeals of Honor Committee decisions.

### Undergraduate Appeals

The Provost’s Office may refer cases to the University Academic Appeals Committee. The committee consists of five faculty members, including at least one member of the Faculty Senate and the provost (or designee), who serves ex officio, in a nonvoting capacity. The committee hears only those cases where procedural irregularities or a questionable application of university policies is demonstrable, or when the provost or the committee deems the case relevant to the application of university-wide policies. The burden of proof rests with the student, who must provide clear and convincing documentation to support the contention that the decision was unfair based on the criteria stated above. The committee’s decision is final. The University Academic Appeals Committee is not charged to hear grade appeals or appeals of Honor Committee decisions.

### Graduate Appeals

Students who believe they were not afforded due process by the Associate Provost for Graduate Education may appeal to the Graduate Academic Appeals Committee. The committee is a subcommittee of Graduate Council and consists of five members of the graduate faculty. The committee hears only those cases that it judges demonstrate procedural irregularities or a questionable application of university policies, or when the provost or the committee deems the case relevant to the application of university-wide policies. The burden of proof rests with the student, who must provide clear and convincing documentation to support the contention that the decision was unfair based on the criteria stated above. The committee’s decision is final. The Graduate Academic Appeals Committee is not charged to hear grade appeals or appeals of Honor Committee decisions. Specific appeal procedures can be found on the Office of the Provost and Executive Vice President’s website under Graduate Education.

The Provost’s Office is responsible for maintaining appeals records, determining whether students have just cause, and ensuring that complete documentation is available for all committee members. The committee communicates its decision to the student, the relevant unit, and the provost.
Student Requests for Academic Actions

All requests for academic actions, such as special permissions or exceptions to published academic regulations, must be submitted to the head of the unit in which the student's program is housed, for example, the department chair, institute director, or school or college dean. Forms and instructions on how to initiate an academic action are available in the academic unit and on the unit's web site. For students who have not yet declared a major, the academic actions process is executed in the Office of Student Academic Affairs, Advising & Retention, SUB I, Room 3500. Students will be informed of the average wait time for decisions on academic actions undertaken within their units. Those who need assistance with the academic actions process may consult their academic advisor, or they may be directed to the university ombudsman.

Student Conflict Resolution and Support

SCRS Coordinator: Thomas Carter II, MA
Room 2410 (In the Office of Diversity, Inclusion and Multicultural Education suite)
Student Union Building I
Phone: (703) 933-3306
Email: tcarte2@gmu.edu

Student Conflict Resolution and Support (SCRS) is a resource to help all GMU students navigate the University. The Student Conflict Resolution and Support Coordinator can listen to university-related concerns raised by undergraduate and graduate students in confidence and off-the-record, and help them identify appropriate resources to address their concerns and understand their options in any University-related situation. SCRS operates independently of all formal processes at the university. The SCRS Coordinator has no authority to make exceptions or to grant requests, but can help expedite informal resolution to students' concerns. When appropriate, the SCRS Coordinator may recommend changes in processes and policies at the university.

Meetings with the SCRS Coordinator are confidential, except when there is imminent risk of serious physical harm to anyone. SCRS does not serve as an office of notice or record for the University. If a student wishes to put the University on notice about anything, the SCRS Coordinator can help identify the appropriate channel. SCRS offers a safe place to discuss and explore options, so students can better understand the University and make informed decisions about their concerns. SCRS also offers conflict coaching, facilitated dialogues, restorative justice circles, and mediation. SCRS does not replace or substitute any formal processes made available by the University. Our services and procedures are designed to be student-centered and accessible to all members of our community.

Academic Assessment

The regular evaluation of student learning, perceptions, and achievements is fundamental to the continuous improvement of Mason's academic programs. All academic programs at Mason, including Mason Core, have student learning outcomes that are assessed periodically. Student work in various courses may be used for such assessments. Student anonymity is assured and grades will not be affected. Student participation is an essential component of the improvement process, and students may be asked to engage in a variety of assessment activities including surveys and focus groups.

Students may contact the Office of Institutional Research and Effectiveness (OIRE) at oira@gmu.edu with questions or concerns about assessment activities at Mason. Additional information can be found on the OIRE website (https://ira.gmu.edu).

Student Work, Intellectual Property

University Policies 4002 (https://universitypolicy.gmu.edu/policies/copyright-in-university-works) and 4003 (http://universitypolicy.gmu.edu/policies/patenting-university-inventions) control ownership of copyrightable works and patentable inventions made at Mason. Generally, Mason does not assert ownership of copyrightable works and patentable inventions made by students (who are not also Mason employees) to fulfill the requirements of a particular course. Mason generally owns copyrightable works and patentable inventions made by students who are not employees if they are made in the course of sponsored research or with substantial use of significant university resources. If a student (undergraduate or graduate) is also an employee (such as a research or teaching assistant), Mason generally owns copyrightable works and patentable inventions made as part of that student's employment responsibilities. Students with questions are encouraged to consult the policies and to contact the Office of Technology Transfer, ott@gmu.edu or 703.993.8933.

Conduct within the University Community

Office of Student Conduct
Student Union I, Room 4100
Phone: 703-993-6209
Fax: 703-993-2893
Web: studentconduct.gmu.edu (http://studentconduct.gmu.edu)

Students enrolling in the university assume an obligation to conduct themselves in a manner compatible with the university's function as an educational institution. The Code of Virginia (Section 23-9.2:3) confers on the university the responsibility for maintaining order within the university and the right to adjudicate referrals where students are alleged to have violated the Code of Student Conduct.

Students may learn more about the Code of Student Conduct by accessing it here (https://studentconduct.gmu.edu/university-policies/code-of-student-conduct).

The Office of Student Conduct holds responsibility for addressing the conduct of Mason students and their guests. Questions regarding student conduct should be directed to the Office of Student Conduct, SUB I, Room 4100, 703-993-6209; or their website (http://studentconduct.gmu.edu).

Privacy of Student Records

Office of the University Registrar
Student Union I, Room 2101
Phone: 703-993-2441
Email: registrar@gmu.edu
Web: registrar.gmu.edu/ferpa (http://registrar.gmu.edu/ferpa)

Each year, Mason informs students of the Family Educational Rights and Privacy Act (FERPA) of 1974. The university intends to comply fully with this act, which protects the privacy of education records, establishes the right of students to inspect and review their education records, and provides guidelines for amending inaccurate or misleading data through informal and formal hearings. Students also have the right to file complaints with the Family Policy Compliance Office (U.S. Department of Education) concerning alleged failures by Mason to comply with the act.
The Notification of Rights under FERPA and the Public Notice Designating Directory Information detail students’ rights and the procedures implemented by the university to comply with FERPA.

FERPA is a federal law that affords students certain rights with respect to their education records. Specifically, it affords students the right to:

1. inspect and review their education record;
2. request the amendment of inaccurate or misleading records;
3. consent to disclosure of personally identifiable information contained in their education record; and
4. file a complaint with the Family Policy Compliance Office of the U.S. Department of Education concerning alleged failures of the university to comply with the act.

George Mason University strives to fully comply with this law by protecting the privacy of student records and judiciously evaluating requests for release of information from those records. FERPA authorizes the release of "directory information" without the student’s prior consent under certain conditions, which are set forth in the act. George Mason University has defined its "directory information" in accordance with the law. Please visit the Office of the University Registrar website (http://registrar.gmu.edu) for additional information about student privacy and FERPA.

Public Notice Designating Directory Information
Directory Information:

Directory Information may be disclosed by the university without the student’s prior consent under the conditions set forth in the Family Educational Rights and Privacy Act of 1974 (FERPA). Directory information is information that Mason may disclose, but is not required to do so.

University Policy 1122: FERPA Compliance defines directory information at Mason:

- Student Name
- *Student ID (G Number)
- *Date of Birth
- Major Field of Study
- Dates of Attendance
- Enrollment Status
- Previous Institutions
- Class Level
- Degrees and Awards Received
- Photographs
- Participation in Officially Recognized Sports and Activities
- Weight and Height of Athletes

*Limited Directory Information: Student ID number and Date of Birth are considered to be limited directory information, which may be used for verification purposes only, and not released as directory information.

As of July 1, 2018, the Code of Virginia Section 23.1-405(C) prohibits George Mason University from disclosing a student’s email, address or telephone number under the exception in the Family Educational Rights and Privacy Act (FERPA) for directory information or the Virginia Freedom of Information Act (FOIA) unless the student has affirmatively consented in writing to the disclosure.

Beginning on July 1, 2019, HB2449 provides an amendment to 23.1-405(C). This amendment allows for the disclosure of a student’s email, address or telephone number to other students enrolled in the institution for educational purposes or institution business and the student has not opted out of such disclosure.

George Mason does not disclose social security numbers, grades, grade point averages, class schedules, academic actions nor the number of credits enrolled in or earned unless the student has signed a consent form.

Preventing Disclosure of Student Information: Currently enrolled students may withhold disclosure of directory information under FERPA. To withhold disclosure, students must complete the Request to Prevent Disclosure of Directory Information Form. The form may be submitted at any time throughout the year and will immediately affect prospective disclosures. Mason assumes that failure on the part of any student to specifically request the withholding of a category of directory information indicates individual approval for disclosure. Former students may not place a new request for nondisclosure of directory information on their education records; however, they may request its removal.

Confidential (Private) Hold: Prevents disclosure of all student information. A student who elect this hold must conduct all university business in person with a photo ID or via their official Mason email address. No student information will be released over the phone.

Students in this category may still use interactive web and other electronic systems, such as Patriot Web, for transactions (including registration) which are protected by a secured login. Confidential status does not convey a right to be anonymous in the classroom or to impede routine classroom communication and interactions. A student with a confidential status should expect to be identified in class by name, and to have their Mason email address used for class purposes. A student must remove this hold in order for their name to appear in the commencement or convocation program.

Honor Code and System

LaShonda Anthony, Director

Office of Academic Integrity
Student Union I, Suite 4100

Phone: 703-993-6209
Fax: 703-993-2893

Email: oai@gmu.edu
Website: oai.gmu.edu

Mason shares in the tradition of an honor system that has existed in Virginia since 1842. Mason’s Honor System was inaugurated in 1963 when the college was a satellite of the University of Virginia. The code is an integral part of university life. On the application for admission, students sign a statement agreeing to conform to and uphold the Honor Code. Students are responsible, therefore, for understanding the code’s provisions. In the spirit of the code, a student’s word is a declaration of good faith acceptable as truth in all academic matters. Cheating and attempted cheating, plagiarism, lying, and stealing in academic matters constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty members must report all alleged violations to the Honor Committee.
The Honor Committee has the primary duty of espousing the values of the Honor Code. Its secondary function is to sit as a hearing committee on all alleged violations of the code.

**Honor Code**

To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code:

Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.

A full reading of the Honor Code and the associated system can be found at our website [http://oai.gmu.edu](http://oai.gmu.edu).

Please note there is a separate process for individuals accused of research misconduct. As it states in policy 4007, "Allegations of academic misconduct against graduate students are governed solely by the university honor code, except for:

1. research activities as defined above regardless of sponsorship; and
2. master's theses and doctoral dissertations, both of which are governed by this policy.

Allegations of academic misconduct against undergraduate students are governed solely by the university honor code, except for sponsored research activities which are governed by this policy." Questions related to research misconduct that fall under this category should be directed to the Office of Research Integrity and Assurance at irb@gmu.edu

**Faculty Responsibilities**

At the beginning of each semester, faculty members have the responsibility of explaining to their classes their policy regarding the Honor code. They must also explain the extent to which aid, if any, is permitted in academic work. Faculty members are also responsible for including in their syllabus an academic integrity statement as outlined by the Provost's office at the start of each academic semester. Additional language should include what constitutes acceptable behavior for the course they are teaching.

**Procedures for Reporting Violations and Record Keeping**

All suspected violations must be reported to the Office of Academic Integrity in a timely manner. Instructions on how to submit a referral can be found on the office's website [http://oai.gmu.edu](http://oai.gmu.edu). The student will be notified in writing that a referral has been made and meet with a staff member in the office to review the case materials and decide the next course of action. Findings of responsibility in Honor Code cases are maintained by the Office of Academic Integrity in accordance with the Library of Virginia Records Management schedule.

**Honor Committee**

The Honor Committee is selected to promote academic integrity as a core value for our university community. Members of the committee also serve on hearing panels established to investigate and resolve alleged violations of the code. The Antonin Scalia Law School has an Honor Committee that is independent from the rest of the university's Honor Committee. Information about the Scalia Law School honor system can be found by clicking this link. [http://www.law.gmu.edu/academics/honor_code](http://www.law.gmu.edu/academics/honor_code)

Membership will be limited to 100 members who apply for membership. Undergraduate members must have no Honor Code violations, maintain a cumulative GPA of 2.66, be in good academic standing, and successfully complete the training and orientation program. Graduate members must meet all of the requirements above with the exception of maintaining a cumulative GPA of 3.00. Faculty and Administrative Faculty members must hold at least a master's degree. Information on how to apply can be found here. [https://oai.gmu.edu/honor-committee-recruitment](https://oai.gmu.edu/honor-committee-recruitment)

The committee is advised by the staff of the Office of Academic Integrity. The Office provides administrative oversight for the Honor Committee and the integrity process at Mason.

**Student Responsibilities**

Students are responsible for ensuring the work they are submitting is their own work. This includes checking to make sure that any information that was not their own creation is properly attributed to the original source, as well as working within the guidelines provided by the professor of the class regarding submitted work. Facilitating misconduct in the form of providing unauthorized resources, tests, or solutions for others is a violation of the honor code and will be dealt with as such. Additionally, students should request an explanation of any aspect of the professor's policies regarding the Honor Code that they do not fully understand. Students have an obligation to encourage respect among their fellow students for the provisions of the code. This includes an obligation to report violations by other students to the Honor Committee.
STUDENT SERVICES

• Academic Advising
• Executive and Professional Education
• Green Leaf Programs and Courses
• Living Learning Communities
• Military Services
• Reserve Officer’s Training Corps (ROTC)
• Student Conflict Resolution and Support
• Student Health Services
• University Libraries
• University Scholars Program

Academic Advising

3600 Student Union Building I
MSN 2C4
Phone: 703-993-2470
Fax: 703-993-2478
Email: advisor@gmu.edu
Website: advising.gmu.edu

Administration

• Jeannie Brown Leonard, Dean

Undergraduate Academic Advising

Vision

Academic advising at George Mason University is an integral part of the educational process that enhances student learning and development by supporting, teaching, and connecting students to curricular and co-curricular experiences relevant to becoming an exemplary Mason Graduate: an engaged, reflective citizen and well-rounded scholar who is prepared to act.

Mission

The academic advising community at George Mason University commits to creating on-going, personal and purposeful educational partnerships with students and colleagues. Advisors contribute to student success by providing resources and by teaching students to develop the skills required to become life-long learners capable of effective self-advocacy. Dedicated to putting students first and to being responsive, academic advisors:

• Support students in setting and reaching educational goals.
• Teach students to engage in a process of self-reflection and self-discovery, guiding them to find degree pathways that match their interests, skills, and abilities.
• Connect students to campus resources and co-curricular opportunities to integrate learning and experience.

Students should meet regularly with an academic advisor to discuss academic programs, educational goals, and career plans. Individual departments establish their own advising processes; students should check with their departments for the appropriate procedures. For example, some departments require that students meet with an advisor prior to registration each semester. With their advisors, students plan academic programs to meet the general university degree requirements and specific requirements within their major fields. It is the student’s responsibility to read the catalog and know and fulfill the requirements of a specific baccalaureate degree. To assist in the advising process, Mason provides a computerized degree evaluation. Students should access their individualized reports through Patriot Web. It remains the student’s responsibility to seek approval for any program change so that the computerized degree plan may be kept current.

An advisor locator is available online (https://advising.gmu.edu/current-students/advisor-locator). During their freshman and sophomore years, students in the Honors College plan their schedules with honors advisors. Every department coordinates advising of its honors students through the Honors College.

Every student should meet with an advisor to plan a program of study. This meeting should cover the following:

• Review of requirements for the degree and major the student has chosen.
• Review of the student’s record including any deficiencies which must be corrected.
• Discuss career or graduate study options open to the student enrolled in such a program.
• Assess the student’s suitability to major in the chosen discipline.

Students changing majors are encouraged to meet with an advisor in the new major. They may change majors by filing a Change/Declaration of Academic Program Form available from the Office of the University Registrar. These are minimal advising procedures to be followed in all undergraduate segments of the university; individual units may require additional advising sessions.

Student Academic Affairs – Advising, Retention, and Transitions (StAAART)

Web: caart.gmu.edu (https://caart.gmu.edu)

Student Academic Affairs – Advising, Retention, and Transitions, is the umbrella unit for the Center for Academic Advising, Retention, and Transitions (CAART). This unit rules on all academic actions submitted by undergraduate undeclared and nondegree students.

StAAART supports students to thrive in transitions. The unit provides students with the tools and guidance to help them achieve their academic and personal goals. StAAART contributes to student success and degree completion by teaching, supporting, and connecting students to curricular and co-curricular experiences relevant to becoming an exemplary Mason Graduate: an engaged, reflective citizen and well-rounded scholar who is prepared to act. StAAART also serves the university community as a centralized source of information on current academic policies, procedures, and student success initiatives.

We value each student as a distinct individual. Our interactions are guided by an understanding of college student development, campus resources, and are designed to support student learning. We focus on students’ academic engagement and performance, well-being, and
interpersonal connections. Our collaborations are characterized by a comprehensive commitment to student success.

StAAART collaborates widely with campus colleagues to promote successful student transitions. Through our work we provide effective academic and transition advising, offer transition courses, develop student leaders, design and implement retention initiatives, identify and solve problems, improve communication, and influence policies related to academic success and degree completion.


Center for Academic Advising, Retention, and Transitions (CAART)

Academic Advising
CAART staff members assist students making the transition to Mason, including advising those who have not yet declared a major or are exploring or changing a major as well as those terminated from their academic program. Students are encouraged to make an appointment for information about Mason Core requirements, programs, policies, procedures, and other academic concerns. Advising is available by appointment; consult the website (https://advising.gmu.edu) for hours of operation. The Center also processes student appeals for undergraduate undeclared (exploratory) and non-degree students. http://advising.gmu.edu/current-student/student-appeals/.

Health Professions Advising
Web: prehealth.gmu.edu (http://prehealth.gmu.edu)

Health Professions Advising is committed to collaborating with campus colleagues to assist degree-seeking students achieve success in their pursuit to postgraduate work in a medical field (allopathic and osteopathic medicine, dentistry, optometry, physician assistant, pharmacy, physical therapy, occupational therapy, speech therapy and veterinary medicine). The Health Professions Advising Coordinator provides information and tools which will help pre-health students achieve success in the application process to a professional school.

Retention and Student Success
Web: retention.gmu.edu (http://retention.gmu.edu)

Retention and Student Success provides leadership on planning and implementing campus-wide retention and degree-completion efforts in collaboration with academic colleges, the Division of University Life, and other campus stakeholders. Together with academic advisors, faculty, and staff, we aim to identify challenges to students' success and provide resources and support to ensure a more seamless path to degree completion. Specifically, the Retention and Student Success team manages key retention and advising technologies and supports academic units in leveraging these systems to support retention and degree-completion goals. Retention and Student Success also engages in research, direct outreach to students at risk for leaving the university, assessment of student success initiatives, and provides support in assessing academic advising and professional development among academic advisors campus-wide.

Transitions - UNIV Courses and Programs
Web: transitions.gmu.edu (http://transitions.gmu.edu)

The Transitions functions within CAART include academic UNIV courses, student leadership development, and Project Peak (an outdoor extended orientation program for new students). UNIV Courses and Programs’ mission is to assist and mobilize students to craft a successful college experience and prepare for their future. Our courses serve all undergraduate students as they transition into college, determine their major/solidify their career path, become strong scholars and student leaders, and prepare for life after college. The curriculum in the first year is supported by Peer Advisors who co-teach UNIV 100 Introduction to Mason and facilitate learning experiences through Project Peak.

Executive and Professional Education

3351 Fairfax Drive
Suite 448, Founders Hall
MS 2G2, Arlington, VA 22201
Phone: (703) 993-2109
Email: execinfo@gmu.edu
Website: execed.gmu.edu

Executive and Professional Education serves as Mason’s initial point of contact and referral for the business and professional community, and responds to all professional development and continuing education inquiries, requests, and needs. Supported program activities include contracted academic credit programs, noncredit public programs and seminars, online courses, professional certificate programs, continuing education units (CEUs), on-site contract training programs, special professional development events and programs, special workforce development programs, and training center facilities.

Executive and Professional Education is strategically located at the Arlington Campus in Founders Hall. Current program information, offerings, and capabilities can be reviewed at their website (http://execed.gmu.edu).

Green Leaf Programs and Courses
Website: sustainabilitystudies.gmu.edu

Green Leaf Programs and Courses

A “Green Leaf” course or academic program focuses on learning about sustainability, i.e., meeting our present needs without compromising the ability of future generations to meet their own needs.

See the Sustainability Studies website (http://sustainabilitystudies.gmu.edu/greenleaf) for more information.

Programs

Green Leaf academic programs focus on sustainability, usually including a required set of Green Leaf courses in order to cover the social, economic and environmental dimensions of sustainability. Each is a vital contributor to Mason’s sustainability across the curriculum.
Undergraduate Degrees
- Civil and Infrastructure Engineering, BS (p. 1177)
- Earth Science, BS (p. 627)
- Environmental and Sustainability Studies, BA (CHSS) (p. 576)
- Environmental Science, BS (p. 690)
- Geology, BA (p. 634)
- Global Affairs, BA (p. 523)
- Health, Fitness, and Recreation Resources, BS: Concentration in Parks and Outdoor Recreation (p. 227)
- Tourism and Events Management, BS (p. 242)
- Integrative Studies, BS: Concentration in Applied Global Conservation (AGCN) (p. 602)

Undergraduate Minors and Certificates
- Atmospheric Science Minor (p. 623)
- Conservation Studies Minor (CHSS) (p. 576)
- Earth Science Minor (p. 632)
- Environmental Policy Minor (p. 690)\(^1\)
- Geology Minor (p. 639)
- Global Affairs Minor (p. 535)\(^1\)
- Paleoontology Minor (p. 640)
- Sustainable Enterprise Minor (p. 714)
- Sustainability Studies Minor (p. 713)

Bachelor's/Accelerated Master's Program
- Bachelor's Degree (Green Leaf)/Environmental Science and Policy, Accelerated MS (p. 703)
- Bachelor's Degree (any)/Interdisciplinary Studies, Accelerated MAIS (Energy and Sustainability Concentration) (p. 553)\(^1\)
- Bachelor's Degree (any)/Global Affairs, Accelerated MA (p. 539)\(^1,2\)

Graduate Degrees
- Climate Dynamics, PhD (p. 623)
- Environmental Science and Policy, MS (p. 696)
- Environmental Science and Public Policy, PhD (p. 704)
- Global Affairs, MA (p. 536)\(^1\)
- Interdisciplinary Studies, MAIS: Concentration in Energy and Sustainability (p. 542)

\(^1\) Meets Green Leaf criteria when options are selected to ensure coverage of "people, planet and prosperity" across the program's curriculum.

\(^2\) Meets the Green Leaf criteria when the Master's degree is paired with a Green Leaf Bachelor's degree.

Courses
The Green Leaf designation recognizes offerings that contribute significantly to students' understanding and practice of sustainability. These offerings extend beyond environmental management, natural resources protection and conservation studies alone as Mason's Green Leaf curricula comprise both sustainability-focused and sustainability-related courses.

Sustainability- Focused Courses
Sustainability-focused courses provide valuable grounding in the concepts and principles of sustainability. These courses educate students about how different dimensions of sustainability relate to and support each other in theory and practice. In addition, these courses help equip students with the skills to weave together disparate components of sustainability in addressing complex issues.

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<td>Environment and Culture</td>
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<td>EcoArt (Mason Core) (p. 142)</td>
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<td>BIOL 379</td>
<td>RS: Ecological Sustainability (Mason Core) (p. 142)</td>
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<td>CEIE 401</td>
<td>Sustainable Land Development</td>
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<td>CEIE 540</td>
<td>Water Supply and Distribution</td>
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<td>CEIE 892</td>
<td>Special Topics in Environmental and Water Resource Systems Engineering</td>
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<td>COMM 660</td>
<td>Climate Change and Sustainability Communication Campaigns</td>
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<td>CONF 702</td>
<td>Peace Studies</td>
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<td>CONS 410</td>
<td>Human Dimensions in Conservation (Mason Core) (p. 142)</td>
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<td>ECON 105</td>
<td>Environmental Economics for the Citizen (Mason Core) (p. 142)</td>
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<td>EVPP 322</td>
<td>Business and Sustainability</td>
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<td>EVPP 338</td>
<td>Economics of Environmental Policy</td>
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<td>EVPP 355</td>
<td>Ecological Engineering and Ecosystem Restoration</td>
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<td>EVPP 361</td>
<td>Introduction to Environmental Policy</td>
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<td>EVPP 362</td>
<td>Intermediate Environmental Policy</td>
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<td>EVPP 421</td>
<td>Marine Conservation</td>
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<td>EVPP 432</td>
<td>Energy Policy</td>
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<td>EVPP 475</td>
<td>Global Biodiversity Governance</td>
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<td>EVPP 480</td>
<td>Sustainability in Action (Mason Core)</td>
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<td>EVPP 521</td>
<td>Marine Conservation</td>
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<td>EVPP 525</td>
<td>Economics of Human/Environment Interactions</td>
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<td>EVPP 533</td>
<td>Energy Policy</td>
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<td>EVPP 608</td>
<td>Introduction to Environmental Social Science</td>
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<td>EVPP 620</td>
<td>Development of U.S. Environmental Policies</td>
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<tr>
<td>EVPP 622</td>
<td>Management of Wild Living Resources</td>
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<td>EVPP 626</td>
<td>Environment and Development in Asia</td>
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<td>EVPP 627</td>
<td>Environmental Policy in Latin America</td>
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<td>EVPP 628</td>
<td>Environment and Development in Africa</td>
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<td>Environment and Society</td>
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<td>GEOL 321</td>
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<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core)</td>
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<tr>
<td>GEOL 307</td>
<td>Sustainable Development</td>
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</tbody>
</table>
### Sustainability-Related Courses

Sustainability-related courses help build knowledge about a component of sustainability or introduce students to sustainability concepts during part of the course. They may complement sustainability-focused courses by providing students with in-depth knowledge of a particular aspect or dimension of sustainability (such as the natural environment) or by providing a focus area (such as renewable energy) for a student's sustainability studies, or they may broaden students' understanding of sustainability from within different disciplines.

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<td>Environmental Engineering and Science</td>
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<td>CEIE 450</td>
<td>Environmental Engineering Systems</td>
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<td>CEIE 690</td>
<td>Topics in Civil Engineering</td>
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<td>CHEM 155</td>
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<td>Introduction to Environmental Chemistry II (Mason Core)</td>
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<td>CHEM 458</td>
<td>Chemical Oceanography</td>
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<td>CLIM 101</td>
<td>Global Warming: Weather, Climate, and Society (Mason Core)</td>
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<td>Introduction to Global Climate Change Science (Mason Core)</td>
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<td>Collaborative Community Action</td>
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<td>Principles of Environmental Conflict Resolution</td>
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<td>CONF 683</td>
<td>Environmental Conflict Resolution: Situation Assessment, Process Design and Best Practices</td>
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<td>Conservation Theory</td>
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<td>Biodiversity Monitoring</td>
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<td>GEOL 306</td>
<td>Soil Science</td>
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<td>Geology of Earth Resources</td>
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<td>Palaeoclimatology</td>
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<td>GEOL 363</td>
<td>Coastal Morphology and Processes</td>
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<td>GGS 121</td>
<td>Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142)</td>
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<td>Global Environmental Hazards</td>
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<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
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<td>Population Geography (Mason Core) (p. 142)</td>
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<td>The Mysteries of Migration: Consequences for Conservation (Mason Core) (p. 142)</td>
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<td>INTS 338</td>
<td>Animal Rights and Humane Education</td>
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<td>INTS 470</td>
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<td>PHYS 331</td>
<td>Fundamentals of Renewable Energy</td>
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Veteran Student Resident Tuition Rates

George Mason University complies with veteran student regulations regarding tuition rates. The following individuals shall be charged the in-state rate, or otherwise considered a resident, for tuition purposes:

- A Veteran using educational assistance under either chapter 30 (Montgomery G.I. Bill – Active Duty Program) or chapter 33 (Post-9/11 G.I. Bill), of title 38, United States Code, who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of his/her formal State of residence) and enrolls in the school within three years of discharge from a period of active duty service of 90 days or more.

- Anyone using transferred Post-9/11 GI Bill benefits (38 U.S.C. § 3319) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of his/her formal State of residence) and enrolls in the school within three years of the transferor’s discharge from a period of active duty service of 90 days or more.

- A spouse or child using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9)) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of his/her formal State of residence) and enrolls in the school within three years of the Service member’s death in the line of duty following a period of active duty service of 90 days or more.

- An individual using educational assistance under chapter 31, Vocational Rehabilitation and Employment (VR&E) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of his/her formal State of residence) effective for courses, semesters, or terms beginning after March 1, 2019.

- Anyone described above while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same institution. The person so described must have enrolled in the institution prior to the expiration of the three-year period following discharge or release as described above and must be using educational benefits under either chapter 30, chapter 33, or chapter 31 of title 38, United States Code.

Military Activation Policy

In accordance with the “Virginia Tuition Relief, Refund, and Reinstatement Guidelines,” Mason students in the uniformed services under call or order to active duty, after the beginning of a semester or summer session have two options they may consider with the dean’s office of the school of enrollment and Office of the University Registrar in determining their enrollment status with the University.

1. Students may withdraw from courses in which they are enrolled as of the effective date of the call or order to report to active duty. When this option is selected, a credit of tuition and fees, and any pre-paid tuition, room, or board deposits, will be made to the student’s account. Students will receive a pro-rated credit of dining service and housing contract charges. Financial aid awards that were credited to the student’s account will be recovered by the University in the amount of tuition and fees, dining, or housing credit. Loans used to cover the remaining charges will be subject to normal repayment procedures. For students receiving Title IV funds, financial aid recovery will be subject to requirements for return of Title IV funds to the federal government.

2. Students may take a grade of incomplete in all courses. Students may request an incomplete grade for military deployment, mobilization, or duty changes occurring in the final three (3) weeks of the course if they have satisfactorily completed more than 50% of the course requirements. The conditions for completing course work and receiving a regular grade should be agreed to between the student, course instructors, and the appropriate dean’s office of the school in which the student is enrolled. A copy of the military orders must be provided to the Office of the University Registrar as documentation. The deadline for removing an incomplete given on the basis of military service is the last day of the subsequent term, which includes the summer session. This option requires joint agreement of the student and faculty member(s). Faculty and departments are encouraged to take additional steps to accommodate short absences due to military obligations. If a joint agreement can’t be reached, students may withdraw from the course and are eligible to receive a 100% reduction of tuition charges after withdrawal is approved for classes that have been discontinued.

Please coordinate requests under the Military Activation Policy with the Office of Military Services. The Office of Military Services will assist with the processes in accordance with current policies. Students will need to discuss their situation with the appropriate representative form their dean’s office in consultation with Student Accounts and the Office of the University Registrar. A copy of the active duty orders are required.

Regardless of the option selected above, the following provisions govern reinstatement to the University upon release or return from service in the uniformed services. Students that have a leave of absence under the military activation policy are entitled to reinstatement, to their program of study (if available), without having to reapply for admission if (1) they return to the University after a cumulative absence of not more than five years, and (2) they provide notice of intent to return to the University not later than three years after the completion of the period of service. (Exceptions to these time periods may be found in the Higher Education Opportunity Act (HEOA) of 2008.) Throughout the entire process, former students/students will have access to counseling to determine the impact of absence from the program, to evaluate the ability to resume study, and to assess options when a program is no longer available or suitable.

Applicants to the University who have accepted an offer of admission but who have not yet registered in a degree program may defer admission for up to two consecutive semesters by making a request in writing to the Office of Military Services. To request a deferment for longer than two consecutive semesters, a copy of the military orders must be provided with the written request.

For further information, students should contact the Office of Military Services at (703) 993-8243.

Virginia Military Survivors and Dependents Education Program

The Virginia Military Survivors and Dependents Education Program provides education benefits to qualified children between the ages of 16 and 29, and spouses of military service members killed, missing in action, taken prisoner as a result of military service in an armed conflict, or veterans discharged or released under conditions other than dishonorable who served in the Armed Forces of the United States, Reserves of the Armed Forces of the United States, or Virginia National Guard, and due to such service, became at least 90 percent disabled.

The military service member must have established domicile, or had a physical presence, in Virginia for at least five years immediately prior
the Basic Course Level. Freshmen (Enrollment in Military Science (MLSC) courses is open to all students at Maryland, Virginia, and the District of Columbia. Frequently conducts training with colleges and universities throughout the country.

Patriot Battalion began in 1982, achieved independent status in 2000, and continues to grow. The team has an organized color guard, drill team and an intercollegiate Ranger Challenge competition team. Students also have the opportunity to attend official Army events and military related field trips. The unit has an organized color guard, drill team and an intercollegiate Ranger Challenge competition team. Students also have the opportunity to attend official Army events and military related field trips.

Education benefits include tuition and fee waivers, and a stipend for room and board charges, books and supplies, and other expenses. Program information may be found on the Virginia Department of Veterans Services website.

**Reserve Officer’s Training Corps (ROTC)**

**Army ROTC**

2121 Recreation & Athletic Complex

Phone: 703-993-2706

Fax: 703-993-2708

Web: arotc.gmu.edu (http://arotc.gmu.edu)

**Administration**

Lieutenant Colonel Justin Chezem, U.S. Army (outgoing)

Professor of Military Science

Major Erica J. Witty, U.S. Army (incoming)

Professor of Military Science

The Army Reserve Officers’ Training Corps (ROTC) is an elective program offering qualified students the opportunity to earn a commission as an officer in the U.S. Army, Army National Guard, or U.S. Army Reserve while pursuing a baccalaureate or graduate degree as a full-time student. The program emphasizes student learning and participation in applied leadership, leadership theory, decision making, management skills, time management, ethics and military law, logistics, military roles and national objectives, strategic and tactical planning and principles, and basic military knowledge and skills. The George Mason Army ROTC Patriot Battalion began in 1982, achieved independent status in 2000, and frequently conducts training with colleges and universities throughout Maryland, Virginia, and the District of Columbia.

**Enrollment**

Enrollment in Military Science (MLSC) courses is open to all students at the Basic Course Level. Freshmen (MLSC 100 Introduction to Army/ROTC and MLSC 102 Leadership Skills II), sophomore (MLSC 200 Self/Team Development and MLSC 202 Leadership Skills IV), and junior (MLSC 300 Applied Leadership I and MLSC 302 Applied Leadership II) classes are awarded 1 credit each. Senior classes (MLSC 400 Leadership and Management and MLSC 402 Leadership and Ethics) earn 3 credits each. No military service obligation is incurred by enrolling in the freshman and sophomore level Army ROTC courses. Courses can be dropped or added, as with any elective course at Mason.

The four-year program is organized into two successive phases: the Basic Course and the Advanced Course. For students seeking the opportunity to earn a commission as an officer, several entry methods and participation strategies can be used. A minimum of four semesters must remain in the student’s academic curriculum to complete commissioning requirements; these semesters may be part of either a full-time undergraduate or graduate degree. Course descriptions appear under Military Science (MLSC) in the Courses section of this catalog. Cadets must meet established academic standards. A student must maintain an overall GPA of at least 2.00 to earn commissioning credit for ROTC.

Contracted and scholarship cadets of any level are required to pass the Army Physical Fitness Test (APFT) once each semester. Physical training (PT) is conducted three times each week (Monday/Wednesday/Friday from 6:30 to 8 a.m.). All contracted and scholarship cadets are required to attend physical training.

**Basic Course Curriculum**

The Basic Course curriculum is a four-course series (MLSC 100 Introduction to Army/ROTC, MLSC 102 Leadership Skills II, MLSC 200 Self/Team Development, and MLSC 202 Leadership Skills IV), usually taken in the freshman and sophomore years. Each class awards 1 academic credit. The Basic Course trains students in reading, writing, public speaking, decision making, management skills, time management, ethics and military law, logistics, military roles and national objectives, strategic and tactical planning and principles, and basic military knowledge and skills. The George Mason Army ROTC Patriot Battalion began in 1982, achieved independent status in 2000, and frequently conducts training with colleges and universities throughout Maryland, Virginia, and the District of Columbia.

Education benefits include tuition and fee waivers, and a stipend for room and board charges, books and supplies, and other expenses. Program information may be found on the Virginia Department of Veterans Services website.

**Advanced Course Curriculum**

The Advanced Course consists of a four-course series (MLSC 300 Applied Leadership I, MLSC 302 Applied Leadership II, MLSC 400 Leadership and Management, and MLSC 402 Leadership and Ethics) taken during the junior and senior years. MLSC 300 Applied Leadership I and MLSC 302 Applied Leadership II earn 1 credit each, while MLSC 400 Leadership and Management and MLSC 402 Leadership and Ethics earn 3 credits each. Enrollment in the ROTC advanced course requires that students enter into a contract to serve as a commissioned officer in the active or reserve component of the U.S. Army upon graduation. Many graduates

**Web:** arotc.gmu.edu

**Fax:** 703-993-2708

**Phone:** 703-993-2706

2121 Recreation & Athletic Complex

Entitlements:

- Tuition and fee waivers
- Stipend for room and board charges
- Books and supplies
- Other expenses

Education benefits include tuition and fee waivers, and a stipend for room and board charges, books and supplies, and other expenses. Program information may be found on the Virginia Department of Veterans Services website.

**Reserve Officer's Training Corps (ROTC)**

**Army ROTC**

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The four-year program is organized into two successive phases: the Basic Course and the Advanced Course. For students seeking the opportunity to earn a commission as an officer, several entry methods and participation strategies can be used. A minimum of four semesters must remain in the student’s academic curriculum to complete commissioning requirements; these semesters may be part of either a full-time undergraduate or graduate degree. Course descriptions appear under Military Science (MLSC) in the Courses section of this catalog. Cadets must meet established academic standards. A student must maintain an overall GPA of at least 2.00 to earn commissioning credit for ROTC.

Contracted and scholarship cadets of any level are required to pass the Army Physical Fitness Test (APFT) once each semester. Physical training (PT) is conducted three times each week (Monday/Wednesday/Friday from 6:30 to 8 a.m.). All contracted and scholarship cadets are required to attend physical training.

**Basic Course Curriculum**

The Basic Course curriculum is a four-course series (MLSC 100 Introduction to Army/ROTC, MLSC 102 Leadership Skills II, MLSC 200 Self/Team Development, and MLSC 202 Leadership Skills IV), usually taken in the freshman and sophomore years. Each class awards 1 academic credit. The Basic Course trains students in reading, writing, public speaking, decision making, management skills, time management, ethics and military law, logistics, military roles and national objectives, strategic and tactical planning and principles, and basic military knowledge and skills. The George Mason Army ROTC Patriot Battalion began in 1982, achieved independent status in 2000, and frequently conducts training with colleges and universities throughout Maryland, Virginia, and the District of Columbia.

Education benefits include tuition and fee waivers, and a stipend for room and board charges, books and supplies, and other expenses. Program information may be found on the Virginia Department of Veterans Services website.

**Advanced Course Curriculum**

The Advanced Course consists of a four-course series (MLSC 300 Applied Leadership I, MLSC 302 Applied Leadership II, MLSC 400 Leadership and Management, and MLSC 402 Leadership and Ethics) taken during the junior and senior years. MLSC 300 Applied Leadership I and MLSC 302 Applied Leadership II earn 1 credit each, while MLSC 400 Leadership and Management and MLSC 402 Leadership and Ethics earn 3 credits each. Enrollment in the ROTC advanced course requires that students enter into a contract to serve as a commissioned officer in the active or reserve component of the U.S. Army upon graduation. Many graduates
elect to apply for service on active duty although ROTC also offers the opportunity of service in either the Army Reserve or Army National Guard.

The 300-level courses emphasize squad and platoon leadership, tactics, and preparation for Advanced Camp. Advanced Camp is a four-week training and evaluation event conducted during the summer at Fort Lewis, Washington. Successful completion is a prerequisite for commissioning. Cadets typically attend Advanced Camp in the summer between their junior and senior years; however, they may attend after their senior year if necessary. Salary, travel expenses, and room and board are all provided during the course.

Satisfactory completion of an approved military history course is also required. The department of History and Art History offers a number of 300-level survey courses on the American military experience that satisfy this requirement. Permission of the Professor of Military Science is required prior to substituting any other course.

Upper division ROTC students are also expected to participate in peer mentoring as part of their leadership development. The ROTC peer mentorship program helps students assimilate into the program and helps students prioritize their time to ensure they remain in good academic standing.

The 400-level courses are considered to be the transition phase to becoming an officer in the U.S. Army. These courses focus on leadership, staff operations, logistics, military law, and ethics. Seniors are expected to organize and attend an additional one-hour staff and training meeting per week as part of their leadership experience and duties. Planning and implementation of training becomes the primary focus for seniors in required laboratories.

Enrollment in the advance course ROTC classes requires that certain prerequisites be met. For more information, see the Courses section of this catalog.

Earning a Commission

There are several methods by which students may enter Army ROTC to earn a commission as a second lieutenant on graduation:

- Traditional students may complete the four-year program.
- Sophomores may dual-enroll in both years of MLSC freshman and sophomore level instruction to satisfy the lower-level division requirement in a single academic year. A member of the ROTC cadre must sign a time conflict approval form in order for students to enroll in both freshmen and sophomore lecture sections, as well as the leadership laboratory.
- Veterans with prior college credits may enter directly into the upper-division sequence (if academically aligned as a junior).
- Sophomores may apply to attend a four-week Basic Camp - between the sophomore and junior years to gain experience equivalent to the basic course. Medical, physical and academic standards must be met prior to attending Basic Camp. Students should contact the Recruiting Operations Office in the ROTC department to determine eligibility.
- Graduate students entering a two year program are also eligible to attend Basic Camp prior to start of their graduate studies. Students should contact the Recruiting Operations Officer in the ROTC department.

Education delays for graduate study also may be approved for Cadets seeking training as physicians, lawyers or ministers based on needs of the Army. Non-U.S. citizens may participate freely in the lower-division ROTC courses, but must earn U.S. citizenship prior to enrollment in courses requiring a contractual obligation to serve as a commissioned officer.

Scholarship Programs

Two-, three-, and four-year ROTC scholarships are available to freshmen, sophomores, and juniors in all majors on a competitive basis as well as to graduating seniors who wish to pursue a two-year master's degree. Students must have a minimum cumulative GPA of 2.50 to apply and be under age 31 when commissioned. Scholarships pay 100 percent of tuition, an annual book allowance of $1,200, and a stipend of at least $300 per month during the school year, all tax free.

A two or three year Guaranteed Reserve Forces Duty scholarship is available that guarantees reserve duty upon graduation and commissioning. Students should contact the Recruiting Operations Officer in the ROTC department to determine eligibility.

High school students interested in four-year scholarships should apply online (http://www.goarmy.com/rotc) no later than December 15 of their senior year for a scholarship that would start in the fall semester of their freshman year at Mason. Contact the Recruiting Operations Officer for details.

Many students participate in ROTC as non-scholarship cadets. A non-scholarship cadet cannot enter into a contract to receive a commission until the sophomore year (to include completing MLSC 100 Introduction to Army/ROTC and MLSC 102 Leadership Skills II or equivalent credit.) For the sophomore, junior, and senior years, non-scholarship contracted students receive a monthly stipend.

Air Force ROTC

AFROTC Detachment 330
2125 Cole Student Activities Building
University of Maryland
College Park, MD 20742-1021
Phone: 301-314-3242

Enrollment

The Air Force Reserve Officers’ Training Corps (AFROTC) provides two programs for college men and women to earn a commission as a second lieutenant in the U.S. Air Force while completing their university degree requirements. To enter the AFROTC program, students should contact 301-314-3242 or go online (http://www.afrotc.umd.edu). Mason students register for the appropriate courses through the Consortium Office located in SUB I, Room 2101. Attendance at courses, located at the University of Maryland, is mandatory. Carpools among Mason cadets are usually available.

Four-Year Program

This program is comprised of a General Military Course (GMC) and a Professional Officer Course (POC). The first two years (GMC), normally for freshmen and sophomores, give a general introduction to the Air Force and its various career fields. Students enrolled in the GMC program incur no obligation and may elect to discontinue the program at any time. The final two years, the POC concentrate on the development of leadership skills and the study of U.S. defense policy. Students must compete for acceptance into the POC. Students enrolled in the last two years of the program regardless of scholarship status will receive a monthly stipend. Juniors receive $450 a month and seniors receive $500 a month.
Three-Year Program
This program is normally offered to prospective sophomores but may be
taken by seniors and graduate students. The academic requirements for
this program are identical to the four-year program, and students receive
the same benefits in their POC years. Student will take both the freshmen
and sophomore class to make up the missed first year. Students must
start the fall semester of their sophomore year to be eligible for the
three-year program. Graduate students should contact the detachment
301-314-3242 for graduate student entrance requirements.

Scholarships
Scholarships are available in many fields and are based on merit. Those
selected receive tuition, lab expenses, incidental fees, and a book
allowance, plus a nontaxable monthly allowance. For the most up to date
information about scholarships available contact the detachment or visit
their website (http://afrotc.com/scholarships).

AFROTC Awards
AFROTC cadets are eligible for numerous local, regional, and national
awards. Many of these awards include monetary assistance for school.

Student Conflict Resolution and Support
Room 2410, Student Union Building I
Office of Diversity, Inclusion and Multicultural Education
Phone: 703-993-3306
Email: tcarte2@gmu.edu

Administration
• Thomas Carter II, SCRS Coordinator

Student Conflict Resolution and Support (SCRS) is a resource to help all
GMU students navigate the University. The Student Conflict Resolution
and Support Coordinator can listen to university-related concerns raised
by undergraduate and graduate students in confidence and off-the-
record, and help them identify appropriate resources to address their
concerns and understand their options in any University-related situation.
SCRS operates independently of all formal processes at the university.
The SCRS Coordinator has no authority to make exceptions or to grant
requests, but can help expedite informal resolution to students’ concerns.
When appropriate, the SCRS Coordinator may recommend changes in
processes and policies at the university.

Meetings with the SCRS Coordinator are confidential, except when there
is imminent risk of serious physical harm to anyone. SCRS does not serve
as an office of notice or record for the University. If a student wishes
to put the University on notice about anything, the SCRS Coordinator
can help identify the appropriate channel. SCRS offers a safe place to
discuss and explore options, so students can better understand the
University and make informed decisions about their concerns. SCRS
also offers conflict coaching, facilitated dialogues, restorative justice
circles, and mediation. SCRS does not replace or substitute any formal
processes made available by the University. Our services and procedures
are designed to be student-centered and accessible to all members of our
community.

Student Health Services
2300 SUB I
Fairfax Campus
703-993-2831

229 Senator Colgan Hall
Science and Technology Campus
703-993-8374

B102 Van Metre Hall (formerly Founders Hall)
Arlington Campus
703-993-4863

Website: shs.gmu.edu

Student Health Services provides easily accessible and affordable health
care to all enrolled students in a caring and confidential environment.
Clinics on the Fairfax, Arlington, and Science and Technology campuses
offer a wide variety of services (https://shs.gmu.edu) to keep Mason
students healthy.

Immunization Requirements
All newly admitted or newly readmitted students are required to submit
the immunization record form. Students born after December 31, 1956,
must provide documented proof that they have been immunized against
certain communicable diseases. Students born before December 31,
1956 are only required to complete the Tuberculosis screening section on
the immunization record form.

Students must submit completed immunization records to the
Immunization Office by the first day of classes for the semester per the
Registrar’s calendar.

Students must complete parts 1-4 and a healthcare provider must
complete parts 5-8 of the Immunization Record Form. A late fee will be
charged and a hold will be placed on the student’s Patriot Web account if
immunization records or documentation are incomplete.

Immunization requirements are mandated by the Commonwealth
of Virginia and George Mason University policy #6004 (http://
universitypolicy.gmu.edu/policies/immunization-policy). Student
Health Services is responsible for collecting and maintaining students’
immunization records.

Required Immunizations
Tuberculosis: Tuberculosis (TB) screening is required for all students. If
TB testing is needed it must be completed within the past 6 months.

Tdap: Must submit proof of Tetanus/diphtheria/Acellular Pertussis (Tdap)
vaccination after age 11. Must also show proof of Tetanus and diphtheria
(TD)/Tdap within the last 10 years if Tdap vaccine was administered more
than 10 years ago. A titer lab report is not accepted.

MMR: Two doses each of measles, mumps, rubella, after 1967 OR
the combination MMR (after 1971), OR a laboratory report of a titer
documenting positive immunity to each of the diseases.

Hepatitis B: Students are required to submit proof of vaccination or
immunity against Hepatitis B disease OR they must sign a waiver.
Student Health Services highly recommends this vaccination series.

Meningococcal: Meningococcal Conjugate vaccine administered between
the ages of 16-21 OR submit a signed waiver. Student Health highly
George Mason University offers a student health insurance plan which is available to eligible undergraduate and graduate students who would like to purchase health insurance. F-1 and J-1 Visa students are automatically enrolled in the Mason health insurance plan under University Policy #6002 (https://universitypolicy.gmu.edu/policies/health-insurance-requirement-for-international-f-1-and-j-1-visa-students). Details about the plan are online (http://shs.gmu.edu/insurance).

**Immunization Submission**
Submit the immunization record form to the Immunization Office through the secure patient portal online, by mail, or in-person. Submission details are on the form. Students must complete parts 1-4 and a healthcare provider must complete parts 5-8 of the Immunization Record Form. Transcription service is available for a fee at Student Health.

If a student is not able to provide appropriate documentation, immunizations and/or titer are also available for a fee. Call (703-993-2135) or walk-in to the Immunization Office (http://shs.gmu.edu) to schedule an appointment for immunizations at Student Health Services after records are submitted and processed. Contact the Immunization Office for questions about immunization requirements, submission, or vaccine prices.

Online submission: gmu.medicatconnect.com (https://gmumedicatconnect.com)

Office location: SUB 1, Rooms 2347 - 2349

Mailing Address: George Mason University Student Health Services
4400 University Drive, MS 2D3
Fairfax, Virginia 22030

Students are responsible for ensuring immunization records are submitted and complete by the deadline. Students will receive notification about incomplete or missing immunization requirements through their Mason email account. The notice will direct the student to log into the secure patient portal (https://gmumedicatconnect.com) for more information.

**Minor Consent**
A parent/legal representative signature is required for a minor (a student under age 18 at the time classes begin). A minor consent must be on file at Student Health Services to receive most health services. This minor consent is on the immunization record form. If a minor student chooses to sign the hepatitis B or meningococcal waiver on the immunization record form, a parent/legal representative signature is also required.

**Student Health Services**
Student Health is staffed by dedicated doctors, nurse practitioners, and nurses who provide diagnosis and treatment of illness and minor injuries and health and wellness counseling for all enrolled students.

There is no charge to be seen by a healthcare provider. There are fees for supplies, immunizations, lab testing, medications and procedures. Call to schedule an appointment for routine or non-urgent services. If Student Health Services is closed, call 703-993-2831 to speak with the free nurse advice service.

**Student Health Insurance Plan**
George Mason University offers a student health insurance plan which is available to eligible undergraduate and graduate students who recommends students living on campus or participating in sports receive this vaccine.

The immunization record form can be found on the Student Health Services website (http://shs.gmu.edu/immunizations) or obtained at the Immunization Office. Immunization records must be in English.

**University Libraries**
**Office of the Dean of Libraries and University Librarian**
4300 Fenwick Library
Fairfax Campus
MSN: 2FL
Phone: 703-993-2491
Website: library.gmu.edu

**Administration**
- John G. Zenelis, Dean of Libraries and University Librarian
- John C. Walsh, Associate University Librarian for Learning, Research and Engagement
- Clyde W. Grotophorst, Associate University Librarian for Digital Strategies and Systems
- Bridget Euliano, Assistant University Librarian for Access and Resource Management

**Research Services and Instruction**
Library faculty work with instructional and research faculty and students in specific academic programs and departments to promote new resources, consult with faculty about acquiring specific scholarly resources, assist graduate students with thesis or dissertation research, develop and maintain research guides, support online courses, collaborate in offering research programs and scholarly events, and conduct instructional and training sessions for all levels of library users—students, faculty and staff.

**Instructional Services**
The University Libraries provides a variety of instructional services tailored to the curricular and academic programs of the university’s schools and colleges. Library instruction ranges from workshops to classes, and is aligned with and embedded in the university’s undergraduate and graduate curricula. Technology-rich instructional venues are available in all of the libraries.

**Research & Consultation Services**
Academic, special collections, and other staff provide research and consultative assistance to students, faculty and staff at any stage of the research process. Research support ranges from class assignments to lengthier research projects, to capstone course and graduate degree requirements (i.e., thesis or dissertation), to data and GIS support, to research and scholarship leading to publication and related scholarly communications. For help in a specific discipline, consult the website (http://library.gmu.edu/ask/request).

**Scholarly Resources**
Library research materials in various formats are housed on the Fairfax Campus at the Fenwick Library and the Gateway Library; on the Arlington Campus at the Arlington Campus Library; and on the Science and
Technology Campus at the Mercer Library. The Antonin Scalia Law School Library, on the Arlington Campus, is administered separately, but maintains close programmatic and service coordination with all of Mason’s libraries. Combined holdings, including the law library, include: print books and bound journal volumes; e-books; online journals and proceedings; online audiovisual items; multimedia materials; microform units; print government documents (U.S., Virginia, and European Union); maps; electronic databases; and significant holdings of manuscripts, special collections, and archives.

Mason’s integrated library information system and its discovery layer interface access an online catalog, circulation, and print course-reserves information. The system can be used in any of the libraries from campus locations on the network or via the web. Electronic course reserves are provided through Blackboard (Bb), the university’s learning management system. The Libraries’ website (http://library.gmu.edu), offers access to a variety of networked digital resources and electronically mediated services, including a virtual reference service.

Current affiliations include the following:

- The Virtual Library of Virginia (VIVA) Program, a Virginia funded electronic and resource-sharing program for public higher-education institutions;
- The Washington Research Library Consortium (WRLC), whose membership includes American, Catholic, Gallaudet, Georgetown, George Washington, Howard, Marymount, and District of Columbia universities, provide resource sharing services;
- The Association of Southeastern Research Libraries, which includes the 36 largest university libraries in a 10-state region;
- The Center for Research Libraries - Global Resources Network, a Chicago-based research library for research, along with its affiliate Linda Hall Library of Engineering and Technology (Kansas City, MO), whose multimillion volume holdings comprise specialized and uniquely held materials in North America and;
- The international Online Computer Library Center (OCLC) extensive computerized system and network facilitate national and international library resource-sharing activities and shared cataloging of scholarly material worldwide.
- HathiTrust

An intercampus delivery service is available for students and faculty requesting materials held at any Mason campus library. Materials not held by Mason can be obtained by direct borrowing from WRLC institution libraries via the Consortium Loan Service, and other research libraries via interlibrary loan, or, when required, commercial delivery services.

Expanded academic support services also include the following:

**Digital Scholarship Center**

Web: dsc.gmu.edu (http://dsc.gmu.edu)

The Digital Scholarship Center (DiSC) is the library’s most sophisticated response to the interdisciplinary research, teaching and learning needs of our digital researchers. The focus is supporting scholarly or academic activities that are conducted or enhanced through the use of data and digital technologies. DiSC staff and affiliates deliver digital research services, and the center itself offers a technology-rich environment where discovery, exploration, collaboration and, ultimately, learning occur.

**Data Services & GIS**

An integrated service supporting faculty and students engaged in data-centric research (e.g., social science data sets, polling, census, geospatial data, and data archives). Services include consultations, training and assistance with finding and using data, conducting data collection and analysis, using statistical and qualitative software packages, and geographic information systems (GIS). Other assistance offered includes advice on creating funder-mandated data management plans, research data repository services and access to government information and maps.

**Digital Projects Lab**

One of two labs in the Digital Scholarship Center, the Digital Projects Lab is designed, configured and equipped to support and encourage collaborative work on digital research projects.

**Virtual Reference**

Web: library.gmu.edu/ask (http://library.gmu.edu/ask)

This service provides a virtual, real-time, reference service which allows staff to provide reference service to students, faculty and staff remotely.

**Mason Publishing**

Phone: 703-993-3636

Web: library.gmu.edu/masonpublishing (http://library.gmu.edu/masonpublishing)

The Mason Publishing Group provides support and resources to the George Mason University community for creating, curating, and disseminating scholarly, creative, and educational works. Mason Publishing includes a cluster of publishing-related activities such as the George Mason University Press, scholarly communication and copyright, University Dissertation & Thesis Services, Mason’s institutional repository (MARS), electronic journal hosting and publishing, and data publication.

**George Mason University Press**

Phone: 703-993-3636

Web: publishing.gmu.edu/press (https://publishing.gmu.edu/press)

A component of Mason Publishing, the George Mason University Press publishes in a variety of disciplines ranging from literature to public policy. The Press seeks to promote access to scholarly works that concern the university, other area institutions, and the history, politics and culture of the local area.

**Mason Archival Repository Service**

Phone: 703-993-3742

Web: mars.gmu.edu (http://mars.gmu.edu)

Another facet of Mason Publishing, the Mason Archival Repository Service (MARS) serves as an institutional repository and provides a stable digital archive for scholarly and research materials of lasting value held by Special Collections Research Center or produced by Mason faculty, students, and staff. The institutional repository librarian provides expert advice on archiving these materials, file formats, copyright issues, long-term management of archived materials, and issues pertaining to scholarly communication.

**Scholarly Communications and Copyright Resources**

Phone: 703-993-2544 or 2427
Integrated within Mason Publishing, this service provides guidance, assistance, and education on copyright, open access, and scholarly communications issues. Specifically, this office provides assistance with the application of fair use of proprietary content used in classroom teaching, electronic course reserves, online education; student assignments; open access and university publishing and support; and promoting faculty scholarship and collaborations. Workshops and class instruction on these topics and other are available year-round, upon request.

University Dissertation and Thesis Services
Phone: 703-993-2222

A component of Mason Publishing, the University Dissertation and Thesis Service (UDTS) assists students and academic units in the dissertation, thesis, and graduate-level project process by helping students meet all university requirements and deadlines for submission of work. The UDTS web site provides useful tools such as the university’s Thesis, Dissertation, or Project Guide, containing downloadable templates of necessary elements, forms required for the submission process, and links to related web sites. UDTS also assists graduate students through individual consultation and informational workshops.

Special Collections Research Center
Web: scrc.gmu.edu (http://sca.gmu.edu)

Housed in the Fenwick Library in a state-of-the-art space, this unit acquires, documents, preserves, and provides access to primary research collections and documents. Special Collections Research Center’s (SCRC) services, collections and programs support the teaching and research activities of George Mason University and also serve the community at large. With unique print and digitized collections that offer outstanding opportunities for research with original sources, holdings focus on Mason’s academic areas of strength, as well as the development of the Washington-Northern Virginia metro area. The collections – in large part, rare and exceptional materials – encompass broad areas such as: humanities and social sciences; Northern Virginia and regional history; oral histories; politics and government; prints and photographs; Reston, Virginia; science and technology; theater and performing arts; transportation and planning; university archives and history. SCRC houses the university’s records management program and, through its oral history program, undertakes the creation of audiovisual documentary resources.

University Records Management
Phone: 703-993-2201

A part of the Special Collections Research Center, this service assists university academic and administrative departments with retention and disposition of institutional records, both print/physical and digital, in accordance with Virginia state laws, policies, and guidelines. University Records Management offers online guidance, as well as in-person workshops, instruction sessions, and records evaluations to assist faculty and staff. University Records Management maintains an on-site records center where inactive paper records may be stored and university records are properly disposed.
The fifth floor graduate study zone includes Graduate Study Carrels and the Dissertations Writers’ reserved spaces; quiet spots designed to give graduate students a place to pursue their research and writing. A graduate student silent reading room is also available on the fifth floor.

Assistive technologies are available onsite (for individuals with disabilities).

**Gateway Library**
Phone: 703-993-9060

The Gateway Library is part of the George W. Johnson Center integrated learning environment and provides large open study areas and group study rooms that can be scheduled, offering an invigorating alternative study environment. Access is available to all electronic scholarly information held and services provided by the University Libraries. The library’s focus is on instructional services that are designed to improve and enhance undergraduate education fluency and competency with library research skills. Assistive technologies available onsite include screen-reading software, text-enlargement software, and special hardware for individuals with disabilities. The library offers the One-Button Studio to students and faculty allowing them to create, easily, high-quality and polished video projects. This library also partners with a number of academic and academic support units such as: Honors College, Communications department, the Writing Center, INTO Mason, and the Office of Student Scholarship, Creative Activities, and Research (OSCAR) - in designing and delivering related services in support of students’ academic success.

**Arlington Campus Library**
Phone: 703-993-8188

This library is a full-service research facility supporting the teaching and research needs of Mason faculty, students, and staff on the Arlington Campus. Consistent with this campus’ distinct areas of academic specialization at the graduate level, the library’s collection emphasizes public policy, international commerce, economics, management of nonprofit organizations, conflict resolution and arts management. The library has significant research materials holding and is a depository of European Union documents. Intercampus delivery of circulating materials from other library sites is available. Library staff can provide research assistance and instruction for students, faculty, and staff in identifying and using research resources, which continue to grow in breadth and depth. Assistive technologies are available for people with disabilities.

**Mercer Library**
Phone: 703-993-8340

This library supports Mason faculty, students, and staff in the programs and courses offered on the Science and Technology Campus, including applied information technology; biotechnology, bioinformatics, and biodefense; education; environmental sciences and policy; Governor’s School @ Innovation Park; health, fitness and recreation resources; molecular and microbiology; tourism; and visual and performing arts. This library also supports faculty and students in the Smithsonian Mason School of Conservation on the Front Royal Campus.

The library provides access to university-wide electronic resources, with an emphasis on instruction and assistance with information resources and research. The library fosters partnerships to provide information services to the rapidly expanding corporate and technology presence in Prince William County. Assistive technologies for people with disabilities are available.

**Antonin Scalia Law School Library**
Phone: 703-993-8120 (circulation desk)

**Administration**
Deborah M. Keene, Associate Dean, Library and Technology

The law library supports the Antonin Scalia Law School and has a collection of over 476,000 print and microfiche volumes with an emphasis on law and economics, intellectual property, corporate and securities law, regulatory law, and Virginia law. The library also provides access to electronic law resources including LexisNexis, Westlaw, HeinOnline, Index to Legal Periodicals, Bloomberg Law and BNA Premier and is a selective depository for U.S. Government documents. The law library is open to all members of the university community. Most of the collection does not circulate, but many of the books in the treatise collection are available for checkout by all faculty, students, and staff.

**University Scholars Program**

**Honors College**
D205 Buchanan Hall
Phone: 703-993-1110
Website: honorscollege.gmu.edu/admissions/university-scholars

The University Scholars are selected from among the most outstanding students invited to the Honors College. This award is the highest academic distinction that Mason offers to undergraduate students and is given annually to top high school seniors admitted to the university. Each year the University Scholars Program enrolls approximately 20 new first-year students, each of whom receives a scholarship covering the full cost of tuition over four years. Students receiving this award have exemplary records of academic achievement, and they have demonstrated intellectual vision and creativity, the potential to solve problems and overcome obstacles, and a commitment to meaningfully contributing to their communities. Applications must be submitted by November 1 to receive priority consideration for the scholarship.

The University Scholars reside in a common residence hall their first year and share the Dr. Noreen McGuire Prettyman University Scholars Lounge. Students enrolled in the University Scholars Program participate in a dynamic learning community that provides opportunities for intellectual, cultural, and social engagements.
RESEARCH

- Krasnow Institute for Advanced Study
- Mason Impact
- Office of Research
- Office of Student Scholarship, Creative Activities, & Research (OSCAR)
- Research and Scholarship Intensive Courses

Krasnow Institute for Advanced Study

Phone: 703-993-4333
Website: krasnow.gmu.edu

Administration

- Saleet Jafri, Interim Director
- Kenneth De Jong, Associate Director
- Jennifer L. Sturgis, Assistant Director

College Code: KR

The Krasnow Institute for Advanced Study seeks to expand the understanding of mind, brain, and intelligence by conducting research at the intersection of the separate fields of cognitive psychology, neurobiology, and the computer-driven study of artificial intelligence and complex adaptive systems, including social systems. These separate disciplines increasingly overlap and promise progressively deeper insight into human thought processes. The institute also examines how new insights from cognitive science research can be applied for human benefit in the areas of mental health, neurological disease, education, computer design, and social system analysis.

The Krasnow Institute for Advanced Study was chartered in 1990 as a private nonprofit Virginia corporation and merged with Mason in 2002, becoming a chartered institute under the Office of the Provost. The Center for Social Complexity joined the Krasnow Institute in 2005. The institute operates on an annual budget of $7.8 million. Cognitive research at the institute spans from molecules to the mind to social systems. Krasnow scientists have published extensively in the most prestigious scholarly journals and collectively have brought in more than $59 million in sponsored research from federal agencies such as the National Institutes of Health and private sources such as the Sir John Templeton Foundation.

Faculty

Institute Faculty


Office of Research

5205 Merten Hall

Fairfax Campus
Phone: 703-993-2268
Fax: 703-993-8871
Email: research@gmu.edu
Website: research.gmu.edu

Administration

- Deborah Crawford, Vice President for Research

The Office of Research has overall responsibility for the university's research enterprise. Working in an atmosphere characterized by its commitment to generate new knowledge through research and scholarship and to seed and support entrepreneurship and innovation to benefit society, Mason's researchers and scholars conduct their work in an array of disciplines and subject areas. The Office works to promote and optimize the success and impact of these endeavors and to create an environment that sustains the highest standards of ethical research and scholarship.

Office of Student Scholarship, Creative Activities, & Research (OSCAR)

Bethany M. Usher, Associate Provost for Undergraduate Education
228 Johnson Center
Fairfax Campus
Phone: 703-993-3794
Email: MasonUE@gmu.edu
Website: UGE.gmu.edu

Mason Impact

Mason impacts students, and students impact the world!

Mason Impact (https://uge.gmu.edu/mason-impact) is George Mason University's commitment to offer every student transformative learning experiences. Mason Impact offers high-impact opportunities to all students, designed to develop problem-solving, critical thinking, and communication skills, and preparing them to make a real impact in the world. Mason Impact is grounded in a strong education that explores how knowledge is created and used, investigates local and global challenges from multiple perspectives, and helps students develop relevant questions. Mason Impact Projects allow students to use inquiry methods to answer their questions and learn to communicate their results. These experiences are transformative; students are introduced to a more complicated and interesting world in which they can have an impact. Mason Impact offers experiences and projects in Global Education (http://studyabroad.gmu.edu), Civic Engagement (https://sail.gmu.edu), Research (p. 120), and Entrepreneurship (https://www.mix.gmu.edu). Students who successfully complete Mason Impact projects and/or participate in study abroad earn special transcript notations highlighting their experiences.
Office of Student Scholarship, Creative Activities, & Research (OSCAR)
The Office of Student Scholarship, Creative Activities, and Research (OSCAR) is home to Mason's award-winning undergraduate research program, connecting undergraduate students and faculty through course-based, co-curricular, and independent scholarly projects. Undergraduate research is a featured Mason Impact (https://uge.gmu.edu/mason-impact) experience.

OSCAR offers several programs that make scholarship central to the undergraduate experience at Mason, by:

- Helping undergraduates find faculty mentors
- Funding undergraduate research and creative projects through the Undergraduate Research Scholars Program and Summer Team Impact Opportunities
- Providing funding for travel to conferences through the Undergraduate Student Travel Fund
- Supporting Research, Scholarship Intensive Courses and Mason Impact (https://uge.gmu.edu/mason-impact) Courses
- Hosting the annual Celebration of Student Scholarship and Impact
- Offering OSCAR Federal Work Study Research Assistantships

Please visit our website (http://oscar.gmu.edu) for more information.

Research and Scholarship Intensive Courses

Office of Student Scholarship, Creative Activities, & Research (OSCAR)

246 Johnson Center
Fairfax Campus

Phone: 703-993-3794
Email: oscar@gmu.edu
Website: oscar.gmu.edu

These courses give students an authentic research or creative experience as part of the Mason Impact (masonimpact.gmu.edu (https://uge.gmu.edu/mason-impact)). In Research and Scholarship (RS) Intensive courses, students and faculty have a unique opportunity to partner as they merge teaching with the creation of new knowledge. By participating in one of these classes, students are actively involved in a project that is the central focus of the class. Students help define the project, take responsibility for carrying it out, and present the results to a broader audience. These classes are identified on student transcripts with an RS designation.

RS Courses

The following courses have been designated Research and Scholarship intensive (RS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 440</td>
<td>RS: Advanced Studies in Renaissance and Baroque Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 460</td>
<td>RS: Advanced Studies in 20th-Century European Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 472</td>
<td>RS: Advanced Studies in 20th-Century Latin American Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
<td>3</td>
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<tr>
<td>ARTH 495</td>
<td>RS: Objects and Archives in Art History</td>
<td>3</td>
</tr>
<tr>
<td>ASTR 402</td>
<td>RS: Methods of Observational Astronomy (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>AVT 483</td>
<td>RS: Art and Interactivity</td>
<td>3</td>
</tr>
<tr>
<td>BENG 395</td>
<td>RS: Mentored Research in Bioengineering</td>
<td>1-3</td>
</tr>
<tr>
<td>BENG 493</td>
<td>RS: Senior Advanced Design Project II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 379</td>
<td>RS: Ecological Sustainability (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 499</td>
<td>RS: Research in Biology</td>
<td>6-9</td>
</tr>
<tr>
<td>BIS 490</td>
<td>RS: Senior Project (Mason Core)</td>
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</tr>
<tr>
<td>CHEM 439</td>
<td>RS: Atmospheric Chemistry II: Air Analysis Techniques</td>
<td>3</td>
</tr>
<tr>
<td>COMM 491</td>
<td>RS: Honors Research Project in Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 498</td>
<td>RS: Research Projects in Communication</td>
<td>3</td>
</tr>
<tr>
<td>CONF 490</td>
<td>RS: Integration (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>CONS 490</td>
<td>RS: Integrated Conservation Strategies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONS 491</td>
<td>RS: Conservation Management Planning (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>COS 401</td>
<td>RS: Discipline Based Education Research</td>
<td>2-3</td>
</tr>
<tr>
<td>CRIM 492</td>
<td>RS: Honors Seminar II</td>
<td>3</td>
</tr>
<tr>
<td>DANC 362</td>
<td>RS: Directed Choreography</td>
<td>1</td>
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<tr>
<td>ECE 493</td>
<td>RS: Senior Advanced Design Project II (Mason Core) (p. 142)</td>
<td>2</td>
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<tr>
<td>ECON 495</td>
<td>RS: Honors Thesis in Economics</td>
<td>3-6</td>
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<tr>
<td>ENGH 401</td>
<td>RS: Honors Thesis Writing Seminar (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 417</td>
<td>RS: Topics in Folklore Research (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 458</td>
<td>RS: Topics in Literary Research (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ENGH 470</td>
<td>RS: Topics in Film/Media History (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ENGH 484</td>
<td>RS: Writing Ethnography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 486</td>
<td>RS: Writing Nonfiction for Publication (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 378</td>
<td>RS: Ecological Sustainability (Mason Core) (p. 142)</td>
<td>4</td>
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<tr>
<td>FNAN 498</td>
<td>RS: Contemporary Topics in Finance</td>
<td>3</td>
</tr>
<tr>
<td>GAME 332</td>
<td>RS: Story Design for Computer Games</td>
<td>3</td>
</tr>
<tr>
<td>GGS 463</td>
<td>RS: Applied Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>HHS 492</td>
<td>RS: Internship in Clinical Research</td>
<td>3</td>
</tr>
<tr>
<td>HIST 499</td>
<td>RS: Senior Seminar in History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>LING 480</td>
<td>First Language Acquisition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 406</td>
<td>RS: Honors Thesis in Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 481</td>
<td>RS: Marketing in the Nonprofit Sector</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 489</td>
<td>Music Technology Capstone</td>
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</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>MUSI 490</td>
<td>RS: Musical Communication in Context (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 405</td>
<td>RS: Laboratory Methods in Behavioral Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 406</td>
<td>Zebrafish Neurodevelopment Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 492</td>
<td>RS: Psychology Honors III</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 490</td>
<td>RS: Clinical Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 481</td>
<td>RS: Honors Seminar in Sociology II</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 485</td>
<td>RS: Sociological Analysis and Practice (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 472</td>
<td>RS: Integrative Methods in Social Action and Social Change (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 491</td>
<td>RS: Students as Scholars Individualized Scholarly Experience</td>
<td>0-9</td>
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<tr>
<td>UNIV 495</td>
<td>RS: Undergraduate Research Scholars Program Seminar</td>
<td>0-1</td>
</tr>
<tr>
<td>UNIV 496</td>
<td>RS: Undergraduate Research Scholars Program Continuation</td>
<td>0</td>
</tr>
<tr>
<td>WMST 411</td>
<td>RS: Feminist Research Practice</td>
<td>3</td>
</tr>
</tbody>
</table>
Tuition & Fees

Office of Student Accounts

4400 University Drive, MS 2E2
Fairfax, VA 22030

Phone: 703-993-2484
Fax: 703-993-2490
Website: studentaccounts.gmu.edu

General Guidelines

- Students are responsible for maintaining a current mailing address in their student record on Patriot Web (https://patriotweb.gmu.edu), and for activating and checking their George Mason University e-mail accounts to receive official university communications.
- All students are required to accept George Mason University’s Student Financial Responsibility Agreement prior to registering for classes each semester. The agreement outlines financial terms and conditions associated with course registration. Students are responsible for withdrawing from all classes that they do not intend to complete by the deadlines listed in the Semester Calendar. Students must confirm withdrawals and class drops, and full or partial liability may apply. George Mason University does not cancel classes for nonpayment or nonattendance.
- Refer to the Payment Schedule and the Semester Calendar on the Student Accounts Office web site for payment due dates and tuition penalties for dropping classes after the start of the semester. Classes that do not meet for the full semester have non-standard liability deadlines, which can be found on the part-of-term chart of the Semester Calendar.
- Payments are due in the Cashier’s Office, Student Union Building I, Room 1501, on or before 4:30 p.m. on due dates, regardless of postmark if mailed. Check and credit card payments made through the Bill and Payment System must be completed by 10:30 p.m., to be considered in that day’s business. Bills are provided electronically only, approximately thirty (30) days prior to the semester start to students and authorized payers. Bills are not provided for individual class registration and schedule adjustments. Students must check Patriot Web for balance due, verify registration, and pay through the Bill and Payment System or at the Cashier’s Office by the due date. Failure to receive a reminder bill confirming charges does not waive the requirement for payment when due.
- Students who have not completed the financial aid process must be prepared to pay for their courses by the tuition due date or a late payment fee will be charged. The amount of financial aid accepted and processed will be reflected in your account balance. If the amount of aid awarded is less than the charges, the difference must be paid by the tuition due date. Federal work-study awards cannot be deducted from your balance. Financial aid recipients must also notify their financial aid counselor if they drop courses below the minimum required credits for their financial aid award. Class registrations or schedule adjustments after financial aid has disbursed may result in a balance due. Students are responsible for checking their balance after all schedule adjustments.
- Out-of-state students with pending domicile requests are responsible for payment at the out-of-state rate. Students who are later determined to be in-state can request reimbursement for the difference in tuition rates.
- Non-returning students are responsible for withdrawing from their courses for the semester and ensuring they do not have an outstanding balance on their account. Any documentation or intent made to university departments that you are not returning does not withdraw you from the registered courses.
- Some Mason degree programs include academic credits that students must earn at other academic institutions. Students enrolling for such credits assume all financial responsibility with the other institutions.

Semester Tuition Charges and Related Fees

Approved tuition rates and fees are available June 1. For more information, call the Student Accounts Office at 703-993-2484 or go online (https://studentaccounts.gmu.edu). Students are charged tuition rates for registered courses according to their academic level and program; graduate rates vary by academic program.

Please Note: Many courses require additional course fees and/or lab fees. Refer to the Student Accounts Office website (https://studentaccounts.gmu.edu/tuition) for up-to-date course fee information.

New Student Fees

All new degree seeking students pay a New Student Fee. The fee is a mandatory, nonrefundable, one-time charge that is assessed when a new student registers for classes, regardless of orientation attendance or future enrollment status. The current fee amount is listed on the Student Accounts Office website (https://studentaccounts.gmu.edu).

Mandatory Student Fee

This is a mandatory fee based on credit enrollment. The Mandatory Student Fee supports the maintenance of facilities and buildings, auxiliary services, intercollegiate athletics, campus shuttle, academic services, student activities, and health services.

Payment Information

Payment Deadline

Payment is due the first day of the semester. Payments received at the Cashier’s Office by 4:30 p.m. Monday to Friday will be considered in that day’s business. Check and credit card payments made through the Bill and Payment system must be completed by 10:30 p.m. to be considered in that day’s business. To confirm receipt of payment and balance due on account, go to Patriot Web (https://patriotweb.gmu.edu).

Methods of Payment

Cash

In person at Cashier’s window only, Cashier’s Office, SUB I, Room 1501

Check

Online, in person, mail or drop box. Make check payable to George Mason University, with student ID number written on front. Third-party checks are not accepted. Checks must be payable in U.S. dollars. A $50 return check fee will be charged for checks returned unpaid by the bank for any reason.
Credit Card  
Online only. Visa, MasterCard, American Express or Discover Card. There is a 2.85 percent convenience fee for credit card payments, which is nonrefundable. A $50 returned item fee will be charged for credit or debit card reversals (charge-backs).

Delivery Methods  
Online  
Bill and Payment system, on-line checks or credit cards

Window  
Cashier’s Office, SUB I, Room 1501, Monday through Friday 9 a.m. to 4:30 p.m.

Drop Box (no cash payments)  
Adjacent to Cashier’s Office, SUB I, hallway outside Room 1501

U.S. Mail  
George Mason University, Cashier’s Office, 4400 University Drive, MS 2E1, Fairfax, VA 22030. Allow 10 business days for delivery by the due date, and postmarks are not considered a receipt of payment.

Semester Payment Plan  
Mason payment plans are available on-line only. The preferred payment method for payment plans is the on-line/electronic check option, which does not charge a convenience fee. The following plans are available for students who need to budget their accounts.

The Summer term offers a two payment plan only. The plan begins with a down payment of 50% and the $25 contract fee, and defers the second payment until mid-June.

Deferred tuition options in Fall and Spring are available through two, three and four payment plans. Important deadlines must be followed to take advantage of the four payment plan, which allows students to pay in four installments - beginning in July for Fall and December for Spring. The two and three payment plan options begin any time prior to the due date for the semester. All plans require a down payment, which is the first payment plus the $25 contract fee. For more information, call the Student Accounts Office at 703-993-2484 or go online (https://studentaccounts.gmu.edu).

Failure to pay the deferred balance by the due date will result in a financial hold, a late fee of 10% (up to $125), collection activity, and may prevent future eligibility of the payment plan.

Third-Party Billing Authorizations  
Students using a third-party billing authorization will be charged a $25 processing fee. Students may receive an individual billing statement. Students must provide the third-party authorization or government training voucher to the Student Accounts Office, or fax it to 703-993-2460 before the student’s individual due date, which is based on their registration date. Check “Calendars” on the web site for the deadline to submit third party payment authorizations. Students are responsible for any payment default by the sponsoring agency. Call 703-993-2484 for a copy of third-party billing requirements, or check online (http://studentaccounts.gmu.edu/third-party-billing-office).

Penalties  
A late registration fee of $125 is automatically assessed to students who add their first class on the first day of the semester or after. It does not apply to students already enrolled prior to the start of the semester who make schedule adjustments. Wait-listed classes are not considered class registration. Late registration fees are nonrefundable and will not be removed, regardless of enrollment status.

Any class registration after the deadline to add classes, if approved by the academic department, is subject to a $125 late registration fee. Late class registrations require an account in good standing and prepayment of all charges.

Past due balances are subject to a late payment fee that is 10 percent of the balance due, up to $125.

Registrations will not be canceled for nonpayment or nonattendance. Students must withdraw from all classes that they do not plan to complete by the payment due date to avoid the late payment fee on those classes.

Returned Checks  
Per Commonwealth of Virginia statute, the return item fee is $50. Repeat returned payments may result in the restriction of the online payment option for future semesters. Payments for past due balances and/or to release holds for registration that are later returned unpaid by a financial institution may result in the immediate suspension of services and the cancellation of classes. Returned checks that create a balance will be sent a written or electronic notice, and a financial hold will be placed on the account until the balance is paid in full. Certified fund payments such as cash or cashier’s check are required for immediate hold release. Waiting periods will apply for other payment methods.

Financial Good Standing; No Holds on Record  
Financial good standing and a university record clear of holds are required for students to receive services. Services, including but not limited to transcript issuance, diploma release, class registration (add, drop, withdrawal, etc.), and/or housing and meal plans will not be provided to students with a financial balance due or a hold of any kind on their record. Holds are based on outstanding obligations and may be financial. Examples include unpaid Student Health charges, fines owed to the Mason or Washington Research Library Consortium libraries, parking and other administrative holds.

Students in noncompliance with payment deadlines as of the end of the semester will be required to submit a financial guarantee or prepayment prior to future registration. The return of the prepayment by a financial institution will result in the immediate suspension of services.

Collections  
Failure to meet financial obligations to the university will result in other collection procedures, which include account referral to credit reporting bureaus, private collection agencies, the Commonwealth of Virginia Department of Taxation, and the Office of the Attorney General. Past due accounts are subject to garnishments, liens, and judgments and the withholding of money from tax refunds. In addition to late fees and interest, delinquent accounts will be assessed additional collection costs up to thirty percent of the past due balance, reasonable attorney fees, and other administrative costs. Once an account is referred to a collection agency payment must be made to the agency, not the University.

Course Withdrawals  
Students are required to pay full or partial tuition for courses they withdraw from after the last day to drop with full tuition refund, including withdrawals to change from one section of a course to another section. For more information, see the tuition liability dates in the Semester Calendar.
Refund Policies

Direct Deposit Refunds
Students may sign up for direct deposit for expedited refunds by completing the form located on the Student Accounts Office website. Direct deposit refunds are sent electronically to the student's bank account. Direct deposit refunds are not available for Parent PLUS loans.

Refund for Credit Balances
In cases where tuition charges are less than the payments on the student's account, a refund of the overpayment may be requested. To initiate the refund process, a Refund Request form is completed and submitted to the Student Accounts Office. Credit balances are also reviewed and refunds processed throughout the semester, regardless of refund request forms. NOTE: Students should not overpay accounts with an expectation a credit balance will pay for future semester charges.

Refunds will be processed according to the last method of payment received:

- Cash or Flywire payments are sent via direct deposit or check.
- Payments made by check require a seven day waiting period. The waiting period may be waived if proof of check clearance is presented, such as a canceled check copy or bank statement showing that the check cleared the account.
- Credit card payments are credited back to the credit card that was most recently used for payment.

Note: Check refunds may take up to four weeks for processing and mail delivery. Refund checks are made payable to the student and are mailed to the address listed in the student record. In person check pick up is not available.

Financial Aid Refunds
Credit balances from financial aid awards will automatically generate a refund, which will be sent via direct deposit if authorized by the student. A refund request form is not needed for financial aid disbursement refunds except in cases of schedule adjustments after aid has been posted. Students who do not opt for direct deposit will receive check refunds mailed to the address on file in their student record, which require additional processing time.

Special Registration
Students not enrolled in a credit-bearing course, but whose academic department certifies that they are pursuing an activity related to Mason matriculation, can retain active status by having the Office of the University Registrar process a registration for the Special Registration course (ZREG 200). A $45 fee is charged for this course, and students must pay this fee before the University Registrar’s office will process the registration. Written approval of the student’s academic department chair is required. This special registration allows students to retain their library and computer privileges, receive a student ID, and buy a parking decal. Students must have active status to apply for or receive a degree, take an exam, or participate in cooperative education. Students pursuing a master's or doctoral degree must maintain continuous enrollment. For more information, see AP6 Graduate Policies (p. 90).

International Student Health Insurance
Health insurance is required for all F-1 and J-1 visa holders, and nonpayment may result in class cancellation. The health insurance fee is deducted from all payments received by the university before funds are applied to tuition or other charges. For more information, refer to the Admission of International Students section.

Music Instruction
Private music instruction is arranged through the School of Music on a fee-paying basis. Refer to the Student Accounts Office web site for up to date fee information. This fee is non-refundable.

In-State Tuition
To be eligible for in-state tuition, a student must have been domiciled in Virginia for at least one full year before the semester for which in-state tuition is sought, or qualify through statutory exception. A person establishes domicile by demonstrating physical presence and the intention to remain indefinitely in accordance with the Code of Virginia and the domicile guidelines. Copies of the guidelines and other applicable state laws are available from the Office of the University Registrar (https://registrar.gmu.edu/students/domicile).

Domicile Change
Domicile classification is determined at the time of a student’s admission. To be considered for in-state status when applying to the university, students must file an application for in-state rates.

New and currently enrolled students classified as out-of-state who believe they qualify for in-state tuition after being admitted must file a domicile appeal form with the Office of the University Registrar no later than the first day of classes for the semester in which in-state rates are sought. Appeal forms are available from the Office of the University Registrar (https://registrar.gmu.edu/students/domicile).

Students whose appeals are denied have the right to seek further review of their status by the Office of the University Registrar or the Domicile and Tuition Classification Appeals Committee. These requests must be filed in the manner articulated in denial letters. Forms are available from the Office of the University Registrar and the web site. In addition, students should be aware that university procedures for appealing domicile decisions have been established pursuant to state law and are subject to change. Out-of-state students with an appeal pending at the time of tuition billing are responsible for payment of tuition at that rate. Students subsequently determined to be in-state may request reimbursement of overpayment from the Office of Student Accounts. Also, any student who fraudulently or knowingly provides false information in an attempt to evade payment of out-of-state tuition will be charged out-of-state tuition for each term or semester attended and may be subject to dismissal from the institution.

For more information regarding in-state eligibility, contact the Domicile Appeals Administration in the Office of the University Registrar in Student Union Building I, Suite 2101; phone: 703-993-2464; e-mail: domicile@gmu.edu.

Tuition Surcharge: 125 Percent of Degree
Undergraduate students who have established Virginia domicile and eligibility for in-state tuition will be subject to a surcharge if they exceed 125 percent of the credits required to complete a degree. The surcharge will be determined by the State Council for Higher Education in Virginia.

The following courses and credit hours shall be excluded in calculating the 125 percent credit threshold: remedial courses; transfer credits from another college or university that do not meet degree requirements for Mason Core courses or the student's chosen program of study; advanced
placement or international baccalaureate credits that were obtained while in high school or another secondary school program; and dual enrollment, college-level credits obtained by the student prior to receiving a high school diploma.

**Expenses**

**Housing**

Housing and Residence Life  
Ground floor of Potomac Heights  
Phone: 703-993-2720 (General Housing Number)  
703-993-2796 (Main Office Housing Number)  
Web: housing.gmu.edu (http://housing.gmu.edu)

The university offers a variety of housing options to meet the diverse needs of students living on campus. Upper-class students may choose from suites, suites with kitchens, and townhouses. Most freshmen live in traditional-style residence hall rooms that accommodate two, three, and four students. Room rates are subject to approval on an annual basis by the Board of Visitors. Rates for the 2019–20 academic year should be available on or before May 1, 2019. Please refer to the Housing and Residence Life web site for rate information. All students in housing must provide a prepayment, which is credited back to the student in the fall. Housing assignments, including single rooms, are made on a priority and space-available basis. The web site provides extensive information about housing programs and services and includes floor plans for most student rooms.

Students living on campus are required to sign an academic year agreement. Releases from the agreement are generally granted only in cases of hardship and involve a financial penalty. For more information, contact Housing and Residence Life.

Living Learning Communities (LLCs) are collaborative partnerships between academic departments, individual Mason faculty, housing and residence life staff, and the division of University Life. For more information, please visit the housing website (https://housing.gmu.edu/llc).

**Mason Dining**

Mason Dining  
Southside Dining Hall, First Floor  
Phone: 703-993-3300  
Web: dining.gmu.edu (http://dining.gmu.edu)

Mason Dining is proud to serve the Mason community with over 36 restaurants, kiosks and carts among the Arlington, Fairfax, and Science and Technology campuses. Southside and Ike’s, located on the Fairfax campus, offers extensive menus with the highest quality ingredients and seasonal produce. Mason Dining is committed to nutrition, wellness, and sustainability.

**Meal Plans and Mason Money**

Meal Plan & Mason Money Office  
Student Union I, Room 1203  
Phone: 703-993-2870  
Web: mealplans.gmu.edu (http://mealplans.gmu.edu) or masonmoney.gmu.edu (http://masonmoney.gmu.edu)

Both resident meal plans and optional Patriot meal plans are available for students to purchase. These plans allow for tax-exempt dining and are billed to the student account. Most students living on campus are required to participate in the resident meal plan program. Meal plan policies and prices are available on the website (http://mealplans.gmu.edu).

Mason Money can be accessed with the Mason ID. It’s accepted at various venues on campus and also with participating merchants off campus. Funds can be deposited online (http://masonmoneyonline.gmu.edu), at any of the 9 Mason Money Stations located among three campuses, or the Mason Money office.

**Parking Services**

Fairfax Campus, Sandy Creek Parking Office  
Phone: 703-993-2710

Arlington Campus, 219 Founders Hall  
Phone: 703-993-8146

Science and Technology Campus, 112 Occoquan Building Office  
Phone: 703-993-4808  
Web: parking.gmu.edu (http://parking.gmu.edu)

Students who park their vehicles on university property must register them with Parking Services and pay a fee for a parking permit. Permits are available on an annual, semester, or summer basis. For permit sales, fine payments, special requests, or problems, go to any Parking Services Office. Most services are available on-line (http://parking.gmu.edu). The Fairfax Campus Sandy Creek Parking Office hours are 8:30 a.m. to 7 p.m. Monday through Thursday and 8:30 a.m. to 5 p.m. on Friday. See the website (http://parking.gmu.edu) for current information and rates.

**Financial Aid**

**Office of Student Financial Aid**

Student Union Building (SUB) I, First Floor  
Phone: 703-993-2353  
Fax: 703-993-2350  
Email: finaid@gmu.edu  
Website: financialaid.gmu.edu

The Office of Student Financial Aid provides a variety of services to help students finance their education; including, financial aid advising, exploring funding resources, and financial assistance. Student financial aid awards may consist of grants, scholarships, work-study, and loans. Awards are based primarily on financial need, although there are some alternative financial aid sources available for those who may not qualify for need-based financial assistance.

The Office has a comprehensive listing of various scholarship opportunities for students to research on the Office of Student Financial Aid’s website. Students are encouraged to review the scholarship information often due to the listings being updated continuously and apply early in order to meet deadlines.

The Office is open 9:00 a.m. to 5:00 p.m., Monday through Friday. Financial Aid Counselors are available daily by phone, e-mail or personal appointment. Students can view the list of Counselors on the Office’s website.
Each year, to apply for financial aid, both new and currently enrolled students must complete a Free Application for Federal Student Aid (FAFSA). George Mason University’s Federal Title IV school code for the FAFSA is 003749. Priority consideration for all sources of financial aid is given to those students whose financial aid applications and all required verification documents are on file with the Office of Student Financial Aid by January 15. To meet this priority filing date, students should file the FAFSA as soon as possible after October 1st of the previous year (e.g. October 2018 for the 19-20 academic year). The FAFSA is filed online (http://www.fafsa.gov).

Financial aid for summer is generally limited to students who have remaining Federal Loan eligibility for the year, or who are eligible for Federal Pell Grant. Summer is considered a "trailer" term at the university. Contact the Office of Student Financial Aid for specifics regarding eligibility.

Financial Aid Programs

The University administers the following federal, state, and other aid programs:

Federal Programs

These include the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (FSEOG), Federal Work-Study (FWS), Federal Subsidized Direct Loans, Federal Unsubsidized Direct Loans, Federal PLUS Loans for parents of dependent students (DPLUS) and Federal Grad PLUS Loans for Graduate students (DGPLUS). For more information, go to the Office of Student Financial Aid home page (http://financialaid.gmu.edu).

State Financial Aid Programs for Undergraduate Virginia Residents

Eligibility for all state programs is determined based on the student's FAFSA and financial need. State grant funds are limited, so adherence to the January 15 priority filing date is critical.

Virginia Commonwealth Award

This program is open to undergraduate students who have demonstrated financial need, are enrolled at least half-time, and are domiciliary residents of Virginia.

Virginia Guaranteed Assistance Program (VGAP)

This program is a component of the Virginia Commonwealth Award Program that is open to students who have demonstrated academic achievement in high school and have graduated from a Virginia high school. VGAP awards are renewable for up to four years. Students must advance a grade level before receiving a subsequent VGAP award. Students must be enrolled full-time to receive VGAP.

Graduate Student Assistance

Assistantships, fellowships, and scholarships exclusive of the federal financial aid programs identified earlier are administered by the individual graduate programs. Students interested in pursuing graduate assistantships, fellowships, or scholarships should contact their graduate program directly.

All financial aid recipients are responsible for becoming familiar and complying with applicable federal and state regulations, and university policies.

All students receiving financial aid must be enrolled in an eligible degree or certificate program; maintain satisfactory academic progress (SAP) as defined by the Office of Student Financial Aid in accordance with federal guidelines (see below); be a U.S. citizen or eligible non-citizen as defined by the U.S. Department of Education and all male students must be registered with Selective Service.

Satisfactory Academic Progress (SAP) Standards

Federal legislation governing the administration of federal programs requires colleges and universities to define and enforce standards of academic progress for students receiving or applying for financial aid. To comply with this legislation, the Office of Student Financial Aid has established a formal satisfactory academic progress policy. For detailed information, go to the Office of Student Financial Aid home page (http://financialaid.gmu.edu) or contact the Office of Student Financial Aid directly.

Return of Title IV Funds

The Office of Student Financial Aid is required by federal law to re-calculate federal financial aid eligibility for students who completely withdraw from all classes, drop out, are dismissed, or take a leave of absence prior to completing a payment period or term. According to the regulations, the amount of Federal Title IV awarded to a student must be re-calculated in these situations and any portion of the financial aid received that is considered to be "unearned" must be returned to the Title IV Program(s) from which it was received. Any student considering dropping or withdrawing from all courses, should contact their assigned Financial Aid Counselor immediately regarding possible adjustments to their financial aid.

Emergency Loan Programs

George Mason University has established an emergency loan account funded by the Gerson Trust.

This emergency loan is designed for enrolled students that encounter unexpected emergencies and is not meant to pay for tuition and fees. This is a short-term, interest free loan and students may borrow up to $1000. Repayment is due in 90 days. Applications may be obtained from the Office of Student Financial Aid.

Certificate Programs that Qualify for Financial Aid (Gainful Employment)

For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit the University’s disclosure information website (https://ir2.gmu.edu/gedt).

The qualifying certificate programs include:

- Accounting Undergraduate Certificate (p. 896)
- Advanced Biomedical Sciences Graduate Certificate (p. 618)
- Applied Behavior Analysis Graduate Certificate (p. 163)
- Autism Spectrum Disorders Graduate Certificate (p. 164)
- Business Analytics Graduate Certificate (p. 900)
- College Teaching Graduate Certificate (p. 540)
- Early Childhood Education PK-3 Concentration within the Curriculum and Instruction Graduate Certificate (p. 187)
- Early Childhood Special Education Concentration within the Special Education Graduate Certificate (p. 218)
• Forensics Graduate Certificate (p. 780)
• Geospatial Intelligence Graduate Certificate (p. 739)
• Higher Education Administration Graduate Certificate (p. 540)
• Nutrition Graduate Certificate (p. 273)
• Secondary Education Licensure Concentration within the Curriculum and Instruction Graduate Certificate (p. 187)
• Adapted Curriculum Concentration within the Special Education Graduate Certificate (p. 218)
• General Curriculum Concentration within the Special Education Graduate Certificate (p. 218)
• Teaching English as a Second Language Graduate Certificate (p. 390)
Distance Education

Distance or online education provides students with the opportunity to take the same classes offered on campus through different delivery methods. Any currently enrolled Mason student can take an online course. There is no separate application process. Registration and financial aid work in the same way for online and face-to-face courses.

Many distance education courses may be completed at home, while stationed abroad, or when traveling. For students who work, intern, commute, or even live on campus, online courses offer an active and collaborative learning environment while allowing for greater scheduling flexibility.

Online Courses

Hundreds of undergraduate and graduate courses are offered online each semester, including summer. Classes are delivered as fully (100%) online or hybrid online (51-99% of scheduled class time is online). Course interactions can take place synchronously (same time, different locations) or asynchronously (different times, different locations).

Mason Core: For undergraduate students, Mason offers online course options for most Mason Core requirements [excluding ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) and Synthesis/Capstone]. Offerings vary by semester. Contact your advisor each semester to plan your course schedule.

For a full list of online courses, see the website (http://masononline.gmu.edu/programs-courses/courses).

Online Programs

Mason currently offers over 50 fully online or hybrid programs, including bachelor’s degrees, master’s degrees, graduate certificates, and undergraduate certificates and minors.

For a full list of online programs, visit the website. (http://masononline.gmu.edu/programs-courses/all-programs)
INTERNATIONAL PROGRAMS AND RESOURCES

Global Education Office
Johnson Center, Room 235
Phone: 703-993-2154
Fax: 703-993-2153
Web: http://www.gmu.edu/depts/cge/
E-mail: GoAbroad@gmu.edu

Administration
Brian Gibson, Director

The Global Education Office offers students the opportunity to develop critical and creative skills and challenge their assumptions about themselves and other cultures in an educational environment by offering study abroad programs of varying lengths, academic emphases, and locations. Through study abroad, students discover new cultures, sharpen language skills, and travel while earning credit. Study options include faculty-led, short-term courses and intensive language programs; semester and year-long Mason-sponsored programs; and international internship programs. Most programs are open to Mason undergraduate and graduate students and short-term programs are also open to faculty, staff, and the general public.

The Global Education Office also offers a wealth of resources to help students create a personalized international educational experience, including general advising sessions about study abroad and internship options; one-on-one student advising; transfer of approved international program credits; a resource library of travel books; international and diplomatic community programming, and advising to international students from partner schools.

George Mason University Korea
119 Songdo Munhwa-ro
Yeonsu-gu, Incheon
Korea 406-840
Phone: +82 32-626-1802
Fax: +82 32-626-5000
Web: masonkorea.gmu.edu (http://masonkorea.gmu.edu)
Email: songdo@gmu.edu

Administration
Dr. Robert Matz, Campus Dean
Dr. John Crist, Associate Dean, Academic Affairs
Gbemi Disu, Chief Business Officer
Yorgun Marcel, Associate Dean, Student Affairs
Kelley E. Chung, Director, Admissions and Enrollment

To enhance Mason’s global presence and increase accessibility to its academic programs, the university offers opportunities in Songdo, South Korea on the Incheon Global Campus.

George Mason University Korea (Mason Korea), which opened in March 2014, offers bachelor degree programs in economics, global affairs, computer game design, conflict analysis & resolution, management, finance and accounting. At the graduate level, Mason Korea offers the Masters of Education in Curriculum and Instruction specialization in IB/ESOL. Academic program requirements and standards are identical with those on the US campuses. Students based Mason Korea travel to the Fairfax campus for their 6th and 7th semesters. Opportunities for US-based students to study at Mason Korea are in place.

Office of International Programs and Services
Student Union I, Suite 4300
Phone: 703-993-2970
Fax: 703-993-2966
Web: oips.gmu.edu (http://oips.gmu.edu)

Administration
Judith A. vanBever-Green, MEd, Executive Director

The Office of International Programs and Services (OIPS) provides services on both regulatory and cultural topics. Staff members provide regulatory information related to non-immigrant status and have been designated by the university to issue and sign immigration documents and paperwork on behalf of the institution. OIPS advisors are available at scheduled walk-in times and by appointment to discuss any concern and to provide practical assistance to students and scholars as they adjust to U.S. culture. OIPS conducts a comprehensive orientation program for new international students and offers social and cultural programming throughout the fall and spring semesters. Most notably, the staff and student volunteers work to internationalize campus life for all members of the Mason community through programs and outreach designed to connect people from different global cultures with one another for meaningful dialogue and cultural learning.

INTO George Mason University and the Mason Global Center
Mason Global Center
Phone: 703-993-4501
Fax: 703-993-4502
E-mail: INTOmason@gmu.edu (INTO@gmu.edu)

Building on a thirty-two year tradition of excellence in English language and language-supported education at Mason, the INTO George Mason University joint venture was established in 2014. This venture marks the fifth INTO University Partnership in the United States.

Located in the new Mason Global Center, Mason offers academic International Year One, Pathways and English language development programs (p. 130) administered by the Academic Division of the INTO Mason joint venture. Personalized support tailored to international students’ educational, social and cultural needs prepares them to progress with confidence as degree-seeking students. INTO Mason provides international students with learning experiences and services that promote academic, professional and personal success. International Year One and Pathways programs are available to students interested in studying in a wide range of degree programs at both the graduate and undergraduate levels. An Academic English program is available to students looking to develop their language proficiency on a short term basis or as they complete the application process for a pathway or direct admission. All of the innovative International Year One, Pathways and English language programs (p. 130) offered at INTO Mason are delivered by highly qualified university faculty.
INTO Mason
Phone: 703-993-4501
Fax: 703-993-4502
Email: INTOmason@gmu.edu
Website: www.intostudy.com/mason

Administration
• Todd Rose, Ph.D., Executive Director
• Nicole Harris-Sealey, Ph.D., Academic Director

INTO George Mason University and the Mason Global Center
Our Mission
As an integral member of the George Mason University Community, INTO Mason creates vibrant experiences for international students through transformational learning opportunities tailored to meet specific linguistic, academic and cultural needs.

Overview
Located in the Mason Global Center, INTO Mason supports the outstanding academic programs offered by the university with
• a welcoming, interconnected community of students from across the U.S. and the world;
• strong student support programs; and
• state-of-the-art facilities with technology-assisted learning.

The innovative International Year One, Pathways and Academic English language programs offered at the Center are delivered by highly qualified Mason teaching faculty. INTO Mason also provides a breadth of academic preparation and support services designed specifically to meet the unique needs of its international students.

Academic Programs, Services & Administration
George Mason University offers academic International Year One and Pathways programs at the Fairfax, Arlington, and Songdo campuses as well as English Language programs based in Fairfax. All programs are administered through the Academic Division of INTO Mason, which functions as the academic department for English Language studies and services university-wide—reporting directly to the University Provost through the Academic Innovations and New Ventures unit.

Academic Programs
There are three standing academic programs administered through the Academic Division of the INTO Mason joint venture:
• Undergraduate International Year One Program (p. 131)
• Graduate International Pathways Program (p. 136)
• Academic English Program (p. 139)

Each program has a specific curriculum and guidelines as indicated in the special sections for each program in the catalog.

Academic Advising and Services
Personalized support tailored to international students’ educational, social, and cultural needs prepares them to progress with confidence as degree-seeking students. Programs operating through INTO Mason at the US-based campuses, also provide international students with learning experiences and services that promote academic, professional, and personal success.

Academic Administration
• Karyn E. Kessler, Ph.D., Academic Director (Interim)
• Bonnie Sylwester, Ph.D., Assistant Director, Academic Initiatives and Assessment
• James Jones, Assistant Director, Advising & Academic Services
• Benjamin Elwood, Program Manager, Academic English
• Christina Brady, Program Manager, Undergraduate International Year One
• Steven Harris-Scott, Ph.D., Program Manager, Graduate International Pathways
• Kathy Rossell, Learning Resource Center Coordinator

Faculty
Highly qualified, full-time, George Mason University faculty regularly teach in the International Year One, Pathways and English Language Programs.

English Language Faculty
Term Assistant Professors: Kessler, Karyn; Moore, Patrick and Sanchez, Deborah
Term Instructors: Bobal, Christine; Brady, Christina; Driscoll, David; Dunaway, Sean; Elwood, Benjamin; Espino, Maggie; Harries, Emma; Hoyle, Stephen; Kim, Esther; Kirsch, Jane; Kohn, Ellen; Kozumplik, Thomas; Lilley, Timothy; McCamish, Troy; Miller, Laura; Musfeldt, Scott; Namubiru, Esther; Paez, Bonny; Pugh, John; Richardson, Mary; Rottenberg, Lori; Simmons, Noele; Skipper, Katherine; Smith, Michael and Steadman, Sarah.

Humanities Faculty
Term Assistant Professors: Harris-Scott, Steven; Harris-Sealey, Nicole; Lewis, Amy; Rose, Todd and Weinstein, Aimee.
Term Instructors: Graham, Robert; Jones, James; and McLagan, Kirsten.
Affiliated Faculty: Coleson, Michael (Mathematics); Doestch-Kidder, Sharon (English); Habib, Anna (English); Mack, M Reese (English); Mills, Mallory; Moteabed, Shora (Business) and Savage, James (English).

Center Facilities & Administration
Facilities
All Undergraduate International Year One students and many Academic English students may live in the Mason Global Center for their first year. The Mason Global Center opened in August 2014 and is the primary home for INTO George Mason University. This community connects domestic and international students for academic, language, cultural, and social exchange. The building includes residential accommodations for up to 270 international and domestic students; 17 classrooms; 100+ computers; wireless Internet throughout the center; a learning resource center with study materials, books, DVDs, and periodicals; a dining facility; lounge areas for meetings and study groups; and open spaces for socializing.

Administration
students who:

- Desire to study for an undergraduate degree in the U.S.
- Need to improve their English language skills
- May have slightly lower GPAs than required of direct-entry students
- Desire additional academic, language, and cultural support in order to succeed during their first year at a U.S. university
- Any or all of the above

Administered through INTO Mason (p. 130) in partnership with the academic units across the university, the courses in the various Undergraduate International Year One programs are taught by highly qualified Mason instructional faculty members and supported by International Year One academic advisors.

Students enrolled in any Undergraduate International Year One program should review the program's student guidebook for specific details related to program requirements and expectations.

Admission

Admission to the Undergraduate International Year One (IYO) Program is offered to international and multilingual students by two methods:

- Students may apply directly through the INTO Mason admissions process OR
- By referral from the University Admissions Office due to not having met the grade point average, English language proficiency, or other requirements for direct admission.

The Undergraduate International Year One Program entry requirements are as follows:

- High school diploma
- 2.5 minimum high school GPA equivalent based on the applicant's country/institutional scale
- Documentation demonstrating the minimum English language proficiency levels:
  - One Term (Accelerated) International Year One Program:
    - TOEFL iBT 80 (17 minimum subscores in reading and writing)
    - IELTS 6.5 (6.0 minimum subscores in reading and writing)
    - PTE Academic 53
    - Successful completion of or waiver from Academic English Level 5
  - Two Term (Standard) International Year One Program:
    - TOEFL iBT 60 (13 minimum subscores in reading and listening)
    - IELTS 5.5 (5.5 minimum subscores in reading and listening)
    - PTE Academic 45
    - Successful completion of or waiver from Academic English Level 4
  - Three Term (Comprehensive) International Year One Program:
    - TOEFL iBT 50 (10 subscores)
    - IELTS 5.0 (4.5 subscores)
    - PTE Academic 41
    - Successful completion of or waiver from Academic English Level 3

Students should review the specific requirements by International Year One Program online (http://www.intostudy.com/mason) for details.
Progression into Degree Status
Each International Year One (IYO) program has specific progression requirements for completion. These typically include a minimum grade point average and minimum individual course grades (no grades of W, NC, or I are permitted). Students should refer to the website (http://www.intostudy.com/en-gb/universities/george-mason-university) for specific IYO program requirements. Students admitted to the university through an Undergraduate IYO program are required to complete all program requirements in order to maintain continuous enrollment.

Dismissal/Termination Appeals Process for INTO Mason Students
Students who do not meet all requirements for matriculation to their desired degree program at the end of their final term will be reviewed for termination from their Undergraduate International Year One program. Terminated students may initiate one of the following an academic action requests in writing:

1. request an exception to the program policy,
2. request to change to an alternate International Year One program, and/or
3. request an extension to continue studying as an Undergraduate International Year One Extender student for one additional term.

All terminated student academic action requests must be submitted in writing to the academic advising staff located in the Mason Global Center within 14 days of notification. Requests should provide an explanation and supplementary documentation. Students who earn two unsatisfactory grades of C or lower will be ineligible to continue as an Extender. Students who fail to meet the program requirements after an extension will be reviewed for dismissal from the university.

Decisions on these requests are reviewed and approved at the discretion of the Academic Director. In some cases, additional reviews by the Associate Provost for Undergraduate Education or Academic Initiatives and Services may be required.

Reenrollment and Readmission
Due to the nature of the Undergraduate International Year One Program as both English language development and academic coursework, students are subject to a limited reenrollment policy. Students who do not enroll after the first term or withdraw for reasons other than poor academic performance may request to reenroll in an International Year One program the following term (e.g., spring) to continue making progress toward meeting program requirements, with advance permission from the Academic Director. Students who do not enroll for two consecutive terms (e.g., spring and fall) must apply for readmission to the program and be re-assessed for language proficiency. Summer terms are counted for students whose initial enrollment begins in Spring semester.

Available Year One Programs & Majors
There are five Undergraduate International Year One programs available:

- Business, leading to 5 undergraduate majors in the School of Business
- Engineering, Computing & Statistics, leading to 10 undergraduate majors in the Volgenau School of Engineering
- Humanities and Social Sciences, leading to 21 undergraduate majors in the College of Humanities and Social Sciences and the College of Visual and Performing Art’s School of Music
- Human and Social Development, leading to 7 undergraduate majors in the College Health and Human Services, the College of Education and Human Development’s School of Recreation and Tourism, and the School of Conflict Analysis and Resolution
- Science, leading to 13 undergraduate majors in the College of Science

Each program allows students to progress to preapproved undergraduate degree programs. For a full listing of specific academic programs associated with a specific International Year One Program, students should refer to the website (http://www.intostudy.com/mason) for specific requirements.

### Business

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
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<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core)</td>
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<td>BUS 120</td>
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Total Credits 29
### Three Term Program Curriculum (Comprehensive): Required Courses

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Total Credits: **29**

### Engineering, Computer Science, and Statistics

#### Two Term Program Curriculum (Standard): Required and Major Courses

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#### Required Courses for All Majors

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### Engineering Majors

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### Computer Science and Statistics Majors

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<td>CS 105</td>
<td>Computer Ethics and Society (Mason Core) (p. 142)</td>
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</table>

Total Credits: **28-31**

1. Students pursuing IT degrees should take MATH 108 Introductory Calculus with Business Applications (Mason Core) (p. 142) for 3 credits instead of MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142).

### Three Term Program Curriculum (Comprehensive): Required and Major Courses

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### Major Specific Courses

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Total Credits: **28-31**
### Information Technology Majors

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### Total Credits

28-31

### Humanities and Social Sciences

#### One Term Program Curriculum (Accelerated): Required Courses

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#### General Education Course

1. Depending on intended major and math placement, students may take a more advanced math class.

2. Course to be selected with advisor approval.

#### Total Credits

15-16

#### Two Term Program Curriculum (Standard): Required Courses

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#### Total Credits

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### Three Term Program Curriculum (Comprehensive): Required Courses

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#### Total Credits

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### Human and Social Development

#### One Term Program Curriculum (Accelerated): Required Courses

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<tr>
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#### Total Credits

1

#### Three Course Options

1. These course options are offered to students beginning in the Fall term only.

2. Depending on intended major and math placement, students may take a more advanced math class.

### Human and Social Development

#### One Term Program Curriculum (Accelerated): Required Courses

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<tr>
<td>EAP 103</td>
<td>Language Support for Public Speaking</td>
<td>1</td>
</tr>
<tr>
<td>EAP 104</td>
<td>Language Support World History</td>
<td>1</td>
</tr>
<tr>
<td>EAP 120</td>
<td>Linguistics Capstone</td>
<td>0</td>
</tr>
<tr>
<td>MUSI 221</td>
<td>Applied Music I</td>
<td></td>
</tr>
</tbody>
</table>

#### Total Credits

1
Select one of the following courses:  
PSYC 100  Basic Concepts in Psychology (Mason Core) (p. 142)  
CONF 101  Conflict and Our World (Mason Core) (p. 142)  
HEAL 230  Introduction to Health Behavior (Mason Core) (p. 142)  
MATH 111  Linear Mathematical Modeling (Mason Core) (p. 142)  
or  STAT 250  Introductory Statistics I (Mason Core) (p. 142)

Total Credits 15

1 Programs in the areas of community health, health administration, health, fitness and recreation resources and tourism and events management require STAT 250.

Two Term Program Curriculum (Comprehensive): Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 121</td>
<td>Enhanced Composition For Multilingual Writers of English I</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 122</td>
<td>Enhanced Composition For Multilingual Writers of English II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or  STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 29

Select one of the following courses:
PSYC 100  Basic Concepts in Psychology (Mason Core) (p. 142) (or CONF 101 or HEAL 230)
CONF 101  Conflict and Our World (Mason Core) (p. 142)
HEAL 230  Introduction to Health Behavior (Mason Core) (p. 142)
IT 104  Introduction to Computing (Mason Core) (p. 142)
EAP 102  Language Support for American Cultures (p. 142)
EAP 103  Language Support for Public Speaking (p. 142)
EAP 104  Language Support World History (p. 142)
EAP 120  Linguistics Capstone

Total Credits 29

1 Programs in the areas of community health; health administration; health, fitness and recreation resources; and tourism and events management require STAT 250.

Science

One Term Program Curriculum (Accelerated): Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 100</td>
<td>Composition for Multilingual Writers (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>EAP 102</td>
<td>Language Support for American Cultures (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>EAP 103</td>
<td>Language Support for Public Speaking (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>EAP 104</td>
<td>Language Support World History (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>EAP 120</td>
<td>Linguistics Capstone</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Credits 29

Three Term Program Curriculum (Comprehensive): Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE 040</td>
<td>Level 4 Core</td>
<td></td>
</tr>
<tr>
<td>AE 041</td>
<td>Level 4 Oral Comm Skills</td>
<td></td>
</tr>
<tr>
<td>ENGH 121</td>
<td>Enhanced Composition For Multilingual Writers of English I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

Two Term Program Curriculum (Standard): Required and Major Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 121</td>
<td>Enhanced Composition For Multilingual Writers of English I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 122</td>
<td>Enhanced Composition For Multilingual Writers of English II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>INYO 105</td>
<td>American Cultures (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 101</td>
<td>Fundamentals of Communication (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>EAP 102</td>
<td>Language Support for American Cultures</td>
<td>1</td>
</tr>
<tr>
<td>EAP 103</td>
<td>Language Support for Public Speaking</td>
<td>1</td>
</tr>
<tr>
<td>EAP 113</td>
<td>Language Support for University Physics</td>
<td>1</td>
</tr>
<tr>
<td>EAP 114</td>
<td>Language Support for General Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>EAP 120</td>
<td>Linguistics Capstone</td>
<td>0</td>
</tr>
<tr>
<td>UNIV 140</td>
<td>INTO Mason Pathway Transition</td>
<td>1</td>
</tr>
<tr>
<td>UNIV 141</td>
<td>INTO Mason Pathway Extended Transition</td>
<td>1</td>
</tr>
</tbody>
</table>

Select the following to replace Physics courses if majoring in Geology or Earth Science:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core)</td>
<td>1</td>
</tr>
<tr>
<td>EAP 115</td>
<td>Language Support for Introductory Geology I</td>
<td>1</td>
</tr>
</tbody>
</table>

Select the following to replace Chemistry courses if majoring in Environmental and Sustainability Studies:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 110</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 34

### Three Term Program Curriculum (Comprehensive): Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE 040</td>
<td>Level 4 Core</td>
<td></td>
</tr>
<tr>
<td>AE 041</td>
<td>Level 4 Oral Comm Skills</td>
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<tr>
<td>ENGH 122</td>
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<td>3</td>
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</tr>
<tr>
<td>MATH 114</td>
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<td>4</td>
</tr>
<tr>
<td>INYO 105</td>
<td>American Cultures (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 101</td>
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</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
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<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>EAP 102</td>
<td>Language Support for American Cultures</td>
<td>1</td>
</tr>
<tr>
<td>EAP 103</td>
<td>Language Support for Public Speaking</td>
<td>1</td>
</tr>
<tr>
<td>EAP 113</td>
<td>Language Support for University Physics</td>
<td>1</td>
</tr>
<tr>
<td>EAP 114</td>
<td>Language Support for General Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>EAP 120</td>
<td>Linguistics Capstone</td>
<td>0</td>
</tr>
<tr>
<td>UNIV 140</td>
<td>INTO Mason Pathway Transition</td>
<td>1</td>
</tr>
<tr>
<td>UNIV 141</td>
<td>INTO Mason Pathway Extended Transition</td>
<td>1</td>
</tr>
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<th>Title</th>
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<tbody>
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<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>EAP 115</td>
<td>Language Support for Introductory Geology I</td>
<td>1</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 110</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 34

### Graduate International Pathways

The Graduate International Pathways are pre-master’s programs that provide international students paths to various graduate degrees at George Mason University. The pathways give students the academic foundation, essential language skills, and cultural knowledge to successfully move on to their master’s degree programs. There are one and two term options available for most pathways. For most students, enrolling in a Graduate International Pathway will add one or two additional semesters to their overall master’s degree program.

There are currently 49 Graduate International Pathways available to graduate students. Each pathway allows students to progress to pre-approved graduate degree programs at GMU. The pathways are administered in partnership with the following nine Schools and Colleges at George Mason University. For more information on the specific pathways to degrees in each School or College, click on the links below:

- INTO Mason: Engineering Graduate Pathways
- INTO Mason: Humanities and Social Sciences Graduate Pathways
- INTO Mason: Education and Human Development Graduate Pathways (http://catalog.gmu.edu/international-programs-resources/into-mason/education-human-development-graduate-pathways)
- INTO Mason: Health and Human Services Graduate Pathways (http://catalog.gmu.edu/international-programs-resources/into-mason/health-human-services-graduate-pathways)
- INTO Mason: College of Science Graduate Pathways (http://catalog.gmu.edu/international-programs-resources/into-mason/science-graduate-pathways)
Graduate International Pathways are designed for international students who:

• Need further English language development
• Require a fourth year of undergraduate study
• Fall short of meeting the minimum GPA or admission test score requirements
• Need to improve study skills for success in their chosen field of study
• Any or all of the above

Administered through INTO Mason (p. 130) in partnership with the academic units across the university, the courses in each Graduate International Pathway are taught by highly qualified Mason instructional faculty members and supported by International Pathways academic advisors.

Admission

Admission to Graduate International Pathways are offered to international and multilingual students by two methods:

• Students may apply directly through the INTO Mason admissions process OR
• By referral from graduate admissions due to not having met the grade point average, English language proficiency, or other requirements for direct admission (cascade).

The minimum documentation required for admission include: application, mark sheets/transcripts (in English and the original language), degree certificates (in English and the original language) and other required items as stated in the program catalog supplement.

Graduate International Pathway entry requirements are usually as follows:

• An undergraduate degree equivalent to a U.S. bachelor’s degree in a relevant field as specified by the particular International Pathways program;
• 2.75 minimum high school GPA equivalent based on the applicant’s country/institutional scale; and
• Documentation demonstrating the minimum English proficiency levels as specified by the particular pathway. The general minimum scores are as follows:
  • One Term (Accelerated) and Bridge International Pathways:
    • TOEFL iBT 75 – 85 (variable minimum subscores required for all but Engineering pathways)
    • IELTS 6.0 – 6.5 (variable minimum subscores required for all but Engineering pathways)
    • PTE Academic 52 – 58
  • Successful completion of or waiver from Academic English Level 6
  • Two Term (Standard) International Pathways:
    • TOEFL iBT 65 - 75 (variable minimum subscores required for all but Engineering pathways)
    • IELTS 5.5 - 6.5 (variable minimum subscores required for all but Engineering pathways)
    • PTE Academic 44 - 52
    • Successful completion of or waiver from Academic English Level 5
  • Three Term (Comprehensive) International Pathway in Accounting:
    • TOEFL iBT 60 (13 minimum subscores)
    • IELTS 5.5 (5.5 minimum subscores)
    • PTE Academic 45
    • Successful completion of or waiver from Academic English Level 4

Students who hold three year baccalaureate degrees may be eligible for select Graduate International Pathways Bridge programs. Students should review the specific requirements for each pathway at the INTO Study website (http://www.intostudy.com/en-gb/universities/george-mason-university).

Curriculum

Prescribed courses for the Graduate International Pathways programs include approximately 11 - 13 credits for One-Term pathways and 20 - 24 credits for Two-Term pathways. The intent of these courses is to prepare students for the demands of the Mason graduate curriculum. Further, the prescribed courses may include up to 12 credits of coursework toward the student’s graduate degree during their International Pathways term(s) of study.

One Term (Accelerated) pathways include the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAP 508</td>
<td>Graduate Communication in the Disciplines III</td>
<td>4</td>
</tr>
<tr>
<td>INYO 504</td>
<td>Accelerated Graduate Transitions for International Students</td>
<td>3</td>
</tr>
<tr>
<td>EAP 098 or EAP 099</td>
<td>Individualized Language Instruction</td>
<td>0</td>
</tr>
</tbody>
</table>

In addition to the core coursework listed above, students will also take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate coursework toward graduate program</td>
<td>3-6</td>
</tr>
</tbody>
</table>

Students whose graduate degree program requires the GRE prior to completing their pathway will also be required to take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>INYO 095</td>
<td>Quantitative Preparation for the Graduate Record Examination</td>
</tr>
<tr>
<td>INYO 096</td>
<td>Verbal and Quantitative Preparation for the Graduate Record Examination</td>
</tr>
</tbody>
</table>
INYO 097 Verbal, Quantitative, and Academic Writing Preparation for the Graduate Record Examination

EAP 097 Verbal Preparation for the Graduate Record Examination

**Two Term (Standard) pathways include the following courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INYO 501</td>
<td>Graduate Transitions for International Students I</td>
<td>2</td>
</tr>
<tr>
<td>INYO 502</td>
<td>Graduate Transitions for International Students II</td>
<td>2</td>
</tr>
<tr>
<td>EAP 505</td>
<td>Special Topics in Advanced English for Academic Purposes</td>
<td>2</td>
</tr>
<tr>
<td>EAP 506</td>
<td>Graduate Communication in the Disciplines I</td>
<td>4</td>
</tr>
<tr>
<td>EAP 507</td>
<td>Graduate Communication in the Disciplines II</td>
<td>4</td>
</tr>
<tr>
<td>EAP 510</td>
<td>Linguistic Capstone</td>
<td>0</td>
</tr>
<tr>
<td>EAP 504</td>
<td>Advanced English for Academic Purposes Reading and Writing</td>
<td>2</td>
</tr>
<tr>
<td>EAP 098</td>
<td>Individualized Language Instruction</td>
<td>0</td>
</tr>
<tr>
<td>or EAP 099</td>
<td>Individualized Language Instruction</td>
<td></td>
</tr>
</tbody>
</table>

In addition to the coursework listed above, students will also take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate coursework toward graduate program</td>
<td>3-12</td>
</tr>
</tbody>
</table>

Students whose graduate degree program requires the GRE prior to completing the International Pathways program will also be required to take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Preparation for the Graduate Record Examination (specified by International Pathway degree program)</td>
<td></td>
</tr>
</tbody>
</table>

Students will take one of the following: 0

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INYO 095</td>
<td>Quantitative Preparation for the Graduate Record Examination</td>
<td></td>
</tr>
<tr>
<td>INYO 096</td>
<td>Verbal and Quantitative Preparation for the Graduate Record Examination</td>
<td></td>
</tr>
<tr>
<td>INYO 097</td>
<td>Verbal, Quantitative, and Academic Writing Preparation for the Graduate Record Examination</td>
<td></td>
</tr>
<tr>
<td>EAP 097</td>
<td>Verbal Preparation for the Graduate Record Examination</td>
<td></td>
</tr>
</tbody>
</table>

**Three Term (Comprehensive) Accounting pathway includes the following courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE 050</td>
<td>Level 5 Core</td>
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</tr>
<tr>
<td>AE 051</td>
<td>Level 5 Oral Comm Skills</td>
<td></td>
</tr>
<tr>
<td>ACCT 330</td>
<td>Financial Accounting I</td>
<td>3</td>
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</tbody>
</table>

EAP 100 Special Topics 1

Total Credits 4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Preparation for the Graduate Record Examination</td>
<td></td>
</tr>
</tbody>
</table>

Upon successful completion of the first term, students will follow the Two Term (Standard) Accounting pathway curriculum during their second and third terms of study.

**Progression into Degree Status**

Each Graduate International Pathway has specific progression requirements for completion. These typically include a minimum grade point average and minimum individual course grades (no grades of NC or I are permitted). Students should refer to the INTO Study website (http://www.intostudy.com/en-gb/universities/george-mason-university) for specific requirements. Students admitted to the university through a Graduate International Pathway program are required to complete all program requirements in order to maintain continuous enrollment.

**Dismissal/Termination Appeals Process for INTO Mason Students**

Students who do not meet all requirements for matriculation to their desired degree program at the end of their final term will be reviewed for termination from their Graduate International Pathway. Terminated students may initiate one of the following an academic action requests in writing:

1. request an exception to the program policy,
2. request to change to an alternate Graduate International Pathway, and/or
3. request an extension to continue studying as a Graduate International Pathways Extender student for one additional term.

All terminated student academic action requests must be submitted in writing to the academic advising staff located in the Mason Global Center within 14 days of notification. Requests should provide an explanation and supplementary documentation. Students who earn two unsatisfactory grades of C or lower will be ineligible to continue as an Extender. Students who fail to meet the program requirements after an extension will be reviewed for dismissal from the university.

Decisions on these requests are reviewed and approved at the discretion of the Academic Director. In some cases, additional reviews by the Associate Provost for Graduate Education or from a College Dean may also be required.

**Re-enrollment and Re-admission**

Due to the nature of the Graduate International Pathways as both English language development and academic coursework, students are subject to a limited re-enrollment policy. Students who do not enroll after the first term or withdraw for reasons other than poor academic performance may request to re-enroll in a Graduate International Pathway program the following term (e.g., spring) to continue making progress toward meeting program requirements, with advance permission from the Academic Director. Students who do not enroll for two consecutive terms (e.g., spring and fall) must apply for readmission to the program and be re-assessed for language proficiency. Summer terms are counted for students whose initial enrollment begins in Spring semester.
Academic English Program

Administered by INTO George Mason University’s English Language Programs, the Academic English (AE) Program prepares international students for university study in the United States. AE is a non-credit program designed to develop the English skills needed for successful communication, cultural integration, and participation in the academic environment of the university.

Admission

Students who apply to the AE Program must submit an application, application fee, and required documents through INTO Mason. In order to qualify for admission to the AE Program, students must demonstrate that they have earned at least a high school diploma.

Students have the option to apply for the AE or an International Year One (IYO) Program. Students who apply to an International Year One Program but do not demonstrate entry language requirements are given an individual pre-arrival study plan that provides an estimate of the number of Academic English terms to complete in order to fulfill International Year One entry requirements (AE + IYO). This pre-arrival study plan is only an estimate; an updated post-arrival study plan with a minimum of one term of AE will be provided to AE + IYO students after taking the INTO Mason Placement Test.

For more information about International Year One admission requirements, see Undergraduate International Year One Program (p. 131) or Graduate International Year One Program (p. 136).

Program Outcomes

After successfully completing the upper level(s) of the Academic English program, students will be able to do the following:

- Interact comfortably in the U.S. classroom with professors and fellow students
- Understand U.S. values in an academic setting
- Present their spoken and written ideas accurately and effectively in English
- Write research papers with proper use of citations and references
- Use the Internet and Mason library databases to conduct academic research
- Read, understand, and critically evaluate academic texts
- Understand and use vocabulary common to academic disciplines
- Take useful and accurate notes in academic lectures and presentations
- Develop and deliver oral presentations

Program Structure

The Academic English Program is offered three terms per year: Fall (15 weeks of instruction), Spring (15 weeks of instruction), and Summer (10 weeks of instruction). Upon arrival, all Academic English students are given a language proficiency assessment to determine their AE level placement. In order to be eligible for full-time status, students must be enrolled in a minimum of 18 hours of non-credit AE coursework per week. AE courses are offered at eight levels of proficiency regularly throughout the year.

AE faculty are highly qualified with significant teaching experience and master’s and doctoral degrees in TESOL or related fields. The program is also supported by academic advisors experienced in working with multilingual speakers of English and the Student Experience staff, who help students utilize university resources and engage in the Mason experience through opportunities to participate in campus and local community groups/programs.

Curriculum

In keeping with the current literature on second language acquisition and pedagogy, the Academic English curriculum is aligned with the Common European Framework of Reference scales (CEFR), American Council on The Teaching of Foreign Languages (ACTFL) Proficiency Guidelines 2012, and the Pearson Global Scale of English (GSE) Learning Objectives for Academic English. Curricular objectives and learning outcomes for each of the eight AE levels are geared toward an exit goal that is one level higher than the entrance level.

Grading System for Academic English

Throughout the semester, students are assessed on how well they have met curricular learning outcomes. Midterm and final grades for all Academic English courses are submitted to the University as letter grades.

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percent Grade</th>
<th>Quality Points</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>97-100</td>
<td>4.00</td>
<td>Passing</td>
</tr>
<tr>
<td>A</td>
<td>93-96</td>
<td>4.00</td>
<td>Passing</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
<td>3.67</td>
<td>Passing</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
<td>3.33</td>
<td>Passing</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
<td>3.00</td>
<td>Passing</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
<td>2.67</td>
<td>Passing</td>
</tr>
<tr>
<td>C+</td>
<td>77-79</td>
<td>2.33</td>
<td>Failing</td>
</tr>
<tr>
<td>C</td>
<td>73-76</td>
<td>2.00</td>
<td>Failing</td>
</tr>
<tr>
<td>C-</td>
<td>70-72</td>
<td>1.67</td>
<td>Failing</td>
</tr>
</tbody>
</table>

Grading Scale:
- A+: 97-100
- A: 93-96
- A-: 90-92
- B+: 87-89
- B: 83-86
- B-: 80-82
- C+: 77-79
- C: 73-76
- C-: 70-72
- D: 67-69
- F: 0-66
Grade point average (GPA) is an important factor in determining program-to-program progression and evaluating academic standing.

### In-Program Level Progression

In Core and OCS courses, students must receive a final grade of at least 80% in order to advance to the next level of Core/OCS. If a student has performed exceptionally well in Core/OCS, the instructor may submit an AE Level Skip Form requesting that the student skip a Core/OCS level in the subsequent semester.

### Program-to-Program Progression

In order for an AE + Year One student to progress to his/her planned Year One program, the student must earn for the most current AE semester a 2.5 or higher term GPA and a final passing grade (A+, A, A-, B+, B, or B-) of specified levels of Core and OCS. AE-only students must meet the same language requirements for progression and submit other documentation as required by the prospective Year One program.

AE students applying for direct admission to George Mason University must earn a passing final grade (A+, A, A-, B+, B, or B-) in specified levels of Core and OCS to meet entry language proficiency requirements.

#### AE Language Requirements for INTO Mason International Year One programs and Mason Direct Admission

<table>
<thead>
<tr>
<th>Program</th>
<th>Language Requirement 1</th>
<th>Language Requirement 2</th>
<th>Language Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate International One (Three Term/ Comprehensive)</td>
<td>Passing Grade in AE 030: Level 3 Core</td>
<td>Passing Grade in AE 031: Level 3 OCS</td>
<td>AE Term GPA ≥ 2.5</td>
</tr>
<tr>
<td>Undergraduate International One (Two Term/ Standard)</td>
<td>Passing Grade in AE 040: Level 4 Core</td>
<td>Passing Grade in AE 041: Level 4 OCS</td>
<td>AE Term GPA ≥ 2.5</td>
</tr>
<tr>
<td>Undergraduate International One (One Term/ Accelerated)</td>
<td>Passing Grade in AE 050: Level 5 Core</td>
<td>Passing Grade in AE 051: Level 5 OCS</td>
<td>AE Term GPA ≥ 2.5</td>
</tr>
<tr>
<td>Direct Undergraduate Admission</td>
<td>Passing Grade in AE 060: Level 6 Core</td>
<td>Passing Grade in AE 061: Level 6 OCS</td>
<td>AE Term GPA ≥ 2.5</td>
</tr>
<tr>
<td>Graduate International Year One (Three Term/ Comprehensive)</td>
<td>Passing Grade in AE 040: Level 4 Core</td>
<td>Passing Grade in AE 041: Level 4 OCS</td>
<td>AE Term GPA ≥ 2.5</td>
</tr>
<tr>
<td>Graduate International Year One (Two Term/ Standard)</td>
<td>Passing Grade in AE 050: Level 5 Core</td>
<td>Passing Grade in AE 051: Level 5 OCS</td>
<td>AE Term GPA ≥ 2.5</td>
</tr>
</tbody>
</table>

* Information in the chart above only shows program eligibility based on language proficiency requirements met.

Academic English students may not level skip directly into an International Year One (IYO) program or direct admission the following semester. Even if a student is approved to skip into an Academic English level beyond what is required for the desired IYO program or direct admission, the student must complete the subsequent semester in the AE Program first. Students also have the option of submitting official TOEFL/IELTS/PTE Academic scores to George Mason University in lieu of meeting the AE program-to-program progression requirements, but must still maintain good standing in the AE Program.

#### Attendance and Academic Probation

In order to make progress in developing academic language skills, students are expected to attend classes regularly and remain in good academic standing.

### Attendance

Students with excessive absences in a course (more than 15%) will automatically receive an NG as a final course grade:

<table>
<thead>
<tr>
<th>Term</th>
<th>Meetings/Wk</th>
<th>Course</th>
<th>Absence</th>
<th>Course Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall, Spring</td>
<td>5x</td>
<td>Core</td>
<td>11 or more</td>
<td>NG</td>
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<tr>
<td>Fall, Spring</td>
<td>3x</td>
<td>OCS</td>
<td>7 or more</td>
<td>NG</td>
</tr>
<tr>
<td>Fall, Spring</td>
<td>2x</td>
<td>Elective</td>
<td>5 or more</td>
<td>NG</td>
</tr>
<tr>
<td>Summer</td>
<td>5x</td>
<td>Core</td>
<td>8 or more</td>
<td>NG</td>
</tr>
<tr>
<td>Summer</td>
<td>4x</td>
<td>OCS</td>
<td>8 or more</td>
<td>NG</td>
</tr>
</tbody>
</table>

A final grade of NG in an AE course will result in probation and/or termination from the AE Program and George Mason University.

A student receives a final grade of NG for excessive absences in any course. The student receives an e-mail and hand-delivered letter from INTO Mason Academic Services stating that s/he is on Attendance Probation for the next semester. Before being permitted to register for AE classes, the student must meet with an INTO Mason Academic Advisor and sign an Attendance Probation contract. Students who refuse the contract or who violate the conditions of the contract will be dismissed immediately. Students who follow the terms of the contract and complete a successful semester will be removed from Academic Probation and considered in good standing.
A student on probation receives an NG for excessive absences in any course. The student is terminated from the AE Program and George Mason University.

**Academic Progress**

Students are expected to make satisfactory progress in developing their language skills and may not attempt the same Core or OCS course more than three times. Academic progress is determined primarily through term GPA. Students whose GPAs fall below 2.5 will be given a warning, placed on probation, and/or terminated from the AE Program and George Mason University:

- A student earns a term GPA below 2.5. INTO Mason Academic Services e-mails the student that s/he is on Academic Warning for the next semester.
- A student on Academic Warning earns a term GPA below 2.5. The student receives an e-mail and hand-delivered letter from INTO Mason Advising & Academic Services stating that s/he is on Academic Probation for the next semester. Before being permitted to register for AE classes, the student must meet with their assigned academic advisor and sign an Academic Probation contract. Students who refuse the contract or who violate the conditions of the contract will be dismissed immediately. Students who follow the terms of the contract and complete a successful semester will be removed from Academic Probation and considered in good standing.
- A student on Academic Probation earns a term GPA below 2.5. The student is terminated from the AE Program and George Mason University.

**Termination Appeals Process for INTO Mason Students**

All termination appeals must be submitted in writing to the INTO Mason Academic Services office located in the Mason Global Center within 14 days of notification. Requests should provide an explanation and supplementary documentation. Students who fail to meet the program requirements after an additional semester will be reviewed for termination from the university.

Decisions on these requests are reviewed and approved at the discretion of the Academic Director. In some cases, additional reviews by the Associate Provost for Academic Initiatives and Services may also be required.

**Reenrollment and Readmission**

Academic English students who do not enroll after the first term or withdraw for reasons other than poor academic performance (e.g., spring and fall) must apply for readmission to the program and be reassessed for language proficiency upon return.
**The Mason Core at Mason Overview**

The Mason Graduate is an Engaged Citizen and Well-Rounded Scholar who is Prepared to Act. The Mason Core is Mason’s general education program that builds the foundation for The Mason Graduate. All undergraduates seeking a baccalaureate degree must complete Mason Core requirements. The Mason Core provides a breadth of liberal education courses, complementing the depth of knowledge and skills they build in their majors and minors. Additional requirements for specific degree programs can be found in the college or school sections of this catalog.

The Mason Core prepares students for work in their majors and minors, for their careers, and for life-long learning. Foundation courses build key knowledge and skills needed for academic success. Exploration courses provide a breadth of learning across the university. Integration courses include upper-division courses that are designed to integrate knowledge and skills learned from Foundation and Exploration courses into the major. Courses are designed around learning outcomes that help develop the qualities we expect of all students graduating with a Bachelor’s degree from George Mason University.

The Mason Core: Engagement Series (ENCORE) provides an optional pathway for students interested in combining academic coursework with co-curricular activities towards a completion certificate in Sustainability or Well-Being.

All undergraduates seeking a baccalaureate degree must complete Mason Core requirements. Additional requirements for specific degree programs can be found in the college or school sections of this catalog.

**Synopsis of Requirements**

The Mason Core is divided into three sections: foundation, exploration, and integration. Each section contains courses that have specific learning outcomes for students and are assessed on a regular basis.

### Foundation Requirements (12 credits)

Foundation requirements help ensure that students master the tools and techniques necessary to succeed in college and throughout their lives and careers. These courses emphasize skills—in writing, speaking, and working with numbers and technology—that can be applied to any major field of study and career goal.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

### Oral Communication (3 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 100</td>
<td>Composition for Multilingual Writers (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

### Exploration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (ENGH 302) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Capstone-or-Synthesis (p. )</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 40

**Note:** The course list reflects approved courses as of press time. Please visit the Mason Core website [http://masoncore.gmu.edu/general-education-at-mason-2](http://masoncore.gmu.edu/general-education-at-mason-2) for the most recent list of courses as the listed is updated throughout the academic year.

### Written Communication (3 credits, lower-level)

**Learning Outcomes:**

Students develop the ability to use written communication as a means of discovering and expressing ideas and meanings: in short, employing writing as a way of thinking. Students begin this process at the Foundation level in English 101 (100 for ESL students) and build higher-level skills at the Integration level in English 302. Writing will be emphasized in many courses throughout a student’s career, and at least one course in every student’s major is designated “writing intensive” (Integration level).

**Required:**

The following courses as well as an approved writing-intensive course in the major.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 100</td>
<td>Composition for Multilingual Writers (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Current Catalog for Writing-Intensive Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 100</td>
<td>Composition for Multilingual Writers (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Oral Communication (3 credits)**

**Learning Outcomes:**

1. Students will demonstrate understanding of and proficiency in constructing and delivering multiple message types.
2. Students will understand and practice effective elements of ethical verbal and nonverbal communication.
3. Students will develop analytical skills and critical listening skills.
4. Students will understand the influence of culture in communication and will know how to cope with cultural differences when presenting information to an audience. Students develop the ability to use oral communication as a way of thinking and learning, as well as sharing ideas.
Required:
One approved course. Students will be expected to continue developing oral communication skills in additional Mason Core courses as appropriate.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 101</td>
<td>Fundamentals of Communication (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 454</td>
<td>Methods of Teaching Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 101</td>
<td>Narratives of Identity (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>INTS 202</td>
<td>Public Speaking and Critical Thinking Skills (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Quantitative Reasoning (3 credits)

Learning Outcomes:
1. Students are able to interpret quantitative information (i.e., formulas, graphs, tables, models, and schematics) and draw inferences from them.
2. Given a quantitative problem, students are able to formulate the problem quantitatively and use appropriate arithmetical, algebraic, and/or statistical methods to solve the problem.
3. Students are able to evaluate logical arguments using quantitative reasoning.
4. Students are able to communicate and present quantitative results effectively.

Required:
One approved course.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 395</td>
<td>Work, Technology, and Society: An IT Perspective (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CS 100</td>
<td>Principles of Computing (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 300</td>
<td>Research Methods and Analysis (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>HIST 390</td>
<td>The Digital Past (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 345</td>
<td>Introduction to Multimedia (Mason Core) (p. 142)</td>
<td>5</td>
</tr>
<tr>
<td>INTS 445</td>
<td>Multimedia Design (Mason Core) (p. 142)</td>
<td>5</td>
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<tr>
<td>IT 104</td>
<td>Introduction to Computing (Mason Core) (p. 142)</td>
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<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142)</td>
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<tr>
<td>MUSI 259</td>
<td>Music in Computer Technology (Mason Core) (p. 142)</td>
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<tr>
<td>AVT 180</td>
<td>New Media in the Creative Arts (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
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<tr>
<td>INTS 203</td>
<td>Inquiry for Action: Facilitating Change (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>INTS 249</td>
<td>Digital Literacy (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Information Technology and Computing (3 credits)

Learning Outcomes:
Information technology and computing can significantly augment humans’ ability to produce, consume, process, and communicate information. Thus, students need to understand ways to use such technology to enhance their lives, careers, and society, while being mindful of challenges such as security, source reliability, automation, and ethical implications. These factors have made it essential for students to understand how to effectively navigate the evolving technological landscape. IT courses offered in the majors may focus on disciplinary applications and concerns of information technology.

IT courses meet the following learning outcomes:
1. Students will understand the principles of information storage, exchange, security, and privacy and be aware of related ethical issues.
2. Students will become critical consumers of digital information; they will be capable of selecting and evaluating appropriate, relevant, and trustworthy sources of information.
3. Students can use appropriate information and computing technologies to organize and analyze information and use it to guide decision-making.
4. Students will be able to choose and apply appropriate algorithmic methods to solve a problem.

Required:
One approved 3-credit course that meets all IT requirements or an approved sequence of courses that meet all IT requirements.
Exploration Requirements (22 credits)

Exploration requirements help ensure that students become acquainted with the broad range of intellectual domains that contribute to a liberal education. By experiencing subject matter and ways of knowing in a variety of fields, students will be better able to synthesize new knowledge, respond to fresh challenges, and meet the demands of a complex world.

The course list reflects approved courses as of press time. See the most current list (http://masoncore.gmu.edu/general-education-at-mason-2) for updates.

Note: Beginning Fall 2014, certain courses within the Mason Core can count for more than one category, if approved by the Mason Core committee. Students will be allowed to double count two courses (up to six credit hours) to fulfill their Mason Core requirements. Courses that qualify for double counting will be listed in their individually approved sections. Students may not double count credits in Oral Communication, Written Communication, or Quantitative Reasoning categories.

Arts (3 credits)

Mason courses in the film making, visual and performing arts stress generative, inquiry based learning through direct aesthetic and creative experience in the studio environment. Art history courses address the intrinsic relationship of personal and cultural creativity, and the manifestation of aesthetics, visual culture and visual narrative within historical contexts.

Learning Outcomes:

Students who successfully complete a course in the Arts category must meet the following four learning outcomes:

1. Demonstrate an understanding of the relationship between artistic process, and a work's underlying concept, and where appropriate, contexts associated with the work.
2. Identify and analyze the formal elements of a particular art form using vocabulary and critique appropriate to that form.
3. Analyze cultural productions using standards appropriate to the form, as well as the work's cultural significance and context.
4. Analyze and interpret the content of material or performance culture through its social, historical, and personal contexts.
5. Engage in generative artistic processes, including conception, creation, and ongoing critical analysis.

Required:

One approved course.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 101</td>
<td>Introduction to the Visual Arts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<td>-------------</td>
<td>-------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>ARTH 376</td>
<td>Twentieth-Century Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>AVT 103</td>
<td>Introduction to the Artist’s Studio (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>AVT 104</td>
<td>Two-Dimensional Design and Color (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>AVT 215</td>
<td>Typography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>AVT 222</td>
<td>Drawing I (Mason Core) (p. 142)</td>
<td>4</td>
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<tr>
<td>AVT 232</td>
<td>Painting I (Mason Core) (p. 142)</td>
<td>4</td>
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<td>AVT 243</td>
<td>Printmaking I (Mason Core) (p. 142)</td>
<td>4</td>
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<tr>
<td>AVT 252</td>
<td>Darkroom Photography I (Mason Core) (p. 142)</td>
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<td>AVT 253</td>
<td>Digital Photography I (Mason Core) (p. 142)</td>
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<tr>
<td>AVT 262</td>
<td>Sculpture I (Mason Core) (p. 142)</td>
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<tr>
<td>AVT 272</td>
<td>Interdisciplinary Arts (Mason Core)</td>
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Global Understanding (3 credits)

Learning Outcomes:

The goal of the global understanding category is to help students see the world from multiple perspectives, reflect upon their positions in a global society, and be prepared for future engagement as global citizens. While it may include a historical perspective, global understanding courses focus primarily on a contemporary understanding of one's place in a global society.

Courses in this category must meet a minimum of three of the following learning outcomes:

1. Identify and articulate one's own values and how those values influence their interactions and relationships with others, both locally and globally.

2. Demonstrate understanding of how the patterns and processes of globalization make visible the interconnections and differences among and within contemporary global societies.

3. Demonstrate the development of intercultural competencies.

4. Explore individual and collective responsibilities within a global society through analytical, practical, or creative responses to problems or issues, using resources appropriate to the field.

Note: A student may also meet the Global Understanding requirement through a full-semester study abroad or 12-15 credit hour program; shorter-term study abroad courses must include and meet the learning outcomes listed below and be evaluated prior to departure.

Required:
One approved course.

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### Literature (3 credits)

**Learning Outcomes:**

1. Students will be able to read for comprehension, detail, and nuance.
2. Identify the specific literary qualities of language as employed in the texts they read.
3. Analyze the ways specific literary devices contribute to the meaning of a text.
4. Identify and evaluate the contribution of the social, political, historical, and cultural contexts in which a literary text is produced.
5. Evaluate a critical argument in others' writing as well as one's own.

**Required:**

One approved course.

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**Natural Science (7 credits total)**

The Mason Core natural sciences courses engage students in scientific exploration, foster their curiosity, enhance their enthusiasm for science; and enable them to apply scientific knowledge and reasoning to personal, professional and public decision-making. Lab courses must meet all five learning outcomes. Non-lab courses must meet learning outcomes 1 through 4.

**Learning Outcomes:**

1. Understand how scientific inquiry is based on investigation of evidence from the natural world, and that scientific knowledge and understanding: a) evolves based on new evidence, and b) differs from personal and cultural beliefs.
2. Recognize the scope and limits of science.
3. Recognize and articulate the relationship between the natural sciences and society and the application of science to societal challenges (e.g., health, conservation, sustainability, energy, natural disasters, etc.).
4. Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).
5. Participate in scientific inquiry and communicate the elements of the process, including: a) making careful and systematic observations, b) developing and testing a hypothesis, c) analyzing evidence, and d) interpreting results.

**Required:**

Two approved science courses. At least one course will include laboratory experience.

**Non-lab (3 credits)**

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### Social and Behavioral Sciences (3 credits)

#### Learning Outcomes:
The following three learning outcomes are required goals of disciplinary or interdisciplinary courses:

1. Explain how individuals, groups or institutions are influenced by contextual factors;
2. Demonstrate awareness of changes in social and cultural constructs;
3. Use appropriate methods and resources to apply social and behavioral science concepts, terminology, principles and theories in the analysis of significant human issues, past or present.

#### Required:
One approved course.

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Transfer students may substitute one of the following for HIST 100 History of Western Civilization (Mason Core) (p. 142)

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Transfer students may substitute one of the following for HIST 125 Introduction to World History (Mason Core) (p. 142)

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<td>Freshman/Sophomore Seminar in Global History</td>
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<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
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</table>

Integration Requirements (9 credits)

Written Communication (3 credits, upper-level)

Learning Outcomes:
Students develop the ability to use written communication as a means of discovering and expressing ideas and meanings: in short, employing writing as a way of thinking. Students begin this process at the Foundation level in ENGH 101 Composition (Mason Core) (p. 142) (ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ESL students) and build higher-level skills at the Integration level in ENGH 302 Advanced Composition (Mason Core) (p. 142). Writing will be emphasized in many courses throughout a student’s career, and at least one course in every student’s major is designated “writing intensive” (Integration level).

Required:
The following course as well as an approved writing-intensive course in the major.

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
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Writing-Intensive Course Requirement (usually 3 credits)

As part of the university’s commitment to student writers in all undergraduate programs, at least one upper-division course in each major has been designated as fulfilling the “writing intensive” (WI) requirement.

The following courses have been approved to meet the writing-intensive requirement.

<table>
<thead>
<tr>
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<tr>
<td>INTS 102</td>
<td>Global Networks and Communities (Mason Core)</td>
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NOTE: students MUST select the course approved for their major. See specific degree program for details.

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<td>Assurance and Audit Services</td>
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<td>ANTH 490</td>
<td>Theories, Methods, and Issues II</td>
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<td>ARAB 331</td>
<td>Reading and Conversation II</td>
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<td>ARTH 400</td>
<td>Historiography and Methods of Research in Art History (Topic Varies)</td>
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<td>ARTH 420</td>
<td>Advanced Studies in Ancient Art</td>
<td>3</td>
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<tr>
<td>ARTH 430</td>
<td>Advanced Studies in Medieval or Islamic Art</td>
<td>3</td>
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<tr>
<td>ARTH 440</td>
<td>RS: Advanced Studies in Renaissance and Baroque Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 460</td>
<td>RS: Advanced Studies in 20th-Century European Art</td>
<td>3</td>
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<tr>
<td>ARTH 471</td>
<td>Advanced Studies in Art of the United States</td>
<td>3</td>
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<tr>
<td>ARTH 472</td>
<td>RS: Advanced Studies in 20th-Century Latin American Art</td>
<td>3</td>
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<tr>
<td>ARTH 474</td>
<td>Advanced Studies in Contemporary Art</td>
<td>3</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<td>ARTH 490</td>
<td>Independent Study in Art History</td>
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<td>ARTH 491</td>
<td>Independent Study in Art History</td>
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<td>ARTH 492</td>
<td>Honors Directed Readings</td>
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<td>ARTH 493</td>
<td>Honors Directed Research</td>
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<td>ARTH 495</td>
<td>RS: Objects and Archives in Art History</td>
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<td>ARTH 499</td>
<td>Advanced Studies in Art History</td>
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<td>RS: Methods of Observational Astronomy (Mason Core) (p. 142)</td>
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<td>Writing for Artists</td>
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<td>Writing for Designers</td>
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<td>Modeling and Control of Physiological Systems</td>
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<td>The Research Process</td>
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<td>Scientific Data and Databases</td>
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<td>Engineering and Economic Models in Civil Engineering</td>
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<td>Physical Chemistry Lab I</td>
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<td>Culture, Identity, and Conflict</td>
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<td>Capstone in Criminology, Law and Society (Mason Core) (p. 142)</td>
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<td>Synthesis of Ethics and Law for the Computing Professional (Mason Core) (p. 142)</td>
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<td>Dance History I (Mason Core) (p. 142)</td>
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<td>The Political Economy of Nonprofit Institutions</td>
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<td>Smithian Political Economy I</td>
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<td>Research and Assessment in Elementary Education</td>
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<td>ENGH 305</td>
<td>Dimensions of Writing and Literature</td>
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<td>ENGH 373</td>
<td>Film and Video Forms</td>
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<td>Environmental Policy Making in Developing Countries</td>
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<td>Advanced Visual Storytelling (Mason Core) (p. 142)</td>
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<td>Forensic Chemistry</td>
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<td>RS: Story Design for Computer Games</td>
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<td>Health Program Planning and Evaluation</td>
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<td>Community Health Capstone (Mason Core) (p. 142)</td>
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<td>GEOL 334</td>
<td>Vertebrate Paleontology</td>
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<td>Seminar in Geography</td>
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<td>Honors Seminar (Mason Core) (p. 142)</td>
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<td>HAP 465</td>
<td>Integration of Professional Skills and Issues (Mason Core) (p. 142)</td>
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<td>Family Law and Public Policy</td>
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<td>Introduction to Historical Method (Mason Core)</td>
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<td>RS: Senior Seminar in History (Mason Core) (p. 142)</td>
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<td>American Landscapes in Fiction, Film, and History (Mason Core) (p. 142)</td>
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<td>INTS 311</td>
<td>The Mysteries of Migration: Consequences for Conservation (Mason Core) (p. 142)</td>
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<td>INTS 318</td>
<td>Exploring Virginia’s Watersheds</td>
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<td>INTS 334</td>
<td>Environmental Justice (Mason Core) (p. 142)</td>
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<td>INTS 337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
<td>3</td>
</tr>
<tr>
<td>INTS 338</td>
<td>Animal Rights and Humane Education</td>
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</table>
Synthesis or Capstone Experience Requirement (minimum 3 credits)

The purpose of the synthesis course is to provide students with the opportunity to synthesize the knowledge, skills and values gained from the Mason Core curriculum. Synthesis courses strive to expand students’ ability to master new content, think critically, and develop life-long learning skills across the disciplines. While it is not feasible to design courses that cover “all” areas of general education, synthesis courses should function as a careful alignment of disciplinary goals with a range of Mason Core learning outcomes.

Learning Outcomes for Synthesis:
The Mason Core synthesis course must address outcomes 1 and 2, and at least one outcome under 3. Upon completing a synthesis course, students will be able to:

1. Communicate effectively in both oral and written forms, applying appropriate rhetorical standards (e.g., audience adaptation, language, argument, organization, evidence, etc.)
2. Using perspectives from two or more disciplines, connect issues in a given field to wider intellectual, community or societal concerns
3. Apply critical thinking skills to:
   a. Evaluate the quality, credibility and limitations of an argument or a solution using appropriate evidence or resources, OR,
   b. Judge the quality or value of an idea, work, or principle based on appropriate analytics and standards

Required: One approved course.

Note: The course list reflects approved courses as of press time. See the most current list (http://masoncore.gmu.edu/general-education-at-mason-2) for updates.

### Synthesis Courses

<table>
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<td>Engaging the World: Anthropological Perspectives (Mason Core) (p. 142)</td>
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<td>ARTH 394</td>
<td>The Museum (Mason Core)</td>
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<td>AVT 385</td>
<td>EcoArt (Mason Core)</td>
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<td>AVT 497</td>
<td>Senior Project (Mason Core)</td>
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<td>AVT 498</td>
<td>Senior Design Project (Mason Core)</td>
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<td>Senior Advanced Design Project I (Mason Core)</td>
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<td>RS: Senior Advanced Design Project II (Mason Core)</td>
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<td>BINF 354</td>
<td>Foundations in Mathematical Biology (Mason Core)</td>
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<td>BIOL 301</td>
<td>Biology and Society (Mason Core)</td>
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<td>COMM 326</td>
<td>Rhetoric of Social Movements and Political Controversy (Mason Core) (p. 142)</td>
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<tr>
<td>COMM 362</td>
<td>Argument and Public Policy (Mason Core)</td>
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### Synthesis Courses (Cont.)

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<td>Understanding Integrative Studies</td>
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<td>INTS 446</td>
<td>Art, Beauty, and Culture (Mason Core) (p. 142)</td>
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<td>INTS 491</td>
<td>The Senior Capstone Experience</td>
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<td>INTS 492</td>
<td>Graduation Portfolio</td>
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<td>INTS 498</td>
<td>Field-Based Work</td>
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<td>IT 343</td>
<td>IT Project Management</td>
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<td>KINE 450</td>
<td>Research Methods</td>
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<td>LAS 499</td>
<td>Research Seminar in Latin American Studies (Mason Core)</td>
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<td>ME 444</td>
<td>Mechanical Design II (Mason Core)</td>
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<td>MGMT 313</td>
<td>Organizational Behavior</td>
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<td>MIS 330</td>
<td>Systems Analysis and Design</td>
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<td>MKTG 471</td>
<td>Marketing Management</td>
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<td>Music History in Society II</td>
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<td>Current Topics in Neuroscience</td>
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<td>Examination and Integration of Professional and Health Care Issues (Mason Core) (p. 142)</td>
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<td>NUTR 326</td>
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<td>PHYS 410</td>
<td>Computational Physics Capstone (Mason Core)</td>
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<td>PSYC 301</td>
<td>Research Methods in Psychology</td>
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<td>Principles of Learning</td>
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<td>Sensation, Perception, and Information Processing</td>
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<td>Russian Conversation and Composition</td>
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<td>Contemporary Sociological Theory</td>
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<td>THR 482</td>
<td>Advanced Screenplay Workshop</td>
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</table>
Capstone course or sequence should follow these guidelines:

- Learning outcomes defined by the degree program
- Allow students to apply critical thinking skills
- Minimum of 3 credits
- No more than 35 students in the course or equivalent instructional/mentored support
- Later in the curriculum, after a student has taken at least 85 credits, and at the 400 course level
- Emphasis on experiential/applied/integrative learning
- Allow students to apply critical thinking skills
- Learning outcomes defined by the degree program

**Required:** One approved upper-division course. Please speak with an advisor to determine the appropriate course to fulfill your major’s requirement.

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<td>RS: Integrated Conservation Strategies (Mason Core) (p. 142)</td>
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The purpose of the capstone course or sequence of courses is to provide a high impact, culminating element of an undergraduate education, helping students develop a more comprehensive and integrative understanding of their area of study and to utilize critical thinking skills. Capstone courses provide students opportunities to apply and demonstrate their knowledge and generally involve integrative/applied/experiential projects. Student learning in a Capstone course is assessed using a set of identified learning outcomes, and for critical thinking, as defined by the American Association of Colleges & Universities.
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Mason Core Engagement Series (ENCORE)

Creating more opportunities for students to make meaning of the Mason Core educational offerings, to draw greater connections to the larger university community, and to develop additional marketable skill sets, the Mason Core Engagement Series (ENCORE) begins Fall 2016 with the entering freshmen class. This program is an optional pathway for students interested in combining academic coursework with co-curricular activities towards a completion certificate in a specific area of engagement.

How does the Engagement Series work?

Academic connections
Each ENCORE program combines courses within the Mason Core categories with co-curricular activities that enhance classroom learning. Courses are identified in the catalog and in the schedule of classes, enabling a student to select those relevant to the specific engagement series. Out of the approximately 40 credits of Mason Core requirements, at least 18 credits must be related to the relevant ENCORE program.

Co-curricular connections
Working in conjunction with University Life and the Patriot Experience, each Engagement Series maps to one of four pathways – career readiness, civic learning/community engagement, global/multicultural, or well-being.

What happens once the Engagement Series is completed?

After completing the Mason Core classes and the Patriot Experience pathway, students will earn a Mason Core completion certificate. This achievement will be recognized on the academic transcript and honored at graduation.

What programs are currently available?

Mason Core: Engagement Series - Sustainability

Required: 19 credits

Sustainability programs at Mason seek to guide students as they critically assess the environmental, social, economic and ethical impacts of technology and policy decisions. The Engagement Series in Sustainability identifies Green Leaf Programs and Courses designated offerings that contribute significantly to students' understanding and practice of sustainability. These offerings extend beyond environmental management, natural resources protection and conservation studies alone to embrace economic development and social responsibility. Both sustainability-focused and sustainability-related courses may receive the green leaf designation.

Students who complete the Engagement Series in Sustainability will be able to:

1. Characterize the meaning of sustainability (including its focus on fulfilling needs and its social, economic and ecological dimensions).

2. Distinguish sustainable from unsustainable human activities and practices.

3. Integrate concepts and principles of sustainability to analyze and address complex societal issues.

4. Present working knowledge of the University’s sustainability history, goals, initiatives and pertinent decision-making processes.

5. Demonstrate the ability to lead and apply sustainability knowledge to make a positive societal impact on campus and/or in our community.

Requirements and approved courses
All students pursuing the sustainability engagement series must take one credit of INTS 295 Field-Based Work with the topic, ‘Leadership for Sustainability,’ as the series’ gateway. Additional requirements include 18 credits of Mason Core courses that have the Green Leaf Programs and Courses designation. (At least 6 Mason Core categories include one or more Green Leaf course options.)

The following courses have been identified as meeting the criteria for inclusion in the Engagement Series in Sustainability curriculum. The co-curricular section of the certificate is completed through the Patriot Experience, located online (http://patriotexperience.gmu.edu).

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PHYS 112 Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core) (p. 142) 1
SOCI 320 Globalization and Social Change (Mason Core) (p. 142) 3

Mason Core: Engagement Series - Well-Being
Required: 18 credits

The ability to thrive and succeed as students, employees, organizations, and in life, directly correlates to one’s sense of well-being. Mason has committed to being a “Well-Being University” focused on helping students, faculty and staff build lives with vitality, purpose, and resilience. The Engagement Series in Well-Being identifies offerings that contribute significantly to students’ understanding and practice of well-being. These offerings include both well-being-focused and well-being-related courses that are designated in the catalog and in the schedule of classes.

Students who complete the Engagement Series in Well-Being will be able to:

1. Describe and apply methods to enhance interpersonal communication and empathy. This will help the student to create sustainable, quality relationships and social support networks, at a one-on-one and small group level.

2. Demonstrate skills for communication (written, oral, and/or somatic) about well-being.

3. Demonstrate the ability to practice methods to enhance well-being, self-care, self-awareness, and awareness of others.

4. Articulate societal factors impacting community and global well-being, and/or to engage in practices which build greater sensitivity to the needs of others and the inter-dependent nature of life on the earth.

5. Describe the science of stress and its effects – both constructive and destructive – as well as the methodologies used to respond to stress, promote resilience, and enhance well-being.

The following courses have been identified as meeting the criteria for inclusion in the Engagement Series in Well-Being curriculum. To complete the certification, students must select a minimum of 18 credits across the categories offered below. Please note, in several of these courses only specific sections will count for meeting the requirement. No substitutions will be made. Information on courses that count at the section level will be included in the Schedule of Classes, found on Patriot Web. The co-curricular section of the certificate is completed through the Patriot Experience, located online (http://patriotexperience.gmu.edu).

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Only specific sections of the following courses will fulfill the well-being requirement:

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UNIVERSITY HONORS

Phone: 703-993-1110
Website: honorscollege.gmu.edu

Administration

• Zofia Burr, Dean
• Jan Allbeck, Associate Dean
• Anthony Hoefer, Assistant Dean

The Honors College

The Honors College focuses attention on the excellence of Mason’s student body and highlights the full spectrum of opportunities for academic achievement, professional development, and public service that Mason offers our most highly-motivated undergraduates. The Honors College provides talented students in all majors an enriched academic and social environment that enhances their college experience. Participation in challenging and innovative programs encourages student leadership and active engagement in local, national, and global communities.

Through the resources of the Honors College, the university provides students the support to excel academically and to pursue life-long goals. Included in these resources is the Honors College curriculum, which offers challenging courses that fulfill general education requirements. Senior faculty, including Mason’s Robinson Professors, teach small classes of students taking the curriculum. A select group of entering students is invited to become part of the University Scholars, a community of learners and leaders who receive Mason’s most competitive merit-based scholarships. All Honors College students have direct access to the Office of Fellowships, which provides advice and information to high-achieving Mason undergraduates and recent alumni about the application process for nationally competitive fellowships.

The benefits of being part of the Honors College include participating in a diverse living-learning community. Community programs include special lectures, events, and excursions on and off campus, as well as opportunities to take advantage of internships and cultural programs in Washington, D.C.

All students in the Honors College receive individualized academic advising, priority registration, and opportunities for close interaction with faculty for one-on-one mentoring and graduate and professional advising.

Faculty

Honors students have the opportunity to study with some of Mason’s most accomplished teachers and scholars from disciplines across the university, including Mason’s Robinson Professors.

Admissions & Policies

Admissions

Admission to the Honors College is based on a holistic review of each student’s academic performance as well as any other information included in the general application, such as rigor of coursework, standardized test scores, class rank, essay response, teacher recommendations, outstanding leadership, and commitment to community service. Space is limited in each class, and admissions criteria may vary according to the applicant pool in any given year.

Admission to the Honors College requires an application and is open to both incoming first-year and transfer students.

Policies

Continuation in Honors

A student whose GPA falls below 2.00 (1.80 in the first or second semester) will be placed on academic warning and may be ineligible to continue in the Honors College. Students are required to take and pass with a grade of "C" or higher either HNRS 110 Principles of Research and Inquiry or HNRS 302 Principles of Research and Inquiry for Transfer Students in their first semester in the Honors College to maintain their Honors College status.

Honors students are expected to maintain high standards of academic integrity and personal conduct. Students may be asked to withdraw from the program for a violation of the University Honor Code or any other conduct that reflects adversely on the Honors College.

Students who leave the Honors College before completion of the curriculum must meet Mason Core requirements and college-level requirements for their particular degree programs. On leaving the college and before registering for Mason Core courses, students should be advised on equivalencies between the honors courses they have completed and Mason Core requirements.

Transfer of Honors Credits

Because of the sequential and integrated nature of the program, honors courses may not correspond exactly to courses used to fulfill Mason Core requirements. A list of equivalencies is available in the Honors College office.

Requirements

Honors Curriculum

Starting in their first semesters on campus, Honors College students are challenged to identify, articulate, and evaluate multiple perspectives on questions of cultural, scientific, or global significance and to consider evidence that broadens their understanding and challenges their beliefs.

The Honors College inquiry-driven curriculum provides exceptionally motivated students with an alternative to the Mason Core. The Honors College curriculum allows students increased opportunities to pursue minors and other individual interests such as extended research. Students may also take honors sections of selected major courses as well as upper division courses offered by the Honors College. Beyond the Honors College requirements, students must satisfy all requirements of their college and major and Mason undergraduate program requirements for admissions, residency, credit hours, quality, and upper level credits.

Students who complete their Honors College curriculum with a GPA of 3.00 or higher and with no more than one C- or D in HNRS courses will receive a designation of Honors College Requirements Completed on their transcripts. Students whose GPA falls below 3.00 or who have a C- or D in multiple HNRS courses may complete the honors curriculum to satisfy
George Mason University

Mason Core requirements but will not receive honors recognition on their transcripts.

Students must take a minimum of 12 credits of HNRS courses from the Honors College at Mason. Students must also complete the Foundations; Inquiry in the Arts, Humanities, & Social Sciences; Civic Engagement; Multi-Disciplinary Challenges requirements.

Foundations

Introduction to Inquiry and Research: Honors students are introduced to methods for formulating, articulating, pursuing, and communicating research questions and the subsequent findings. Students must take one of the following during their first semester as an Honors College student:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS 110</td>
<td>Principles of Research and Inquiry</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>HNRS 302 Principles of Research and Inquiry for Transfer Students</td>
<td>3</td>
</tr>
</tbody>
</table>

Inquiry in the Arts, Humanities, & Social Sciences

Students will pursue answers to focused questions in the arts, humanities, and social sciences. Specific topics will vary by semester and section. (12 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS 122</td>
<td>Reading the Arts (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>HNRS 130</td>
<td>Identity, Community, and Difference (Topics Vary)</td>
<td></td>
</tr>
<tr>
<td>HNRS 131</td>
<td>Contemporary Social Issues (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>HNRS 240</td>
<td>Reading the Past (Topic Varies)</td>
<td></td>
</tr>
</tbody>
</table>

Civic Engagement

Students will explore their roles and responsibilities in society and/or identify and address issues of public or community concern. Specific topics will vary by semester and section (3 credits).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS 260</td>
<td>Society and Community Engagement Topics (Vary)</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>HNRS 261 Community Connection Practicum (Topics Vary)</td>
<td></td>
</tr>
</tbody>
</table>

Multi-Disciplinary Challenges

Students will address complex challenges through scholarly research (HNRS 360) or experiential learning (HNRS 361). Specific topics will vary by semester and section. (3 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS 360</td>
<td>Multi-Disciplinary Topics (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>HNRS 361 Multi-Disciplinary Practicum (Topic Varies)</td>
<td></td>
</tr>
</tbody>
</table>

Honors College Electives

Students are encouraged to explore fields in more depth through approved departmental honors courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 490</td>
<td>Independent Senior Research in Bioinformatics and Computational Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>BIOL 310</td>
<td>Biodiversity (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>BIOL 314</td>
<td>Introduction to Research Design and Analysis</td>
<td></td>
</tr>
<tr>
<td>BIOL 493</td>
<td>Honors Research in Biology</td>
<td></td>
</tr>
<tr>
<td>BUS 100</td>
<td>Business and Society (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>BUS 200</td>
<td>Global Environment of Business (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>CHEM 214</td>
<td>General Chemistry Laboratory II (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>CHEM 215</td>
<td>Undergraduate Research</td>
<td></td>
</tr>
<tr>
<td>CS 211</td>
<td>Object-Oriented Programming (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>CS 390</td>
<td>Research and Project Design Principles in Computing</td>
<td></td>
</tr>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>ENGR 107</td>
<td>Introduction to Engineering (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>HHS 492</td>
<td>RS: Internship in Clinical Research</td>
<td></td>
</tr>
<tr>
<td>MATH 116</td>
<td>Analytic Geometry and Calculus II (Honors)</td>
<td></td>
</tr>
<tr>
<td>MATH 215</td>
<td>Analytic Geometry and Calculus III (Honors)</td>
<td></td>
</tr>
<tr>
<td>MATH 216</td>
<td>Theory of Differential Equations</td>
<td></td>
</tr>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142) (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>STAT 350</td>
<td>Introductory Statistics II (Honors section only)</td>
<td></td>
</tr>
<tr>
<td>UNIV 495</td>
<td>RS: Undergraduate Research Scholars Program Seminar</td>
<td></td>
</tr>
</tbody>
</table>
Additional Requirements

- **Quantitative Reasoning**: Honors students must take at least one approved Quantitative Reasoning course. The Honors College quantitative reasoning requirement mirrors the mathematics or quantitative reasoning requirement of the student’s college and major. Students whose college and major do not have a quantitative reasoning or mathematics requirement must take one of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRT 125</td>
<td>Applied Quantitative Reasoning (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HNRT 225</td>
<td>Applied Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 110</td>
<td>Introductory Probability (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Analytic Geometry and Calculus I (Honors) (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 124</td>
<td>Calculus with Algebra/Trigonometry, Part B (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 313</td>
<td>Statistics for the Behavioral Sciences (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

- **Science**: The Honors College science requirement mirrors the science requirement of a student’s college and major.

- **Foreign Language**: Students pursuing BA degrees may have a foreign language requirement.

- Beyond the Honors College requirements, students must satisfy all requirements of their college and major and Mason undergraduate program requirements for admissions, residency, credit hours, quality, and upper-level credits.
COLLEGES AND SCHOOLS

- College of Education and Human Development
- College of Health and Human Services
- College of Humanities and Social Sciences
- College of Science
- College of Visual and Performing Arts
- Interdisciplinary Programs and Courses
- Schar School of Policy and Government
- School for Conflict Analysis and Resolution
- School of Business
- Volgenau School of Engineering

College of Education and Human Development

2100 Thompson Hall
Fairfax Campus
MSN: 4B3
Phone: 703-993-2010
Website: cehd.gmu.edu

Administration

- Mark Ginsberg, Dean
- Martin Ford, Senior Associate Dean
- Ellen Rodgers, Associate Dean for Student and Academic Affairs
- Anthony (Eamonn) Kelly, Associate Dean for Research
- Iris Robinson, Assistant Dean for Student and Academic Affairs

College Code: E1

The college is committed to excellence, innovation, and collaboration in research and the preparation of professionals for the highest levels of practice and service in diverse schools, organizations, and communities.

CEHD provides leadership in transforming schools, organizations, and communities through research, teaching, and collaboration. CEHD faculty members prepare scholars and practitioners through multidisciplinary programs of study that facilitate the understanding, integration, and application of knowledge. Through research activities, faculty and students expand and refine the knowledge base for teaching and learning. In response to the richness and complexity of a pluralistic society, CEHD infuses diversity into academic programs and research. The faculty develops and supports knowledgeable, caring, and reflective professionals who facilitate excellence and equity for all learners. CEHD students and faculty demonstrate their growth and development in ways meaningful to their communication and professional organizations. Innovative programs and the integration of technology provide opportunities for students to develop, examine, evaluate, and practice professional knowledge, skills, and dispositions.

Undergraduate Degrees, Minors, and Certificates

CEHD offers undergraduate degrees, minors, and certificates. The School of Recreation, Health, and Tourism within the College of Education and Human Development collaborates with the College of Humanities and Social Sciences (p. 305), the School of Business (p. 888), the College of Science (p. 613), the Volgenau School of Engineering (p. 1011), the College of Visual and Performing Arts (p. 803), and the School for Conflict Analysis and Resolution (p. 936) to offer seven minors in interdisciplinary areas of study. Students may elect to take a minor in addition to their major field of study. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

In addition, CEHD collaborates with the College of Science (p. 613) (Departments of Atmospheric, Oceanic, and Earth Sciences; Biology; Chemistry and Biochemistry; Mathematical Sciences; and Physics and Astronomy) to offer undergraduate secondary education certificates and the College of Visual and Performing Arts (p. 803) (Schools of Music and Theater) to provide programs in music and theater education that can lead to VA teaching licensure. CEHD also collaborates with School of Integrative Studies (p. 574) to support three interdisciplinary degree concentrations which prepare students for graduate study in education.

Graduate Degrees and Certificates

CEHD offers one doctoral degree, as well as master's degrees and graduate certificates.

Requirements & Policies

Policies

In addition to the policies stated in Academic Policies (p. 77), the following policies and procedures apply to all students in the college.

Communication Policy

All correspondence from the program, school, college, and university administration is sent to the student’s official Mason e-mail account. Students must use their Mason e-mail account to communicate with their programs and other administrative units.

CEHD Academic Policies

Students are ultimately responsible for their academic progress towards their degrees and/or certificates. They are strongly advised to consult Academic Policies (p. 77) for information concerning university-wide requirements for degree and non-degree students in addition to those for this college. Students with questions regarding academic policies and college-level requirements should contact the CEHD Student and Academic Affairs Office (Thompson Hall, Suite 2300; 703-993-2080; cehdsaa@gmu.edu). Additional policy information and forms are available online. (http://cehd.gmu.edu/saa)

CEHD Grading Policy

All CEHD undergraduate and graduate students are held to the university grading policies as described in AP.3 Grading (p. 84). Those students enrolled in a CEHD licensure program have higher minimum grade requirements which are detailed in each specific program's page.

Grade Appeals

Students may appeal grades that they believe were assigned unjustly or were based on unclear criteria in accord with Academic Policies (p. 77). Grade appeals should initially be directed to the Academic Program Office (Thompson Hall, Suite 2300; cehdsaa@gmu.edu). Additional policy information and forms are available online. (http://cehd.gmu.edu/saa)
Student and Academic Affairs for review. The Associate Dean's decision is considered final and not subject to further appeal.

Study Elsewhere

Once enrolled in degree status at Mason, undergraduate students with fewer than 60 hours of transfer coursework (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Global Education Office) may take up to twelve credits of coursework in CEHD disciplines at another institution. Students with 60 or more hours of transfer coursework are not permitted to take additional coursework in CEHD disciplines at another institution. A student may seek permission for additional hours beyond these limits for summer registration if his/her permanent residence is more than fifty miles from the Fairfax campus. Students who enroll elsewhere without advance written permission will not receive transfer credit for the coursework taken at another institution unless they re-apply for admission to Mason as transfer applicants and meet all priority deadlines. Re-admission is not guaranteed and transfer credit is awarded based upon course equivalencies in effect at the time of re-admission. Courses previously attempted at Mason (including withdrawals) cannot be taken elsewhere.

Professional Teacher Licensure

CEHD is responsible for professional courses, special standards, and licensure recommendations for students completing state-approved (Virginia) licensure programs that prepare teachers, administrators, counselors, and related instructional personnel.

Initial teacher licensure is available at the undergraduate level in secondary education: biology, chemistry, earth science, English, health and physical education, mathematics, music, and physics. Initial teacher licensure is available at the graduate level in art, early childhood, elementary, English as a second language, foreign language, secondary, and theater arts. The Special Education Program offers initial teacher licensure exclusively through graduate certificates that include Adapted Curriculum, Early Childhood Special Education, General Curriculum, and Visual Impairments.

For more information please contact the CEHD Office of Admissions (Thompson Hall, Suite 2200; 703-993-2892; cehdgrad@gmu.edu). Additional information is available online (http://cehd.gmu.edu/admissions).

Notes on Background Checks and Licensure:

The majority of Mason CEHD programs require multiple field experiences. Our school and agency partners require Mason students to be fingerprinted and pass a criminal background check prior to field experience work. Students must assume the risk that classes may be deferred and their program delayed due to the individual severity of notations on such a check and review by individual agencies.

George Mason University will verify completion of the requirements of a Virginia Department of Education (VDOE) state-approved preparation program at the graduate or undergraduate level. Such verification does not guarantee the issuance of Virginia Collegiate Professional, Postgraduate Professional, or Pupil Personnel license from the Commonwealth of Virginia. It is solely the student's responsibility to comply with all requirements for licensure by the Commonwealth. Under Virginia law, a social security number is required for licensure.

Academic Units

- Graduate School of Education
- School of Recreation, Health, and Tourism

Graduate School of Education

Phone: 703-993-2892
Website: cehd.gmu.edu

The Graduate School of Education (GSE) offers one doctoral degree, six master's degrees, one bachelor's degree, nine minors, sixteen accelerated master's programs as well as many undergraduate and graduate certificates. Within each degree program students have the option to choose a concentration that best meets their interests or needs. Additionally, students may pursue coursework leading to initial teacher licensure. Students can pursue a Master's degree and one graduate certificate concurrently.

Collaborative Undergraduate Degree Licensure Programs

GSE supports undergraduate students from a variety of disciplines interested in education and teacher licensure. Eight collaborative undergraduate degree licensure programs are available including undergraduate certificates and the music and theater programs below. For more information, contact us (preteach@gmu.edu) or visit our website (http://cehd.gmu.edu/undergraduate/think-you-want-to-be-a-teacher).

Concentration in Music Education (PK–12)

The BM in Music (p. 862) with a concentration in Music Education allows students to obtain certification to teach in Virginia public school systems. Students may follow an instrumental or choral/general music emphasis in the curriculum. For details, see School of Music (p. 849).

Concentration in Theater Education (PK–12)

Upon successful completion of the requirements for a BA in Theater (p. 882) with a concentration in Theater Education for Theater Arts PK-12, students may pursue coursework that will allow them to attain licensure to teach Theater Arts in Virginia public school systems. For details, see School of Theater (p. 878).

Collaborative Graduate Degree Licensure Programs

Teaching Theatre Licensure (PK–12)

Upon successful completion of the requirements for a Teaching Theatre PK-12 Graduate Certificate (p. 881), students can obtain licensure to teach Theater in Virginia public school systems. For details, see School of Theater (p. 878).

Visual Arts Licensure (PK–12)

Upon successful completion of the requirements for an Art Education Graduate Certificate (p. 831), students can obtain licensure to teach Art in Virginia public school systems. For details, see School of Art (p. 825).
Accelerated Master’s Programs
The Graduate School of Education collaborates with undergraduate programs to offer sixteen accelerated Master’s programs. For more information, see the website. (http://cehd.gmu.edu/bachelors-accelerated-masters-program)

Faculty

School Faculty

Professors
Bemak, Brigham, Brozo, Buehl, Burns, R. Chung, Clark, Dabbagh, DeMulder, Fox, Green, Haley, Hjalmarson, Holton, Kelly, Kidd, King-Sears, Kitsantas, Mason, Peters-Burton, Reybold, Samaras, Shaklee, Zenkov

Associate Professors

Assistant Professors

Instructors
Rioux-Bailey, Taylor

Programs

- American Sign Language Minor
- Applied Behavior Analysis Graduate Certificate
- Assistive Technology Minor
- Autism Spectrum Disorders Graduate Certificate
- Counseling Graduate Certificate
- Counseling and Development, MEd
- Curriculum and Instruction Graduate Certificate
- Curriculum and Instruction Undergraduate Certificate
- Curriculum and Instruction, MEd
- Early Childhood Education PK-3 Licensure Undergraduate Certificate
- Early Childhood Education for Diverse Learners Minor
- Early Childhood Education for Diverse Learners, BSEd (pending SCHEV approval)
- Early Childhood Special Education Licensure Undergraduate Certificate
- Education Assessment, Evaluation, and Data Literacy Graduate Certificate
- Education Leadership Graduate Certificate
- Education Leadership, MEd
- Education Policy Graduate Certificate (pending SCHEV approval)
- Education, PhD
- Educational Psychology Minor
- Educational Psychology, MS
- Elementary Education, PK-6 Licensure, BSEd (pending SCHEV approval)
- Foreign Language Licensure Graduate Certificate
- Human Development and Family Science Minor (CEHD)
- Human Development and Family Science, BA (CEHD)
- International ESOL / ESL Teacher Education Graduate Certificate
- Learning Technologies Graduate Certificate
- Literacy / Reading Instruction Graduate Certificate
- Mild Disabilities Minor
- Psychology, MA (CEHD)
- Research Methods Graduate Certificate
- School Psychology Graduate Certificate
- Severe Disabilities Minor
- Special Education Graduate Certificate
- Special Education Leadership Graduate Certificate
- Special Education, BSEd (pending SCHEV approval)
- Special Education, MEd
- Visual Impairment and Blindness Minor

Applied Behavior Analysis Graduate Certificate

Banner Code: E1-CERG-ABAC

Academic Advising
Phone: 703-993-3670
Email: speced@gmu.edu
Website: gse.gmu.edu/special-education/behavior-analyst-certification

This 18-credit non-licensure certificate is designed to increase the professional training of individuals responsible for designing, implementing, and monitoring behavioral treatment programs in schools, agencies (such as psychiatric hospitals), and training centers for people with severe disabilities.

This graduate certificate may be pursued on a part-time basis only, unless students complete the certificate in conjunction with the optional practicum or Master’s in Special Education (p. 216). With practicum or concurrent enrollment in the MEd, this certificate may be pursued on a full-time basis. The Behavior Analyst Certification Board® (BACB®) requires one of the following Master’s degrees in addition to the Post-Master’s Certificate:

1. Education
2. Psychology
3. Behavior analysis

Those not holding these degrees may not be eligible to earn BCBA® certification and should contact the Behavior Analyst Certification Board® (BACB®) for further information.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important
Assistive Technology Minor

Banner Code: AT

Academic Advising
Phone: 703-993-3670
Email: atprog@gmu.edu
Website: gse.gmu.edu/assistive-technology/at-program-options/at-minor-program

This 15-credit minor provides undergraduate students with background knowledge in assistive technology.

Admissions & Policies

Policies
At least eight of the required 15 credits must be applied only to this minor and may not be used to fulfill requirements of the student’s major, concentration, an undergraduate certificate, or another minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Admissions & Policies

Minor Requirements

Total credits: 15

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 410</td>
<td>Introduction to Assistive Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 421</td>
<td>Augmentative Communication</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 422</td>
<td>Assistive Technology for Individuals with Sensory Impairments</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 423</td>
<td>Accessibility and Input Modifications</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 203</td>
<td>Disability in American Culture (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

Autism Spectrum Disorders Graduate Certificate

Banner Code: E1-CERG-ASD

Academic Advising
Phone: 703-993-3670
Email: speced@gmu.edu
Website: gse.gmu.edu/special-education/autism-spectrum-disorders

This 15-credit non-licensure certificate provides training in topic areas required to implement instructional programs for individuals with autism across their lifespan. The certificate is appropriate for special educators, general educators, related service providers, parents, and others who provide instruction to students with autism in a variety of educational, community and vocational settings.

This graduate certificate is offered in an asynchronous online format and may only be pursued on a part-time basis.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure page (https://irr2.gmu.edu/gedt/Autism_Spectrum_Disorders/Gedt.html).

Admissions & Policies

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).
Certificate Requirements

Total credits: 15

This certificate may be pursued on a part-time basis only.

Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 620</td>
<td>Supporting the Behavior and Sensory Needs of Individuals with Autism</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 634</td>
<td>Characteristics of Individuals with Autism</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 635</td>
<td>Interventions for Individuals with Autism</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 636</td>
<td>Supporting Communication and Literacy for Individuals with Autism</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 637</td>
<td>Autism Across the Lifespan: Collaboration with Critical Partners</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

Counseling Graduate Certificate

Banner Code: E1-CERG-CNSL

Academic Advising

Phone: 703-993-2087
Email: counsel@gmu.edu
Website: gse.gmu.edu/counseling/counseling-licensure-post-masters-graduate-certificate

Concentration in Licensure (Post-Master’s) (LCNS)

Coursework

Once accepted into the post-master’s graduate certificate program, students individually tailor their coursework with an advisor to meet licensure requirements and may enroll for the courses listed below or other core program courses as needed. Students must successfully complete (pass) a minimum of nine counseling and development credits with a grade of B or better prior to enrolling in practicum or internship.

Virginia School Counselor

Choose 15 credits from the following Virginia School Counseling courses listed below. Students studying for the MEd in Counseling and Development (p. 166) may also meet Virginia School Counselor licensure requirements through coursework offered under the MEd’s School Counseling PK-12 concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCD 606</td>
<td>Counseling Children and Adolescents</td>
<td></td>
</tr>
<tr>
<td>EDCD 611</td>
<td>Introduction to Ethical and Legal Issues in School Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 626</td>
<td>Principles and Practices of School Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 755</td>
<td>Practicum in Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 791</td>
<td>Internship in Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 797</td>
<td>Advanced Topics in Education</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

Licensed Professional Counselor

Choose 15 credits from the following Licensed Professional Counselor courses listed below. Students studying for the MEd in Counseling and Development (p. 166) may also meet Virginia Licensed Professional Counselor licensure requirements through coursework offered under the MEd’s Community Agency Counseling concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCD 609</td>
<td>Clinical Mental Health Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 652</td>
<td>Introduction to Substance Abuse Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 654</td>
<td>Counseling and Ethics in Community Agencies</td>
<td></td>
</tr>
<tr>
<td>EDCD 656</td>
<td>Diagnosis and Treatment Planning for Mental Health Professionals</td>
<td></td>
</tr>
<tr>
<td>EDCD 658</td>
<td>Couples and Family Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 755</td>
<td>Practicum in Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 791</td>
<td>Internship in Counseling</td>
<td></td>
</tr>
<tr>
<td>EDCD 797</td>
<td>Advanced Topics in Education</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

Admissions & Policies

Admissions

The Counseling Graduate Certificate is open only to graduates of the GMU Counseling and Development program.

Policies

For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 90).
Counseling and Development, MEd

Banner Code: E1-MED-CNDV

Academic Advising

Phone: 703-993-2087
Email: counsel@gmu.edu
Website: gse.gmu.edu/counseling/

This master’s program emphasizes the integration of theory and practice and culminates with an internship in an appropriate setting. Students may choose one of two concentrations: Clinical Mental Health Counseling or School Counseling.

Admissions & Policies

Policies
Grading
Students enrolled in this degree program must earn a B or higher in counseling courses and in all licensure coursework, including practicum and internship courses. Students are permitted to repeat a course only once.

Requirements

Degree Requirements
Total credits: 60

Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDCD 525</td>
<td>Advanced Human Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 601</td>
<td>Introduction to Research in Counseling</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 602</td>
<td>Foundations in Counseling</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 603</td>
<td>Counseling Theories and Practice</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 604</td>
<td>Assessment and Appraisal in Counseling</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 608</td>
<td>Group Processes and Analyses</td>
<td>4</td>
</tr>
<tr>
<td>EDCD 610</td>
<td>Career and Educational Counseling</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 619</td>
<td>Trauma and Crisis Counseling</td>
<td>3</td>
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<tr>
<td>EDCD 621</td>
<td>School, Family, and Community Collaboration</td>
<td>2</td>
</tr>
<tr>
<td>EDCD 628</td>
<td>Counseling and Social Justice</td>
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<td>EDCD 660</td>
<td>Multicultural Counseling</td>
<td>3</td>
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<tr>
<td>Total Credits</td>
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Concentration in Clinical Mental Health Counseling (CMH)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>EDCD 609</td>
<td>Clinical Mental Health Counseling</td>
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<td>EDCD 656</td>
<td>Diagnosis and Treatment Planning for Mental Health Professionals</td>
<td>3</td>
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<tr>
<td>EDCD 658</td>
<td>Couples and Family Counseling</td>
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<td>EDCD 750</td>
<td>Practicum in Mental Health Counseling</td>
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<td>EDCD 792</td>
<td>Internship in Mental Health Counseling I</td>
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<td>EDCD 793</td>
<td>Internship in Mental Health Counseling II</td>
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<tr>
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<td>Total Credits</td>
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</table>

Concentration in School Counseling (SC)

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>EDCD 606</td>
<td>Counseling Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 611</td>
<td>Introduction to Ethical and Legal Issues in School Counseling</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 626</td>
<td>Principles and Practices of School Counseling</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 613</td>
<td>Introduction to School Counseling</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 615</td>
<td>School-Based Mental Health</td>
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<tr>
<td>EDCD 751</td>
<td>Practicum in School Counseling</td>
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<td>EDCD 794</td>
<td>Internship in School Counseling I</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 795</td>
<td>Internship in School Counseling II</td>
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<tr>
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<td></td>
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<td>27</td>
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</table>

Curriculum and Instruction

Undergraduate Certificate

Banner Code: E1-CERB-CRIN

Academic Advising

Phone: 703-993-2080
Email: preteach@gmu.edu
Website: gse.gmu.edu/secondary-education-6-12/academics/

Available Concentrations

Concentration in Elementary Education PK-6 Licensure
This 39-credit concentration is designed for students who are seeking a major outside of elementary education, but wish to add on licensure for teaching positions in PreK-6 classrooms in Virginia.

Concentration in Secondary Education – Biology (6-12)
This 27-credit concentration is available only to students pursuing a BA (p. 643) or BS (p. 648) in Biology. Students who complete both the BA or BS in Biology and this concentration will be considered Virginia state-approved educator preparation program completers and will be eligible for recommendation for an initial VA teaching license in Secondary Education (6-12) Biology.

Concentration in Secondary Education – Chemistry (6-12)
This 27-credit concentration is available only to students pursuing a BA (p. 662)or BS (p. 667) in Chemistry. Students who complete both the BA (p. 662)or BS (p. 667) in Chemistry and this concentration will be
considered Virginia state-approved educator preparation program completers and will be eligible for recommendation for an initial VA teaching license in Secondary Education (6-12) Chemistry.

**Concentration in Secondary Education – Earth Science (6-12)**

This 27 to 34 credit concentration is available only to students pursuing a BS in Earth Science (p. 627). Students who complete both the BS in Earth Science (p. 627) and this concentration will be considered Virginia state-approved educator preparation program completers and will be eligible for recommendation for an initial VA teaching license in Secondary Education (6-12) Earth Science.

**Concentration in Secondary Education – English (6-12)**

This 38-credit concentration is available only to students pursuing a BA in English (p. 370). Students who complete both the BA in English and this concentration will be considered Virginia state-approved educator preparation program completers and will be eligible for recommendation for an initial VA teaching license in Secondary Education (6-12) English.

**Concentration in Secondary Education – Mathematics (6-12)**

This 38-credit concentration is available only to students pursuing a BA (p. 743) or BS (p. 748) in Mathematics. Students who complete both the BA (p. 743) or BS (p. 748) in Mathematics and this concentration will be considered Virginia state-approved educator preparation program completers and will be eligible for recommendation for an initial VA teaching license in Secondary Education (6-12) Mathematics.

**Concentration in Secondary Education – Physics (6-12)**

This 26-credit concentration is available only to students pursuing a BS in Physics (p. 764). Students who complete both the BS in Physics (p. 764) and this concentration will be considered Virginia state-approved educator preparation program completers and will be eligible for recommendation for an initial VA teaching license in Secondary Education (6-12) Physics.

**Requirements**

**Certificate Requirements**

Total credits: 26-39

This certificate may be pursued on a full- or part-time basis.

Students pursuing this graduate certificate may choose from any of the following concentrations:

**Concentration in Elementary Education PK-6 Licensure (EEPK)**

Total credits: 39

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELED 342</td>
<td>Foundations of Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>ELED 443</td>
<td>Children, Family, Culture, and Schools, 4-12 Year Olds</td>
<td>3</td>
</tr>
<tr>
<td>ELED 444</td>
<td>Curriculum and Methods of Teaching in Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>ELED 445</td>
<td>Differentiating Elementary Methods and Management</td>
<td>3</td>
</tr>
<tr>
<td>ELED 452</td>
<td>Mathematics Methods for the Elementary Classroom (must register for 3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>ELED 453</td>
<td>Science Methods for the Elementary Classroom (must register for 3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>ELED 454</td>
<td>Methods of Teaching Social Studies and Integrating Fine Arts in the Elementary Classroom</td>
<td>3</td>
</tr>
<tr>
<td>ELED 455</td>
<td>Literacy Teaching and Learning in Diverse Elementary Classrooms I</td>
<td>3</td>
</tr>
<tr>
<td>ELED 456</td>
<td>Literacy Teaching and Learning in Diverse Elementary Classrooms II (must register for 3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>ELED 459</td>
<td>Research and Assessment in Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>ELED 480</td>
<td>Practicum in Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>ELED 490</td>
<td>Internship in Elementary Education (Mason Core) (p. 142) (must register for 6 credits in Spring semester)</td>
<td>6</td>
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</tbody>
</table>

Total Credits 39
### Concentration in Secondary Education – Biology (6-12) (SEEB)
Total credits: 27

**Discipline-Specific Content Competencies Coursework**
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major either for the BA (p. 643) or BS (p. 648) in Biology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 430</td>
<td>Advanced Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>or BIOL 431</td>
<td>Advanced Human Anatomy and Physiology II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 4

**Teacher Licensure Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 473</td>
<td>Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 483</td>
<td>Advanced Methods of Teaching Science in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 490</td>
<td>Student Teaching in Education</td>
<td>6</td>
</tr>
<tr>
<td>EDCI 491</td>
<td>Internship Seminar in Secondary Training</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 419</td>
<td>Literacy in the Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 372</td>
<td>Human Development, Learning, and Teaching (Mason Core) p. 142</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 422</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 23

### Concentration in Secondary Education – Chemistry (6-12) (SEEC)
Total credits: 27

**Discipline-Specific Content Competencies Coursework**
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major either for the BA (p. 662) or BS (p. 667) in Chemistry.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 441</td>
<td>Properties and Bonding of Inorganic Compounds</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 445</td>
<td>Inorganic Preparations and Techniques</td>
<td></td>
</tr>
<tr>
<td>CHEM 446</td>
<td>Bioinorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 467</td>
<td>The Chemistry of Enzyme-Catalyzed Reactions</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 4

**Teacher Licensure Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 473</td>
<td>Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 483</td>
<td>Advanced Methods of Teaching Science in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 490</td>
<td>Student Teaching in Education</td>
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</tr>
<tr>
<td>EDCI 491</td>
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<td>2</td>
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<tr>
<td>EDUC 372</td>
<td>Human Development, Learning, and Teaching (Mason Core) p. 142</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 422</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 23

### Concentration in Secondary Education – Earth Science (6-12) (SEES)
Total credits: 36-38

**Discipline-Specific Content Competencies Coursework for BS in Earth Sciences students**
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major (p. 628), with a total of 32 credits from the four fields of Geology, Astronomy, Oceanography, and Meteorology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 103</td>
<td>Astronomy (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 111</td>
<td>Introductory Astronomy: The Solar System (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 112</td>
<td>Introductory Astronomy Lab: The Solar System (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 113</td>
<td>Introductory Astronomy: Stars, Galaxies, and the Universe (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 114</td>
<td>Introductory Astronomy Lab: Stars, Galaxies, and the Universe (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 115</td>
<td>Finding New Worlds (Mason Core)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 4

1 This course must also be paired with either of the following labs: ASTR 112 Introductory Astronomy Lab: The Solar System (Mason Core) (p. 142) or ASTR 114 Introductory Astronomy Lab: Stars, Galaxies, and the Universe (Mason Core) (p. 142).

**Discipline-Specific Content Competencies Coursework for BA in Geology students**
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major (p. 628), with a total of 32 credits from the four fields of Geology, Astronomy, Oceanography, and Meteorology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 111 &amp; CLIM 112</td>
<td>Introduction to the Fundamentals of Atmospheric Science (Mason Core) (p. 142) and Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>GGS 309</td>
<td>Meteorology and Climate</td>
<td></td>
</tr>
</tbody>
</table>

### Concentration in Secondary Education – Biology (6-12) (SEEB)
Total credits: 27

**Discipline-Specific Content Competencies Coursework**
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major either for the BA (p. 643) or BS (p. 648) in Biology.

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
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</table>

Total Credits 4

**Teacher Licensure Coursework**

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<thead>
<tr>
<th>Code</th>
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<tbody>
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<td>EDCI 473</td>
<td>Teaching Science in the Secondary School</td>
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<td>EDCI 483</td>
<td>Advanced Methods of Teaching Science in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 490</td>
<td>Student Teaching in Education</td>
<td>6</td>
</tr>
<tr>
<td>EDCI 491</td>
<td>Internship Seminar in Secondary Training</td>
<td>2</td>
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<tr>
<td>EDRD 419</td>
<td>Literacy in the Content Areas</td>
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<td>Human Development, Learning, and Teaching (Mason Core) p. 142</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 422</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 23

### Concentration in Secondary Education – Chemistry (6-12) (SEEC)
Total credits: 27

**Discipline-Specific Content Competencies Coursework**
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major either for the BA (p. 662) or BS (p. 667) in Chemistry.

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
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<td>CHEM 467</td>
<td>The Chemistry of Enzyme-Catalyzed Reactions</td>
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</table>

Total Credits 4

**Teacher Licensure Coursework**

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
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<td>3</td>
</tr>
<tr>
<td>EDCI 483</td>
<td>Advanced Methods of Teaching Science in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 490</td>
<td>Student Teaching in Education</td>
<td>6</td>
</tr>
<tr>
<td>EDCI 491</td>
<td>Internship Seminar in Secondary Training</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 419</td>
<td>Literacy in the Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 372</td>
<td>Human Development, Learning, and Teaching (Mason Core) p. 142</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 422</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 23

### Concentration in Secondary Education – Earth Science (6-12) (SEES)
Total credits: 36-38

**Discipline-Specific Content Competencies Coursework for BS in Earth Sciences students**
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major (p. 628), with a total of 32 credits from the four fields of Geology, Astronomy, Oceanography, and Meteorology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 103</td>
<td>Astronomy (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 111</td>
<td>Introductory Astronomy: The Solar System (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 112</td>
<td>Introductory Astronomy Lab: The Solar System (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 113</td>
<td>Introductory Astronomy: Stars, Galaxies, and the Universe (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 114</td>
<td>Introductory Astronomy Lab: Stars, Galaxies, and the Universe (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 115</td>
<td>Finding New Worlds (Mason Core)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 4

1 This course must also be paired with either of the following labs: ASTR 112 Introductory Astronomy Lab: The Solar System (Mason Core) (p. 142) or ASTR 114 Introductory Astronomy Lab: Stars, Galaxies, and the Universe (Mason Core) (p. 142).

**Discipline-Specific Content Competencies Coursework for BA in Geology students**
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major (p. 628), with a total of 32 credits from the four fields of Geology, Astronomy, Oceanography, and Meteorology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 111 &amp; CLIM 112</td>
<td>Introduction to the Fundamentals of Atmospheric Science (Mason Core) (p. 142) and Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>GGS 309</td>
<td>Meteorology and Climate</td>
<td></td>
</tr>
</tbody>
</table>
## Astronomy
Select three to four credits from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 111 &amp; ASTR 112</td>
<td>Introductory Astronomy: The Solar System (Mason Core) (p. 142) and Introductory Astronomy Lab: The Solar System (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ASTR 113 &amp; ASTR 114</td>
<td>Introductory Astronomy: Stars, Galaxies, and the Universe (Mason Core) (p. 142) and Introductory Astronomy Lab: Stars, Galaxies, and the Universe (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ASTR 115</td>
<td>Finding New Worlds (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ASTR 103</td>
<td>Astronomy (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9-11

## Teacher Licensure Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EDCI 473</td>
<td>Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 483</td>
<td>Advanced Methods of Teaching Science in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 490</td>
<td>Student Teaching in Education</td>
<td>6</td>
</tr>
<tr>
<td>EDCI 491</td>
<td>Internship Seminar in Secondary Training</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 419</td>
<td>Literacy in the Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 372</td>
<td>Human Development, Learning, and Teaching (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 422</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 23

## Concentration in Secondary Education – English (6-12) (SEEN)
Total credits: 38

## Discipline-Specific Content Competencies Coursework

Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the English major (p. 370).

### Literature
Select one American literature course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 315</td>
<td>Folklore and Folklife</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 340</td>
<td>Early American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 341</td>
<td>Literature of the American Renaissance</td>
<td></td>
</tr>
<tr>
<td>ENGH 343</td>
<td>Development of the American Novel to 1914</td>
<td></td>
</tr>
<tr>
<td>ENGH 344</td>
<td>Development of the American Novel since 1914</td>
<td></td>
</tr>
<tr>
<td>ENGH 345</td>
<td>American Drama of the 20th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 346</td>
<td>American Poetry of the 20th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 348</td>
<td>Beginnings of African American Literature Through 1865</td>
<td></td>
</tr>
<tr>
<td>ENGH 349</td>
<td>African American Literature: Reconstruction to 1903</td>
<td></td>
</tr>
<tr>
<td>ENGH 350</td>
<td>African American Literature Through 1946</td>
<td></td>
</tr>
<tr>
<td>ENGH 351</td>
<td>Contemporary African American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 355</td>
<td>Recent American Fiction</td>
<td></td>
</tr>
<tr>
<td>ENGH 356</td>
<td>Recent American Poetry</td>
<td></td>
</tr>
<tr>
<td>ENGH 442</td>
<td>Topics: American Literary Periods</td>
<td></td>
</tr>
</tbody>
</table>

Select one British literature course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 320</td>
<td>Literature of the Middle Ages</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 321</td>
<td>English Poetry and Prose of the 16th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 322</td>
<td>Shakespeare</td>
<td></td>
</tr>
<tr>
<td>ENGH 323</td>
<td>Shakespeare: Special Topics</td>
<td></td>
</tr>
<tr>
<td>ENGH 324</td>
<td>English Renaissance Drama</td>
<td></td>
</tr>
<tr>
<td>ENGH 325</td>
<td>English Poetry and Prose of the 17th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 330</td>
<td>Augustan Age: 1660-1745</td>
<td></td>
</tr>
<tr>
<td>ENGH 331</td>
<td>Age of Sensibility: 1745-1800</td>
<td></td>
</tr>
<tr>
<td>ENGH 332</td>
<td>Restoration and 18th Century Drama</td>
<td></td>
</tr>
<tr>
<td>ENGH 333</td>
<td>British Novel of the 18th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 334</td>
<td>British Poetry of the Romantic Period</td>
<td></td>
</tr>
<tr>
<td>ENGH 335</td>
<td>Prose and Poetry of the Victorian Period</td>
<td></td>
</tr>
<tr>
<td>ENGH 336</td>
<td>British Novel of the 19th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 337</td>
<td>British Poetry after 1900</td>
<td></td>
</tr>
<tr>
<td>ENGH 338</td>
<td>British Novel after 1900</td>
<td></td>
</tr>
<tr>
<td>ENGH 339</td>
<td>British and Irish Drama after 1900</td>
<td></td>
</tr>
<tr>
<td>ENGH 421</td>
<td>Topics in Medieval and Renaissance Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 422</td>
<td>Chaucer</td>
<td></td>
</tr>
<tr>
<td>ENGH 431</td>
<td>Topics: British Literary Periods</td>
<td></td>
</tr>
</tbody>
</table>

Select one world literature course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 360</td>
<td>Continental Fiction, 1770-1880</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 361</td>
<td>Continental Fiction, 1880-1950</td>
<td></td>
</tr>
<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 366</td>
<td>The Idea of a World Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 367</td>
<td>World Literatures in English</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

### Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 306</td>
<td>General Linguistics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>LING 307</td>
<td>English Grammar</td>
<td></td>
</tr>
<tr>
<td>or ENGH 307</td>
<td>English Grammar</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

## Teacher Licensure Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 469</td>
<td>Teaching English in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 479</td>
<td>Advanced Methods of Teaching English in the Secondary School</td>
<td></td>
</tr>
<tr>
<td>EDCI 490</td>
<td>Student Teaching in Education</td>
<td>6</td>
</tr>
<tr>
<td>EDCI 491</td>
<td>Internship Seminar in Secondary Training</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 419</td>
<td>Literacy in the Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 372</td>
<td>Human Development, Learning, and Teaching (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>
Concentration in Secondary Education – Mathematics (6-12) (SEEM)
Total credits: 38

Discipline-Specific Content Competencies Mathematics Coursework
All other discipline-specific content competencies coursework should be satisfied with the core requirements of the BA (p. 743) or BS (p. 748) in Mathematics, with the exception of Discrete Math for the BS degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 321</td>
<td>Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>Calculus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 315</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 316</td>
<td>Advanced Calculus II</td>
<td></td>
</tr>
<tr>
<td>Discrete Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 325</td>
<td>Discrete Mathematics II</td>
<td></td>
</tr>
<tr>
<td>Euclidean and Non-Euclidean Geometry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 302</td>
<td>Foundations of Geometry</td>
<td>3</td>
</tr>
</tbody>
</table>

Probability or Statistics
Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 351</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>MATH 352</td>
<td>Statistics</td>
<td></td>
</tr>
<tr>
<td>MATH 453</td>
<td>Advanced Mathematical Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 350</td>
<td>Introductory Statistics II</td>
<td></td>
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</tbody>
</table>

Total Credits: 15

Teacher Licensure Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 372</td>
<td>Teaching Mathematics in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 472</td>
<td>Advanced Methods for Teaching Mathematics in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 490</td>
<td>Student Teaching in Education</td>
<td>6</td>
</tr>
<tr>
<td>EDCI 491</td>
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<tr>
<td>EDUC 372</td>
<td>Human Development, Learning, and Teaching (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>EDUC 422</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 23

Concentration in Secondary Education – Physics (6-12) (SEEP)
Total credits: 26

Discipline-Specific Content Competencies Coursework
Coursework is additional to discipline-specific content competencies coursework satisfied with the core requirements of the major (p. 764).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 390</td>
<td>Topics in Physics</td>
<td>3</td>
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</tbody>
</table>

Total Credits: 3

Teacher Licensure Coursework

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 473</td>
<td>Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 483</td>
<td>Advanced Methods of Teaching Science in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 490</td>
<td>Student Teaching in Education</td>
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<td>EDCI 491</td>
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<td>2</td>
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<td>EDRD 419</td>
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<tr>
<td>EDUC 372</td>
<td>Human Development, Learning, and Teaching (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 422</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 23

Curriculum and Instruction, MEd
Banner Code: E1-MED-CRIN

Academic Advising
Phone: 703-993-2080
Email: cehdsaa@gmu.edu

This master's degree is offered to students preparing for initial teacher licensure, advanced teacher education, or ancillary educational programs.

Requirements

Degree Requirements
Total credits: 30-39

Concentrations are listed within the subject areas listed below. Each concentration wholly describes the requirements for the degree and the concentration. Students should choose one concentration.

Concentration Areas

- Advanced Studies in Teaching and Learning (ASTL) (p. 171)
- Assistive Technology (p. 177)
- Culturally & Linguistically Diverse & Exceptional Learners (p. 177)
- Early Childhood and Elementary Education (p. 177)
- Learning Technologies (p. 178)
- Literacy/Reading (p. 179)
- Secondary Education (6–12) (p. 180)
- Transformative Teaching (p. 182)
Advanced Studies in Teaching and Learning (ASTL)

The ASTL Concentrations are for practicing teachers and other educators with one or more years of teaching experience who want to continue to grow professionally. The program is comprised of two components: 12 credits in Education Core focused on advanced pedagogy and professional learning, plus 18-21 credits in an area of specialization, called the Concentration. The successful completion of these two program components comprises the master’s degree. All 18 Concentrations provide advanced, graduate-level coursework taught by experienced faculty in that specialization area. The courses, aligned with the National Board for Professional Teaching Standards, help teachers think and practice as board-certified teachers. The program develops teacher-leaders who take an inquiry stance on their educational practice and lead from the classroom and beyond as they contribute to ongoing school improvement and educational change. While developing expertise in a content area and increasing their understanding of culturally and linguistically diverse students and families, teachers reflect critically on issues of equity and social justice and use systematic inquiry to inform decision-making and effect change.

Experienced teachers and other educators with or without a master’s degree may apply for the master’s degree program. The ASTL program also provides an option for teachers who hold master’s degrees to earn a Literacy/Reading Instruction Graduate Certificate with a concentration in Reading Specialist (K-12) or a Graduate Certificate in Curriculum and Instruction with a concentration in Gifted Childhood Education.

MEd Requirements Common to all ASTL Concentrations

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 606</td>
<td>Education and Culture</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 612</td>
<td>Inquiry into Practice</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 613</td>
<td>How Students Learn</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 614</td>
<td>Designing and Assessing Teaching and Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 615</td>
<td>Educational Change</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Concentration in ASTL: Advanced International Baccalaureate (AIB)

This concentration provides advanced professional development for teachers on the philosophy, elements, and assessments of the Primary Years Programme (PYP), Middle Years Programme (MYP), and Diploma Programme (DP). The coursework focuses on the theory, pedagogy, and research underlying the International Baccalaureate programs. The combination of the ASTL IB Concentration coursework and the ASTL Core coursework result in the International Baccalaureate Advanced Award in Teaching and Learning Research.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 621</td>
<td>Teaching and Learning in the International Baccalaureate Program</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 622</td>
<td>Curriculum Development across IB Programs</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 623</td>
<td>Models and Strategies for Teaching and Learning in IB Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 624</td>
<td>Assessment and Learning in IB Schools</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Concentration in ASTL: Designing Digital Learning in Schools (ADDL)

This concentration is offered to practicing teachers who wish to gain the necessary knowledge and skills for integrating digital learning and K–12 curricular knowledge outcomes. The concentration is framed by four learning outcomes: investigation of the theory and practice of digital learning, connection of digital learning and knowledge outcomes, use of design principles and processes to inform practice, knowledge of a range of technologies appropriate for PreK-12 learners.

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 780</td>
<td>Principles of School-Based Design</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 781</td>
<td>Designing for Information Using</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 782</td>
<td>Designing for Literacy</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 783</td>
<td>Designing for Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 784</td>
<td>Designing for Community Participation</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 787</td>
<td>Teacher Leadership and Advocacy for Digital Learning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Concentration in ASTL: Diversity and Exceptionality in PK-12 Schools (ADEP)

This concentration joins graduate courses in Special Education, Gifted Education, and Second Language Learning. It is designed for general education teachers who seek to enhance their professional knowledge and skills related to students with disabilities, students who demonstrate advanced capabilities in various domains, and English Learners.

In consultation with advisor, choose 6 courses (18 credits) from among the following, with the goal of selecting at least one course from each area.

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 524</td>
<td>Universal Design for Learning</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 502</td>
<td>Classroom Management and Applied Behavior Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 503</td>
<td>Language Development and Reading</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 540</td>
<td>Characteristics of Students with Disabilities who Access the General Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 628</td>
<td>Elementary Reading, Curriculum, Strategies for Students Who Access the General Education Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 629</td>
<td>Secondary Curriculum and Strategies for Students with Disabilities who Access the General Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 662</td>
<td>Consultation and Collaboration</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>
### Gifted

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 621</td>
<td>Introduction to Gifted and Talented Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 622</td>
<td>Curriculum Differentiation for Diverse Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 624</td>
<td>Assessment, Identification, and Evaluation of Gifted Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

### English for Speakers of Other Languages

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 630</td>
<td>Supporting English Learners in PK-12 Schools</td>
<td>3</td>
</tr>
</tbody>
</table>

### Concentration in ASTL: Early Childhood Education (AECE)

This concentration provides advanced professional development in preschool through third grade content and includes two required courses and four electives. The concentration focuses on advancing the professional knowledge of practicing teachers who teach and work with diverse young children and their families.

#### Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 601</td>
<td>Frameworks for Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECED 685</td>
<td>Applied and Teacher Research in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>or ECED 691</td>
<td>Policy Perspectives in Early Childhood Education</td>
<td></td>
</tr>
</tbody>
</table>

#### Electives

Select four courses from the following:

- Any graduate ECED course(s) (p. 1556)
- EDCI 630 Supporting English Learners in PK-12 Schools
- EDRD 630 Literacy Foundations and Instruction for Diverse Populations: Birth through Middle Childhood

**Total Credits** 18

### Concentration in ASTL: Elementary Mathematics (AEMA)

This concentration combines the study of mathematics content appropriate for kindergarten through eighth grade with the study of mathematics education research, curriculum, leadership, and assessment.

#### Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 610</td>
<td>Number Systems and Number Theory for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 611</td>
<td>Geometry and Measurement for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 612</td>
<td>Probability and Statistics for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 613</td>
<td>Algebra and Functions for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 614</td>
<td>Rational Numbers and Proportional Reasoning for K-8 Teachers</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Electives

Select six credits from the following:

- FREN 551 | Topics in Francophone Sub-Saharan Literature and Culture | 3       |
- FREN 553 | Topics in North African Francophone Literature and Culture | 3       |
- FREN 554 | Topics in Francophone Caribbean Literature and Culture  | 3       |
- FREN 555 | Special Topics related to Francophone Literature and Culture | 3       |
- FREN 557 | Topics in Quebec and French-Canadian Literature and Culture | 3       |
- FREN 558 | Special Topics related to French and Francophone Literature and Culture | 3       |

**Total Credits** 18

### Concentration in ASTL: Foreign Language French (AFLF)

This concentration provides advanced professional development and language study for practicing foreign/world language teachers. The 18 credits include a combination of modern language courses and targeted electives.

#### Coursework

<table>
<thead>
<tr>
<th>Literature</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select 6 credits from the following:

- FREN 515 | Topics in Medieval French Literature and Culture | 3       |
- FREN 516 | Topics in Renaissance French Literature and Culture      | 3       |
- FREN 517 | Topics in Seventeenth-Century French Literature and Culture | 3       |
- FREN 518 | Topics in Eighteenth-Century French Literature and Culture | 3       |
- FREN 519 | Topics in Nineteenth-Century French Literature and Culture | 3       |
- FREN 520 | Topics in Twentieth and Twenty-First-Century French Literature and Culture | 3       |
- FREN 550 | Special Topics                                            | 3       |
- FREN 551 | Topics in Francophone Sub-Saharan Literature and Culture  | 3       |
- FREN 553 | Topics in North African Francophone Literature and Culture | 3       |
- FREN 554 | Topics in Francophone Caribbean Literature and Culture    | 3       |
- FREN 555 | Special Topics related to Francophone Literature and Culture | 3       |
- FREN 557 | Topics in Quebec and French-Canadian Literature and Culture | 3       |
- FREN 558 | Special Topics related to French and Francophone Literature and Culture | 3       |

**Total Credits** 18
Select six credits from the courses above or below in consultation with an advisor:  

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRLN 510</td>
<td>Bibliography and Research in Foreign Languages and Literature</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 525</td>
<td>Literary Translation</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 550</td>
<td>Special Topics</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 565</td>
<td>Theory of Translation</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 572</td>
<td>Integrating Technology into Language Learning</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 573</td>
<td>Basic Issues in Language Pedagogy</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 575</td>
<td>Heritage Language Education</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 590</td>
<td>Internship and Seminar in Translation</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 620</td>
<td>Literary Theory and Criticism</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 660</td>
<td>Approaches to the Study of Language</td>
<td>2</td>
</tr>
<tr>
<td>FRLN 670</td>
<td>Topics in Language Learning and Teaching</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits: 18

1 Courses may be substituted with advisor-approved language and literature-related electives.

2 Courses may be substituted with advisor-approved language and literature-related electives.

**Concentration in ASTL: Foreign Language Spanish (AFLS)**

This concentration provides advanced professional development and language study for practicing foreign language teachers. The 18 credits include a combination of modern language courses and targeted electives.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 502</td>
<td>Hispanic Sociolinguistics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 510</td>
<td>Methods of Literary and Cultural Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Select 12 credits from the following:  

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 501</td>
<td>Applied Spanish Grammar</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 505</td>
<td>Applied Spanish Stylistics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 512</td>
<td>Mass Media and Popular Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 520</td>
<td>Studies in Medieval Spanish Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 525</td>
<td>Studies in Renaissance Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 530</td>
<td>Studies in the Literature of the Golden Age</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 540</td>
<td>Studies in 20th-Century Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 544</td>
<td>Spanish-Language Film, Television, and Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 545</td>
<td>Studies in Hispanic Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 551</td>
<td>Special Topics in Spanish</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 560</td>
<td>Studies in Spanish American Poetry</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 565</td>
<td>Studies in Spanish American Drama</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 570</td>
<td>Language Politics and Policy</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 571</td>
<td>Methods and Curriculum Design for Teaching Spanish</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 576</td>
<td>Advanced Translation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21

1 One year of successful full-time teaching in an accredited public or non-public school may be accepted in lieu of SPAN 576 Advanced Practicum in Gifted Education (VA Licensure Regulations for School Personnel, 1998). A 3-credit elective course must be chosen with advisor approval to meet the 21-credit requirement.

**Concentration in Gifted Child Education (AGCE)**

This concentration provides advanced professional development through endorsement or master’s degree for teachers of gifted students. The concentration meets NAGC/CEC graduate standards and focuses on culturally diverse, multilingual, twice exceptional, and traditionally defined gifted students and programs.

Students must earn a B- or higher in all coursework.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 621</td>
<td>Introduction to Gifted and Talented Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 622</td>
<td>Curriculum Differentiation for Diverse Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 623</td>
<td>Models and Strategies for Teaching Gifted Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 624</td>
<td>Assessment, Identification, and Evaluation of Gifted Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 625</td>
<td>Contemporary Issues and Trends in Gifted Education</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 626</td>
<td>Action Research in Gifted Education</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 627</td>
<td>Advanced Practicum in Gifted Education</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 21

1 The concentration is designed for elementary, middle, and high school teachers who seek a foundation in the history courses that are taught within Virginia public schools.

**Coursework**

Courses below may be substituted with advisor-approved history electives.
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 520</td>
<td>Geography for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>HIST 510</td>
<td>Approaches to Modern World History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 601</td>
<td>Themes in U.S. History I</td>
<td>3</td>
</tr>
<tr>
<td>HIST 602</td>
<td>Themes in U.S. History II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 605</td>
<td>Themes in European History I</td>
<td>3</td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HIST 695</td>
<td>History Symposium</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 18

**Concentration in ASTL: Individualized (AATL)**

This individualized concentration is developed in concert with a student’s advisor to provide coursework in a student’s specialized area that is not provided in other ASTL concentrations. The student works with the program director to design a program of study that provides individualized learning experiences in an area of expertise relevant to one’s professional educational setting.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 18 credits selected in consultation with advisor.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 18

**Concentration in ASTL: Literacy PK–12 Classroom Teachers (AP12)**

This concentration includes three required literacy courses and three approved electives in ESOL, special education, psychology, secondary and elementary education, early childhood, writing, and other areas. The coursework includes theory and strategies in literacy and reading for teachers in any discipline, PK–12.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDRD 630</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Birth through Middle Childhood</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 631</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Adolescence Through Adulthood</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 632</td>
<td>Literacy Assessments and Interventions for Groups</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Select 9 credits of electives from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 630</td>
<td>Supporting English Learners in PK-12 Schools</td>
<td></td>
</tr>
<tr>
<td>EDRD 633</td>
<td>Literacy Assessments and Interventions for Individuals</td>
<td></td>
</tr>
<tr>
<td>EDRD 637</td>
<td>Supervised Literacy Practicum (Must register for 3 credits)</td>
<td></td>
</tr>
<tr>
<td>EDSE 662</td>
<td>Consultation and Collaboration</td>
<td></td>
</tr>
<tr>
<td>EDSE 627</td>
<td>Assessment</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 18

1 Students may choose an alternate elective with advisor approval.

**Concentration in ASTL: Literacy: Reading Specialist (ALRS)**

This concentration is a state-approved sequence of courses leading to Virginia reading specialist licensure. Coursework includes foundational knowledge, instructional and assessment strategies for individuals and groups, and preparation as a literacy coach and staff developer. Students must earn a B- or higher in all licensure coursework. Licensure also requires a master’s degree, passing of the Virginia Reading Assessment, and three years of teaching under contract.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDRD 630</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Birth through Middle Childhood</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 631</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Adolescence Through Adulthood</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 632</td>
<td>Literacy Assessments and Interventions for Groups</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 633</td>
<td>Literacy Assessments and Interventions for Individuals</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 634</td>
<td>School-Based Leadership in Literacy</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 635</td>
<td>School-Based Inquiry in Literacy</td>
<td>3</td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EDRD 637</td>
<td>Supervised Literacy Practicum</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 21

**Concentration in ASTL: Secondary Mathematics Education, Grades 6–12 (AMT6)**

This concentration provides advanced professional development in mathematics teaching and learning for practicing middle and high school mathematics teachers. The coursework focuses on current research in mathematics education, inquiry, technology, and a community of mathematics practice.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 666</td>
<td>Research in Mathematics Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 702</td>
<td>Internship in Mathematics Education</td>
<td>3</td>
</tr>
<tr>
<td>MATH 601</td>
<td>Analysis I for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 604</td>
<td>Geometry for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 614</td>
<td>Rational Numbers and Proportional Reasoning for K-8 Teachers</td>
<td></td>
</tr>
<tr>
<td>MATH 607</td>
<td>Algebraic Structure for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 608</td>
<td>Problem Solving in Mathematics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 18

**Concentration in ASTL: Physical Education (APED)**

This concentration provides coursework in research design, curriculum development, collaborative supervision, research in pedagogy, and advanced adapted content. It is designed for practicing PE teachers seeking to improve their professional knowledge and teaching performance for improving student learning.
In consultation with advisor, choose an additional 5 courses (15 credits) from among the following, with the goal of selecting at least one course from each area:

**Designing Digital Learning in Schools**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT</td>
<td>Principles of School-Based Design</td>
<td>3</td>
</tr>
<tr>
<td>EDIT</td>
<td>Designing for Information Using</td>
<td>3</td>
</tr>
<tr>
<td>EDIT</td>
<td>Designing for Literacy</td>
<td>3</td>
</tr>
<tr>
<td>EDIT</td>
<td>Designing for Problem Solving</td>
<td>3</td>
</tr>
</tbody>
</table>

**Math Education Leadership**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI</td>
<td>Mathematics Learning and Assessment (K-8)</td>
<td>3</td>
</tr>
<tr>
<td>EDCI</td>
<td>Curriculum Development in Mathematics Education</td>
<td>3</td>
</tr>
<tr>
<td>EDCI</td>
<td>Mathematics Education Leadership for School Change</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>Number Systems and Number Theory for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>Geometry and Measurement for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>Probability and Statistics for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>Algebra and Functions for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>Rational Numbers and Proportional Reasoning for K-8 Teachers</td>
<td>3</td>
</tr>
</tbody>
</table>

**Science**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI</td>
<td>Research in Science Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDCI</td>
<td>Advanced Methods in Science Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDCI</td>
<td>Innovations in Science Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDSE</td>
<td>Scientific Inquiry and the Nature of Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Select six credits of science coursework with advisor approval.

Total Credits 18

---

**Concentration in ASTL: Science K-12 (AS12)**

This concentration provides advanced professional development in science teaching and learning for practicing elementary, middle, or high school science teachers.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI</td>
<td>Research in Science Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDCI</td>
<td>Advanced Methods in Science Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDCI</td>
<td>Innovations in Science Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDUC</td>
<td>Scientific Inquiry and the Nature of Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Select six credits of science coursework with advisor approval.

Total Credits 18

---

**Concentration in ASTL: Science, Technology, Engineering, and Mathematics (STEM) (ASTM)**

This concentration provides advanced professional development in science, technology, engineering and mathematics teaching and learning for practicing elementary, middle, or high school science teachers.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI</td>
<td>Integrated STEM Teaching</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 18 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE</td>
<td>Principles and Procedures of Behavior Analysis</td>
<td></td>
</tr>
<tr>
<td>EDSE</td>
<td>Applied Behavior Analysis: Empirical Bases</td>
<td></td>
</tr>
<tr>
<td>EDSE</td>
<td>Applied Behavior Analysis: Assessments and Interventions</td>
<td></td>
</tr>
<tr>
<td>EDSE</td>
<td>Applied Behavior Analysis: Applications</td>
<td></td>
</tr>
<tr>
<td>EDSE</td>
<td>Applied Behavior Analysis: Verbal Behavior</td>
<td></td>
</tr>
</tbody>
</table>
### Ethical and Professional Conduct for Behavior Analysis

Total Credits 18

### Assistive Technology Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 510</td>
<td>Introduction to Assistive Technology</td>
<td></td>
</tr>
<tr>
<td>EDAT 521</td>
<td>Augmentative Communication</td>
<td></td>
</tr>
<tr>
<td>EDAT 522</td>
<td>Assistive Technology for Individuals with Sensory Impairments</td>
<td></td>
</tr>
<tr>
<td>EDAT 523</td>
<td>Accessibility and Input Modifications</td>
<td></td>
</tr>
<tr>
<td>EDAT 524</td>
<td>Universal Design for Learning</td>
<td></td>
</tr>
<tr>
<td>EDAT 525</td>
<td>Software and Mobile Applications for Individuals with Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDAT 527</td>
<td>Assistive Technology for Independent Living and Employment</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

### Students with Disabilities who Access the Adapted Curriculum Emphasis

Select 18 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td></td>
</tr>
<tr>
<td>EDSE 531</td>
<td>Transition and Community-Based Instruction</td>
<td></td>
</tr>
<tr>
<td>EDSE 532</td>
<td>Positive Behavior Supports</td>
<td></td>
</tr>
<tr>
<td>EDSE 533</td>
<td>Curriculum and Assessment in Severe Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 534</td>
<td>Communication and Severe Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 547</td>
<td>Medical and Developmental Risk Factors for Children with Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 557</td>
<td>Foundations of Language and Literacy for Diverse Learners</td>
<td></td>
</tr>
<tr>
<td>EDSE 661</td>
<td>Curriculum and Methods: Severe Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 663</td>
<td>Collaborative Teamwork to Support Students with Significant Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 669</td>
<td>Interdisciplinary Approach for Children with Sensory and Motor Disabilities</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

### Students with Disabilities who Access the General Curriculum Emphasis

Select 18 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td></td>
</tr>
<tr>
<td>EDSE 502</td>
<td>Classroom Management and Applied Behavior Analysis</td>
<td></td>
</tr>
<tr>
<td>EDSE 503</td>
<td>Language Development and Reading</td>
<td></td>
</tr>
<tr>
<td>EDSE 540</td>
<td>Characteristics of Students with Disabilities who Access the General Curriculum</td>
<td></td>
</tr>
<tr>
<td>EDSE 544</td>
<td>Adapted Instructional Methods and Transition for Secondary Learners</td>
<td></td>
</tr>
<tr>
<td>EDSE 627</td>
<td>Assessment</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

### Autism Spectrum Disorders Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 520</td>
<td>Supporting the Behavior and Sensory Needs of Individuals with Autism</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 534</td>
<td>Characteristics of Individuals with Autism</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 535</td>
<td>Interventions for Individuals with Autism</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 537</td>
<td>Autism Across the Lifespan: Collaboration with Critical Partners</td>
<td>3</td>
</tr>
</tbody>
</table>

One elective course (3 credits) selected from other ASTL Special Education emphases 3

Total Credits 18

### Visual Impairments Emphasis

Select 18 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 522</td>
<td>Assistive Technology for Individuals with Sensory Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 511</td>
<td>Characteristics of Students with Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 512</td>
<td>Braille Code</td>
<td></td>
</tr>
<tr>
<td>EDSE 513</td>
<td>Medical and Educational Implications of Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 514</td>
<td>Orientation and Mobility for Students with Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 518</td>
<td>Curriculum and Assessment of Students with Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 532</td>
<td>Positive Behavior Supports</td>
<td></td>
</tr>
<tr>
<td>EDSE 613</td>
<td>Teaching Methods for Students with Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 616</td>
<td>Braille Reading and Writing</td>
<td></td>
</tr>
<tr>
<td>EDSE 663</td>
<td>Collaborative Teamwork to Support Students with Significant Disabilities</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

### Concentration in ASTL: Teacher Leadership (ATL)

This concentration provides advanced professional development in school leadership. The educational leadership coursework focuses on teachers as leaders in their classrooms, teams, departments, programs, and schools.

### Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDLE 610</td>
<td>Leading Schools and Communities</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 620</td>
<td>Organizational Theory and Leadership</td>
<td>3</td>
</tr>
</tbody>
</table>
### Assistive Technology

The Assistive Technology program prepares educators and other professionals to work with individuals with disabilities, service providers, and family members. Graduates will use technology to assist individuals to function more effectively in school, home, work, and community environments.

#### Concentration in Assistive Technology (AT)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 510</td>
<td>Introduction to Assistive Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 521</td>
<td>Augmentative Communication</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 522</td>
<td>Assistive Technology for Individuals with Sensory Impairments</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 523</td>
<td>Accessibility and Input Modifications</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 524</td>
<td>Universal Design for Learning</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 525</td>
<td>Software and Mobile Applications for Individuals with Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 527</td>
<td>Assistive Technology for Independent Living and Employment</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 510</td>
<td>Designing Adapted Environments</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 549</td>
<td>Assistive Technology Assessment</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 590</td>
<td>Special Education Research</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 590</td>
<td>Educational Research in Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 30

### Culturally & Linguistically Diverse & Exceptional Learners

#### Concentration in Teaching Culturally and Linguistically Diverse and Exceptional Learners (TCLD)

This concentration is designed to prepare teachers to work in highly diverse K-12 classrooms to support a variety of student needs with special emphasis on language learners. Students pursuing the MEd with this concentration must also complete a secondary certificate program to support completing initial licensure or advanced coursework in Elementary Education, English as a Second Language Education, Foreign Language Education, Special Education, or Advanced International Baccalaureate Studies. The master's program also prepares international teachers interested in earning initial licensure in Elementary or English as a Second Language Education (formerly FAST TRAIN).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 501</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>ECED 503</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECED 504</td>
<td>Engaging Families of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 511</td>
<td>Assessment of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Choose one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ECED 601</td>
<td>Frameworks for Early Childhood Education</td>
<td></td>
</tr>
<tr>
<td>ECED 685</td>
<td>Applied and Teacher Research in Early Childhood Education</td>
<td></td>
</tr>
<tr>
<td>ECED 691</td>
<td>Policy Perspectives in Early Childhood Education</td>
<td></td>
</tr>
</tbody>
</table>

Electives
Select 15 credits from graduate ECED courses or courses approved by an academic advisor (p. 1556)

Total Credits 30

### Concentration in Elementary Education (ELED)

The 39-credit concentration and initial licensure component provides professionals with the specialized knowledge, skills, and dispositions needed to meet the educational needs of students attending today's elementary schools. Specific content and endorsement courses are required, all courses are taught in cohorts only. Two cohort models (one- or two-semester internships) provide flexibility for all students. The two-semester internship cohort begins each spring and fall semester; the one-
semester internship cohort begins each summer semester. Contact the Elementary Program for additional information.

All students are required to submit and successfully complete a series of performance-based assessments. These assessments include content knowledge, pedagogical skills, and dispositions.

**Grading Policy**

Students enrolled in this concentration must earn a B or higher in all coursework.

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELED 544</td>
<td>Introduction to Elementary Methods and Management</td>
<td>3</td>
</tr>
<tr>
<td>ELED 545</td>
<td>Differentiating Elementary Methods and Management</td>
<td>3</td>
</tr>
<tr>
<td>ELED 552</td>
<td>Mathematics Methods for the Elementary Classroom</td>
<td>3</td>
</tr>
<tr>
<td>ELED 553</td>
<td>Science Methods for the Elementary Classroom</td>
<td>3</td>
</tr>
<tr>
<td>ELED 554</td>
<td>Methods of Teaching Social Studies and Integrating Fine Arts in the Elementary Classroom</td>
<td>3</td>
</tr>
<tr>
<td>ELED 555</td>
<td>Literacy Teaching and Learning in Diverse Elementary Classrooms I</td>
<td>3</td>
</tr>
<tr>
<td>ELED 556</td>
<td>Literacy Teaching and Learning in Diverse Elementary Classrooms II</td>
<td>3</td>
</tr>
<tr>
<td>ELED 559</td>
<td>Research and Assessment in Elementary Education</td>
<td>1-3</td>
</tr>
<tr>
<td>ELED 790</td>
<td>Internship in Elementary Education (Year-long internship: students must register for 3 credits in the fall and 6 credits in the spring. Semester-long internship and intensive cohort: students must register for 6 credits during their internship and complete 3 credits of elective coursework. See below for elective course options)</td>
<td>1-6</td>
</tr>
<tr>
<td>ELED 542</td>
<td>Foundations of Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>ELED 543</td>
<td>Children, Family, Culture, and Schools, ages 4-12 Years</td>
<td>3</td>
</tr>
</tbody>
</table>

Three credits from the following:

- EDSE 501 Introduction to Special Education 3
- EDUC 537 Introduction to Culturally Linguistically Diverse Learners 3
- ELED 790 Internship in Elementary Education (applicable for yearlong interns, 3 credits) 1-6

Learning Technologies

Three concentrations with an instructional technology focus provide professionals the specialized knowledge and skills needed to apply a wide range of learning technologies to achieve educational and instructional goals in schools and communities, and in corporate, government or public settings. The concentrations combine current theoretical models and research-based practice with practical, hands-on experiences to cultivate the design of innovative and engaging learning opportunities and instructional applications using state-of-the-art technologies. The concentrations serve the various needs and interests of learning organizations and instructional technology clients including instructional design, user experience design, online learning, workplace learning, and the integration of technology in schools.

**Concentration in Designing Digital Learning in Schools (DDLS)**

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 780</td>
<td>Principles of School-Based Design</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 781</td>
<td>Designing for Information Using</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 782</td>
<td>Designing for Literacy</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 783</td>
<td>Designing for Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 784</td>
<td>Designing for Community Participation</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 787</td>
<td>Teacher Leadership and Advocacy for Digital Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

**Emphasis**

Select one of the following areas of emphasis:

**ASTL Emphasis**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 606</td>
<td>Education and Culture</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 612</td>
<td>Inquiry into Practice</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 613</td>
<td>How Students Learn</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 614</td>
<td>Designing and Assessing Teaching and Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 615</td>
<td>Educational Change</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits 12

**Assistive Technology Emphasis**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 510</td>
<td>Introduction to Assistive Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 610</td>
<td>Designing Adapted Environments</td>
<td>3</td>
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<tr>
<td></td>
<td>Select 6 credits from the following:</td>
<td>6</td>
</tr>
<tr>
<td>EDAT 521</td>
<td>Augmentative Communication</td>
<td></td>
</tr>
<tr>
<td>EDAT 522</td>
<td>Assistive Technology for Individuals with Sensory Impairments</td>
<td></td>
</tr>
<tr>
<td>EDAT 523</td>
<td>Accessibility and Input Modifications</td>
<td></td>
</tr>
<tr>
<td>EDAT 524</td>
<td>Universal Design for Learning</td>
<td></td>
</tr>
<tr>
<td>EDAT 525</td>
<td>Software and Mobile Applications for Individuals with Disabilities</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

**Blended and Online Learning in Schools Emphasis**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 761</td>
<td>Models of Blended and Online Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 762</td>
<td>Quality K-12 Blended and Online Learning</td>
<td>1</td>
</tr>
<tr>
<td>EDIT 763</td>
<td>Tools for K-12 Blended and Online Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 764</td>
<td>Blended and Online Communication</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 765</td>
<td>Facilitating K-12 Blended and Online Learning</td>
<td>2</td>
</tr>
</tbody>
</table>


**Concentration in Instructional Design and Technology (INDT)**

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 590 or EDRS 590</td>
<td>Educational Research in Technology or Education Research</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 704</td>
<td>Instructional Technology Foundations and Theories of Learning</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 705</td>
<td>Instructional Design</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 706</td>
<td>Business of Learning Design and Technologies</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 730</td>
<td>Advanced Instructional Design</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 732</td>
<td>Analysis and Design of Technology-Based Learning Environments</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 752</td>
<td>Design and Implementation of Technology-based Learning Environments</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 601</td>
<td>Instructional Design and Technology (IDT) Portfolio</td>
<td>1</td>
</tr>
<tr>
<td>EDIT 701</td>
<td>Advanced Instructional Design and Technology (IDT) Portfolio</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>Select seven credits from any EDIT courses. (p. 1591)</td>
<td>7</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

**Concentration in Blended and Online Learning in Schools (BOLS)**

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 760</td>
<td>Blended and Online Teachers and Learners</td>
<td>1</td>
</tr>
<tr>
<td>EDIT 761</td>
<td>Models of Blended and Online Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 762</td>
<td>Quality K-12 Blended and Online Learning</td>
<td>1</td>
</tr>
<tr>
<td>EDIT 763</td>
<td>Tools for K-12 Blended and Online Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 764</td>
<td>Blended and Online Communication</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 765</td>
<td>Facilitating K-12 Blended and Online Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 766</td>
<td>Understanding Blended and Online Presence</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 767</td>
<td>Designing K-12 Blended and Online Learning</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 768</td>
<td>K-12 Online Design I</td>
<td>1</td>
</tr>
<tr>
<td>EDIT 769</td>
<td>K-12 Online Design II</td>
<td>1</td>
</tr>
<tr>
<td>Six credits of</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>EDIT 791</td>
<td>Project Development Practicum I</td>
<td></td>
</tr>
<tr>
<td>Six credits of</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>EDIT 792</td>
<td>Project Development Practicum II</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

**Literacy/Reading**

A master's degree and one graduate certificate (p. 211) are available to teachers in grades K-12 who are interested in gaining additional expertise in literacy/reading instruction and leadership. Courses combine current theory with practical, hands-on experience. A graduate certificate focusing on literacy coaching is also available for current reading specialists or literacy leaders. Literacy is also available as a primary or secondary specialization in the PhD in Education (p. 196) degree program.

**Concentration in Curriculum Leadership for Diverse Schools: K-12 Reading Specialist (LLDR)**

This concentration includes a 21-credit sequence of courses in literacy/reading instruction and leadership, 3 credits in research methodology, and 9 credits in courses related to diverse learners (English as a second language [ESL], special education, or an individualized program). Completion of all requirements earns students a master's degree in curriculum and instruction plus eligibility for K-12 Reading Specialist License. (Additional licensure requirements include 3 years of teaching under contract and a passing score on state licensure exam). Some coursework in ESL and/or special education may be applied toward additional licenses in those areas.

**Grading Policy**

Students must earn a B- or higher in all licensure coursework.

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDRD 630</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Birth through Middle Childhood</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 631</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Adolescence Through Adulthood</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 632</td>
<td>Literacy Assessments and Interventions for Groups</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 633</td>
<td>Literacy Assessments and Interventions for Individuals</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 634</td>
<td>School-Based Leadership in Literacy</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 635</td>
<td>School-Based Inquiry in Literacy</td>
<td>3</td>
</tr>
<tr>
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<tr>
<td>EDRD 637</td>
<td>Supervised Literacy Practicum</td>
<td>1</td>
</tr>
<tr>
<td>EDRS 590</td>
<td>Education Research</td>
<td>3</td>
</tr>
<tr>
<td>or EDSE 590</td>
<td>Special Education Research</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

Select three courses from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 510</td>
<td>Introduction to Assistive Technology</td>
<td></td>
</tr>
<tr>
<td>EDAT 524</td>
<td>Universal Design for Learning</td>
<td></td>
</tr>
<tr>
<td>EDCI 510</td>
<td>Linguistics for PreK-12 ESOL Teachers</td>
<td></td>
</tr>
<tr>
<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
<td></td>
</tr>
<tr>
<td>EDCI 519</td>
<td>Methods of Teaching Culturally and Linguistically Diverse Learners</td>
<td></td>
</tr>
<tr>
<td>EDCI 570</td>
<td>Teaching Young Adult Literacy in a Multicultural Setting</td>
<td></td>
</tr>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 30
EDSE 502  Classroom Management and Applied Behavior Analysis
EDSE 517  Computer Applications for Special Populations
EDSE 540  Characteristics of Students with Disabilities who Access the General Curriculum
EDSE 619  Principles and Procedures of Behavior Analysis
EDSE 628  Elementary Reading, Curriculum, Strategies for Students Who Access the General Education Curriculum
EDSE 629  Secondary Curriculum and Strategies for Students with Disabilities who Access the General Curriculum
EDUC 537  Introduction to Culturally Linguistically Diverse Learners
EDUC 595  Perspectives on Exceptional Teaching

Total Credits 33

1 Must be taken concurrently
2 Check course descriptions for prerequisites. Substitutions must be approved by your advisor.

Secondary Education (6–12)
The secondary education concentrations with a licensure component are designed to meet the needs of individuals who wish to be licensed or need to satisfy the requirements of a provisional license to teach at the secondary level. Specific endorsement areas are biology, chemistry, earth science, English, history and social science, mathematics, and physics. Note: only six credits (in total) may be taken as non-degree or transferred (with coordinator approval) from another accredited institution.

Grading Policy
Students enrolled in this degree program must earn a B or higher in all coursework.

Field Experience
Field experiences in public schools will be required throughout the program (a maximum of 15-30 clock hours per course or 45 clock hours per term). Arrangements will be made at the beginning of each term.

Internship Options
A 6-credit 16-week daytime internship (EDCI 790 Internship in Education) is required for completion of the state-approved licensure program.

Two options are available to meet the needs of most individuals:

- Student teaching internship: A one-term daytime internship in the classroom of a mentor teacher. Teacher candidate assumes co-teaching and independent teaching responsibilities.
- On-the-job internship: Available only to students who are employed as full-time provisionally licensed teachers and teaching in their endorsement area in an accredited middle or secondary school and want to complete a master’s degree. In lieu of an internship, provisionally licensed teachers may choose to use their full-time teaching to satisfy the experience requirement for a full license; however, the 35-credit master’s degree requires that 6 credits of approved coursework be substituted for the internship.

Concentration in Secondary Education Biology (SECB)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 673</td>
<td>Advanced Methods of Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>Six credits of</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>EDCI 790</td>
<td>Internship in Education</td>
<td>2</td>
</tr>
<tr>
<td>EDCI 791</td>
<td>Internship Seminar in Secondary Teaching</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 619</td>
<td>Literacy in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 522</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>Human Development and Learning: Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

MEd Requirement
EDUC 675  Research in Secondary Education 3

Electives
Select nine credits from the following: 1 9

EDCI 671  Innovations in Science Teaching
EDEP 551  Principles of Learner Motivation
EDEP 653  Culture and Intelligence
EDIT 504  Introduction to Educational Technology
EDSE 501  Introduction to Special Education
EDSE 502  Classroom Management and Applied Behavior Analysis
EDUC 547  Scientific Inquiry and the Nature of Science

Total Credits 35

1 Other courses may be considered with advisor approval.

Concentration in Secondary Education Chemistry (SECC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 673</td>
<td>Advanced Methods of Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>Six credits of</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>EDCI 790</td>
<td>Internship in Education</td>
<td>2</td>
</tr>
<tr>
<td>EDCI 791</td>
<td>Internship Seminar in Secondary Teaching</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 619</td>
<td>Literacy in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 522</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>Human Development and Learning: Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

MEd Requirement
EDUC 675  Research in Secondary Education 3

Electives
Select nine credits from the following: 1 9

EDCI 671  Innovations in Science Teaching
EDEP 551  Principles of Learner Motivation
EDEP 653  Culture and Intelligence
EDIT 504  Introduction to Educational Technology
EDSE 501  Introduction to Special Education
EDSE 502  Classroom Management and Applied Behavior Analysis
EDUC 547  Scientific Inquiry and the Nature of Science

Total Credits 35

1  Other courses may be considered with advisor approval.

Concentration in Secondary Education Earth Science (SECS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 673</td>
<td>Advanced Methods of Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
</tbody>
</table>

Six credits of

EDCI 790  Internship in Education
EDCI 791  Internship Seminar in Secondary Teaching
EDRD 619  Literacy in Content Areas
EDUC 522  Foundations of Secondary Education
EDUC 672  Human Development and Learning: Secondary Education

MEd Requirement

EDUC 675  Research in Secondary Education 3

Electives

Select nine credits from the following: 1

EDC 516  Bilingualism and Language Acquisition Research
EDEP 551  Principles of Learner Motivation
EDEP 653  Culture and Intelligence
EDIT 504  Introduction to Educational Technology
EDRD 630  Literacy Foundations and Instruction for Diverse Populations: Birth through Middle Childhood
EDRD 631  Literacy Foundations and Instruction for Diverse Populations: Adolescence Through Adulthood
EDSE 501  Introduction to Special Education
EDSE 502  Classroom Management and Applied Behavior Analysis
EDUC 537  Introduction to Culturally Linguistically Diverse Learners

Total Credits 35

1  Other courses may be considered with advisor approval.

Concentration in Secondary Education History and Social Science (SECH)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EDCI 567</td>
<td>Teaching Social Studies in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 667</td>
<td>Advanced Methods of Teaching Social Sciences in the Secondary School</td>
<td>3</td>
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</tbody>
</table>

Six credits of

EDCI 790  Internship in Education
EDCI 791  Internship Seminar in Secondary Teaching
EDRD 619  Literacy in Content Areas
EDUC 522  Foundations of Secondary Education
EDUC 672  Human Development and Learning: Secondary Education

MEd Requirement

EDUC 675  Research in Secondary Education 3

Electives

Select nine credits from the following: 1

EDC 510  Linguistics for PreK-12 ESOL Teachers
EDC 516  Bilingualism and Language Acquisition Research
EDC 519  Methods of Teaching Culturally and Linguistically Diverse Learners
EDCI 519  Methods of Teaching Culturally and Linguistically Diverse Learners
EDEP 551  Principles of Learner Motivation
EDEP 653  Culture and Intelligence

Total Credits 35

1  Other courses may be considered with advisor approval.
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 504</td>
<td>Introduction to Educational Technology</td>
<td></td>
</tr>
<tr>
<td>EDIT 572</td>
<td>Digital Audio/Video Design and Applications</td>
<td></td>
</tr>
<tr>
<td>EDIT 611</td>
<td>Innovations in e-Learning</td>
<td></td>
</tr>
<tr>
<td>EDRD 630</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Birth through Middle Childhood</td>
<td></td>
</tr>
<tr>
<td>EDRD 631</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Adolescence Through Adulthood</td>
<td></td>
</tr>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td></td>
</tr>
<tr>
<td>EDSE 502</td>
<td>Classroom Management and Applied Behavior Analysis</td>
<td></td>
</tr>
<tr>
<td>EDUC 592</td>
<td>Effective Collaboration for Teaching Diverse Learners in Secondary Social Studies</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 35

1 Other courses may be considered with advisor approval.

### Concentration in Secondary Education Mathematics (SECM)

#### Licensure Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 572</td>
<td>Teaching Mathematics in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 672</td>
<td>Advanced Methods of Teaching Mathematics in the Secondary School</td>
<td>3</td>
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</tbody>
</table>

Six credits of

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 790</td>
<td>Internship in Education</td>
<td>2</td>
</tr>
<tr>
<td>EDCI 791</td>
<td>Internship Seminar in Secondary Teaching</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 619</td>
<td>Literacy in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 522</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>Human Development and Learning: Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

#### MEd Requirement

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 675</td>
<td>Research in Secondary Education</td>
<td>3</td>
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</table>

#### Electives

Select nine credits from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEP 551</td>
<td>Principles of Learner Motivation</td>
<td></td>
</tr>
<tr>
<td>EDEP 653</td>
<td>Culture and Intelligence</td>
<td></td>
</tr>
<tr>
<td>EDIT 504</td>
<td>Introduction to Educational Technology</td>
<td></td>
</tr>
<tr>
<td>EDIT 590</td>
<td>Educational Research in Technology</td>
<td></td>
</tr>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td></td>
</tr>
<tr>
<td>EDSE 502</td>
<td>Classroom Management and Applied Behavior Analysis</td>
<td></td>
</tr>
<tr>
<td>EDUC 547</td>
<td>Scientific Inquiry and the Nature of Science</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 35

1 Other courses may be considered with advisor approval.

### Concentration in Secondary Education Physics (SECP)

#### Licensure Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 673</td>
<td>Advanced Methods of Teaching Science in the Secondary School</td>
<td>3</td>
</tr>
</tbody>
</table>

Six credits of

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 790</td>
<td>Internship in Education</td>
<td>2</td>
</tr>
<tr>
<td>EDCI 791</td>
<td>Internship Seminar in Secondary Teaching</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 619</td>
<td>Literacy in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 522</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>Human Development and Learning: Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

#### MEd Requirement

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 675</td>
<td>Research in Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Electives

Select nine credits from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 671</td>
<td>Innovations in Science Teaching</td>
<td></td>
</tr>
<tr>
<td>EDCI 673</td>
<td>Advanced Methods of Teaching Science in the Secondary School</td>
<td></td>
</tr>
<tr>
<td>EDCI 790</td>
<td>Internship in Education</td>
<td></td>
</tr>
<tr>
<td>EDCI 791</td>
<td>Internship Seminar in Secondary Teaching</td>
<td></td>
</tr>
<tr>
<td>EDRD 619</td>
<td>Literacy in Content Areas</td>
<td></td>
</tr>
<tr>
<td>EDUC 522</td>
<td>Foundations of Secondary Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 547</td>
<td>Scientific Inquiry and the Nature of Science</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 35

1 Other courses may be considered with advisor approval.

### Transformative Teaching

#### Concentration in Transformative Teaching (TTCH)

This concentration provides experienced school-based educators with valuable online and face-to-face professional development opportunities that help them to:

1. continually surface and rethink the routines and assumptions that shape their work in schools;
2. reflect upon their practice in the critical company of others;
3. design thoughtful and constructive responses to the obstacles that inhibit teaching and student learning;
4. develop the skills and dispositions to keep them in the classroom and in schools;
5. be leaders in their schools, in their professional associations, and in their communities around the world as civically engaged advocates for educators and students.

Experienced educators with or without a master’s degree may apply for the 30-credit master’s degree program.

#### Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDUC 647</td>
<td>Critical Reflective Practice</td>
<td>1.5</td>
</tr>
<tr>
<td>EDUC 649</td>
<td>Critical Dialogue in Education</td>
<td>1.5</td>
</tr>
</tbody>
</table>

1 Other courses may be considered with advisor approval.
EDUC 651 Critical Theories and Pedagogies 3
EDUC 653 Technology and Learning 3
EDUC 655 Teacher Research Methods 3
EDUC 657 Teaching for Democracy and Social Justice 3
EDUC 659 Teacher Leadership 1.5
EDUC 661 Teacher Empowerment and Policy 1.5
EDUC 663 Culturally Relevant Pedagogy 3
EDUC 665 Teacher Inquiry in Practice I 3
EDUC 667 Teacher Inquiry in Practice II 3
EDUC 669 Teaching and Learning in Practice 3
Total Credits 30

Accelerated Master's

**Biology, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Biology concentration)**

**Overview**
Highly-qualified undergraduates may be admitted to the bachelor's/accelerated master's program and obtain a BA (p. 643) or BS in Biology (p. 648) (degree without concentration) and an MEd in Curriculum and Instruction (concentration in secondary education biology) (p. 170) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor's/Accelerated Master's Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Biology Undergraduate Program (p. 641) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP6.6 Graduate Policies (p. 90).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master's program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

**Accelerated Option Requirements**
Students must complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
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<tr>
<td>Total Credits</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While undergraduate students, accelerated master's students are able to apply two of the courses listed above to both the bachelor's and master's degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor's/Accelerated Master's Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

**Chemistry, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Chemistry concentration)**

**Overview**
Highly-qualified undergraduates may be admitted to the bachelor's/accelerated master's option and obtain a BA (p. 662) or BS in Chemistry (p. 667) (degree without concentration) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education chemistry) in an accelerated time frame after completion of 149 credits. See AP.6.7 Bachelor's/Accelerated Master's Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of Chemistry and Biochemistry (p. 661) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP6.6 Graduate Policies (p. 90).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master's program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

**Accelerated Option Requirements**
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
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</tr>
<tr>
<td>Total Credits</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While undergraduate students, accelerated master's students are able to apply two of the courses listed above to both the bachelor's and master's degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor's/Accelerated Master's Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.
Earth Science, BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Earth Science concentration)

Overview
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BS in Earth Science (p. 627) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education earth science) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of Atmospheric, Oceanic and Earth Sciences (p. 620) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
<td></td>
</tr>
<tr>
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<td><strong>6</strong></td>
<td><strong>6</strong></td>
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</tbody>
</table>

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

English, BA or Creative Writing, BFA/ Curriculum and Instruction, Accelerated MEd (Secondary Education English concentration)

Overview
Highly-qualified Mason undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BA in English (p. 370) or a BFA in Creative Writing (p. 362) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education English) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of English (p. 359) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 569</td>
<td>3</td>
<td>EDCI 669</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
<td><strong>6</strong></td>
<td><strong>6</strong></td>
<td></td>
</tr>
</tbody>
</table>

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

History, BA / Curriculum and Instruction, Accelerated MEd (Secondary Education History and Social Science Concentration)

Overview
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BA in History (p. 402) and an MEd in Curriculum and Instruction
(p. 170) (concentration in secondary education history and social science) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of History and Art History (p. 392) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program) on the College of Education and Human Development web site.

Accelerated Option Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester Credits</th>
<th>Spring Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 567</td>
<td>3</td>
<td>EDCI 667</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Mathematics, BA or BS/Curriculum and Instruction, Accelerated MEd, (Secondary Education Mathematics concentration)

Overview
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s program and obtain a BA in Mathematics (p. 748) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education mathematics) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of Mathematical Sciences (p. 740) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program) on the College of Education and Human Development web site.

Accelerated Option Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester Credits</th>
<th>Spring Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 567</td>
<td>3</td>
<td>EDCI 667</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.
Alternative course options are available for students who begin their program in the spring. Students should contact the coordinator for the Bachelor’s/Accelerated Master’s Degree program in the College of Education and Human Development.

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

**Physics, BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Physics concentration)**

**Overview**
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s program and obtain both a BS in Physics (p. 764) and an MEd in Curriculum and Instruction (p. 170). Secondary Education Physics Concentration in an accelerated timeframe after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93) for policies related to this program.

This accelerated option is offered jointly by the department of Physics and Astronomy (p. 757) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

**Accelerated Option Requirements**
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior Fall Semester</th>
<th>Credits</th>
<th>Senior Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 572</td>
<td>3</td>
<td>EDCI 672</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits 12**

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

**Bachelor’s Degree (any)/Curriculum and Instruction, Accelerated MEd (Early Childhood Education for Diverse Learners Concentration)**

**Overview**
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s program and obtain either a BA or BS in any degree area and an MEd in Curriculum and Instruction, (Early Childhood Education for Diverse Learners concentration) in an accelerated timeframe after completion of 144 credits. See AP6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program) on the College of Education and Human Development web site.

**Accelerated Option Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Students complete up to 12 credits of ECED courses in their senior year (p. 1556)

While undergraduate students, accelerated master’s students are able to apply two of the courses taken above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office.
Bachelor's Degree (any)/Curriculum and Instruction, Accelerated MEd (Elementary Education Concentration)

Overview
Highly-qualified undergraduates may be admitted to the bachelor's/accelerated master's option and obtain either a BA or BS in any degree area and an MEd in Curriculum and Instruction, (Elementary Education concentration) in an accelerated time-frame after satisfactory completion of 153 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this option.

Students in an accelerated degree option must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s option, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program) on the College of Education and Human Development website.

Accelerated Option Requirements

Required Courses
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELED 542</td>
<td>Foundations of Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>ELED 543</td>
<td>Children, Family, Culture, and Schools, ages 4-12 Years</td>
<td>3</td>
</tr>
<tr>
<td>ELED 544</td>
<td>Introduction to Elementary Methods and Management</td>
<td>3</td>
</tr>
<tr>
<td>ELED 555</td>
<td>Literacy Teaching and Learning in Diverse Elementary Classrooms I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

While undergraduate students, accelerated master's students are able to apply two of the courses listed above to both the bachelor's and master's degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor's/Accelerated Master's Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Available Concentrations

Concentration in Advanced International Baccalaureate Studies
This 15-credit concentration provides advanced professional development for teachers on the philosophy, elements, and assessments of the Primary Years Programme (PYP), Middle Years Programme (MYP), and Diploma Programme (DP). The coursework focuses on the theory, pedagogy, and research under-girding the International Baccalaureate programs.

Concentration in Assistive Technology
This 15-credit concentration provides supplemental training for practitioners, families, and caregivers who use assistive technology while working with people with disabilities. The concentration is appropriate for general and special educators, related service personnel, adult service providers, and families and caregivers who need to apply assistive
Curriculum and Instruction Graduate Certificate

Concentration in Early Childhood Education PK-3
This 33-credit concentration offers required coursework for teacher licensure in Early Childhood Education PK-3. Students who have completed graduate or undergraduate coursework equivalent to certificate coursework prior to admission to this program may request that some courses in this certificate be waived. Students who are eligible to waive coursework must complete a minimum of 15 credits to graduate. A grade of B- or better must be earned in all coursework.

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Early_Childhood_Education_PK_3/Gedt.html).

Concentration in Gifted Child Education
This 21-credit concentration is designed for professionals who are interested in working with gifted children. Students completing this concentration fulfill the requirements for add-on endorsement in gifted education for currently-licensed teachers.

Concentration in International Elementary Education (PK-6) Licensure
This 27-credit concentration offers coursework leading to teacher licensure (Virginia) in Elementary Education PK-6. The concentration prepares educators for international teaching assignments. Additionally, this concentration prepares students who wish to teach in International Baccalaureate (IB) schools worldwide by integrating IB curriculum into the licensure coursework. Students completing the licensure requirements may take EDUC 621 Teaching and Learning in the International Baccalaureate Program and EDUC 622 Curriculum Development across IB Programs. Students must earn a B or higher in all coursework.

The coursework may be completed in the part-time evening program or during the summer intensive program.

Concentration in Secondary Education Licensure
This 23-credit concentration offers coursework towards teacher licensure (Virginia) to students enrolled in non-licensure graduate programs at Mason or those who already have a master’s degree.

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Secondary_Education_Licensure/Gedt.html).

Admissions & Policies

Requirements

Certificate Requirements
Total credits: 15-33
This certificate may be pursued on a full-or part-time basis.

Students pursuing this graduate certificate may choose from any of the following concentrations:

Concentration in Advanced International Baccalaureate Studies (AIBS)
Total credits: 15
This concentration may be pursued on a part-time or full-time basis.

Students must earn a B or higher in all coursework.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 621</td>
<td>Teaching and Learning in the International Baccalaureate Program</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 622</td>
<td>Curriculum Development across IB Programs</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 623</td>
<td>Models and Strategies for Teaching and Learning in IB Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 624</td>
<td>Assessment and Learning in IB Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 626</td>
<td>Inquiry into Action: IB Teachers, Learners, and Schools</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

Notes
Upon completion of this graduate certificate, teachers may apply to the International Baccalaureate (IB) organization for the IB certificate in teaching and learning. Students who also complete the M.Ed. in Curriculum and Instruction with a concentration in Teaching Culturally and Linguistically Diverse and Exception Learners or the concentration in Advanced Studies in Teaching and Learning may apply to the IB for the IB advanced certificate in teaching and learning research.

Concentration in Assistive Technology (AT)
Total credits: 15
This concentration may be pursued on a part-time or full-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 510</td>
<td>Introduction to Assistive Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDAT 610</td>
<td>Designing Adapted Environments</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
<td></td>
</tr>
</tbody>
</table>

Electives

Select nine credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDAT 521</td>
<td>Augmentative Communication</td>
<td></td>
</tr>
<tr>
<td>EDAT 522</td>
<td>Assistive Technology for Individuals with Sensory Impairments</td>
<td></td>
</tr>
<tr>
<td>EDAT 523</td>
<td>Accessibility and Input Modifications</td>
<td></td>
</tr>
<tr>
<td>EDAT 524</td>
<td>Universal Design for Learning</td>
<td></td>
</tr>
</tbody>
</table>

Policies
For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 94).
Concentration in Early Childhood Education PK-3 (EPK3)

Total credits: 33

This concentration may be pursued on a part-time or full-time basis.

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 501</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>ECED 502</td>
<td>Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 503</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECED 504</td>
<td>Engaging Families of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 511</td>
<td>Assessment of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 512</td>
<td>Language and Literacy Assessment and Instruction for Diverse Primary Grade Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 513</td>
<td>Integrating Social Studies Across the Content Areas for Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 515</td>
<td>Mathematics for Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 516</td>
<td>Science for Diverse Young Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following:

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 790</td>
<td>Internship with Diverse Preschool Children and Internship in Kindergarten - Third Grade</td>
<td>3</td>
</tr>
<tr>
<td>ECED 795</td>
<td>Internship in Early Childhood Education Prekindergarten-Third Grade</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 33

Concentration in Gifted Child Education (AGCE)

Total credits: 21

This concentration may only be pursued on a part-time basis.

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 621</td>
<td>Introduction to Gifted and Talented Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 622</td>
<td>Curriculum Differentiation for Diverse Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 623</td>
<td>Models and Strategies for Teaching Gifted Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 624</td>
<td>Assessment, Identification, and Evaluation of Gifted Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 625</td>
<td>Contemporary Issues and Trends in Gifted Education</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 626</td>
<td>Action Research in Gifted Education</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 627</td>
<td>Advanced Practicum in Gifted Education ¹</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21

¹ One year of successful full-time teaching in an accredited public or non-public school may be accepted in lieu of the EDCI 627 Advanced Practicum in Gifted Education (VA Licensure Regulations for School Personnel, 1998).

Concentration in International Elementary Education (PK-6) Licensure (IEEL)

Total credits: 27

This graduate certificate may be pursued on a full-time or part-time basis.

<table>
<thead>
<tr>
<th>Coursework Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDRD 515</td>
<td>Language and Literacy in Global Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 511</td>
<td>Child and Adolescent Development in Global Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 512</td>
<td>Teaching Elementary Social Studies in International Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 513</td>
<td>Teaching Elementary Math in International Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 514</td>
<td>Teaching Elementary Science in International Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 516</td>
<td>Language Across the Elementary International School Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 520</td>
<td>Elementary Curriculum, Instruction, and Assessment in International Schools</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21

Internship Options

<table>
<thead>
<tr>
<th>Internship Options Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 792</td>
<td>Internship in Education: PK-6 International Elementary Education ¹</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits: 6

¹ A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.

Two options are available to meet the needs of most individuals:

- Placement Internship: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- On-the-job Internship: Available only to students who are employed as full-time international elementary teachers and are teaching in an accredited international school.

Concentration in Secondary Education Licensure (SELC)

Total credits: 23

This concentration may be pursued on a part-time or full-time basis.

Students enrolled in this program must earn a B or higher in all coursework.
Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 790</td>
<td>Internship in Education</td>
<td>6</td>
</tr>
<tr>
<td>EDCI 791</td>
<td>Internship Seminar in Secondary Teaching</td>
<td>2</td>
</tr>
<tr>
<td>EDRD 619</td>
<td>Literacy in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 522</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>Human Development and Learning: Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Curriculum and Methods Courses

Select one content course specific to your program from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 567</td>
<td>Teaching Social Studies in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 569</td>
<td>Teaching English in the Secondary School</td>
<td></td>
</tr>
<tr>
<td>EDCI 572</td>
<td>Teaching Mathematics in the Secondary School</td>
<td></td>
</tr>
<tr>
<td>EDCI 573</td>
<td>Teaching Science in the Secondary School</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

Advanced Curriculum and Methods Courses

Select one content course specific to your program from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 667</td>
<td>Advanced Methods of Teaching Social Sciences in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 669</td>
<td>Advanced Methods of Teaching English in the Secondary School</td>
<td></td>
</tr>
<tr>
<td>EDCI 672</td>
<td>Advanced Methods of Teaching Mathematics in the Secondary School</td>
<td></td>
</tr>
<tr>
<td>EDCI 673</td>
<td>Advanced Methods of Teaching Science in the Secondary School</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

Early Childhood Education PK-3 Licensure Undergraduate Certificate

Banner Code: E1-CERB-EPK3

Academic Advising

Phone: 703-993-3844
Email: earlyed@gmu.edu

This 33-credit certificate offers required coursework for teacher licensure in Early Childhood Education PK-3.

Admissions & Policies

Admissions

Requirements for admission include a 3.0 grade point average, passing scores on required state assessments, and within 9 credits of completing state-required endorsement coursework.

Policies

Students must earn a B- or better in all coursework.

Certificate Requirements

Total credits: 33

This certificate may be pursued on a full-or part-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 401</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>ECED 402</td>
<td>Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 403</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECED 404</td>
<td>Engaging Families of Diverse Learners, Birth – Grade 6</td>
<td>3</td>
</tr>
<tr>
<td>ECED 411</td>
<td>Assessment of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 412</td>
<td>Language and Literacy Assessment and Instruction for Diverse Primary Grade Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 413</td>
<td>Integrating Social Studies Across the Content Areas for Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 415</td>
<td>Mathematics for Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 416</td>
<td>Science for Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 490</td>
<td>Internship in Early Childhood Education</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

Early Childhood Education for Diverse Learners, BSEd (pending SCHEV approval)

Banner Code: E1-BSED-ECDL

Phone: 703-993-3844
Email: earlyed@gmu.edu
Website: https://gse.gmu.edu/early-childhood/
Note: As of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia (SCHEV) for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

This bachelor’s degree provides students with the opportunity to develop a strong cross-disciplinary foundation as well as specialized knowledge to work with culturally, linguistically, ability, and socioeconomically diverse young children, families, and other professionals. The courses in the major ensure that students engage in a well-rounded, cohesive program of studies that prepares them to be high-quality early childhood educators. Students may select one of the optional teacher licensure concentrations (i.e., Early Childhood Special Education, Early/Primary Education PreK-3, Early Childhood Special Education and Early/Primary Education PreK-3) or a non-licensure sequence to fulfill the requirements for the BSEd in Early Childhood Education for Diverse Learners.

Admissions & Policies

Note: As of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia (SCHEV) for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

Admissions

Students entering as freshmen with an interest in majoring in Early Childhood Education for Diverse Learners will initially be accepted into the Early Childhood Education for Diverse Learners, BSEd, without concentration.

Four-Year Students

To declare a concentration in Early Childhood Special Education (Licensure), students must successfully complete a minimum of 45 credits and attain a cumulative GPA of 2.50. They must submit passing scores for Commonwealth of Virginia mandated tests for the licensure area.

To declare a concentration in Early/Primary Education PreK-3 (Licensure) or Early Childhood Special Education and Early/Primary Education PreK-3 (Dual Licensure), students must successfully complete a minimum of 45 credits and attain a cumulative GPA of 2.50. They must submit passing scores for all Commonwealth of Virginia mandated tests for the licensure area and must be within nine credits of completing content endorsement coursework. Students may complete the Reading for Virginia Educators (RVE) test after admission to the concentration and successful completion of ECED 412.

Degree Requirements

Total credits: 120

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 106 Quantitative Reasoning (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142) (recommended course)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GGS 101 Major World Regions (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142) (recommended course)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Two lab sciences in different disciplines (recommended)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Integration Requirement:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGH 302 Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing Intensive (fulfilled by major requirements)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (fulfilled by major requirements)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
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</table>

Program Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECEC 201</td>
<td>Introduction to Early Childhood Education for Diverse Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 401</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>ECED 402</td>
<td>Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 403</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECED 404</td>
<td>Engaging Families of Diverse Learners, Birth – Grade 6</td>
<td>3</td>
</tr>
<tr>
<td>ECED 411</td>
<td>Assessment of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 490</td>
<td>Internship in Early Childhood Education (12 credits are required)</td>
<td>3-6</td>
</tr>
<tr>
<td>ECED 491</td>
<td>Seminar in Early Childhood Education for Diverse Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 33

**BSEd without Concentration**

**Code** | **Title**                                                                 | **Credits** |
---|---|---|
Select 12 credits from the following: 12

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 405</td>
<td>Introduction to Early Childhood Special Education</td>
<td></td>
</tr>
<tr>
<td>ECED 406</td>
<td>Medical and Developmental Aspects of Disabilities of Diverse Young Learners</td>
<td></td>
</tr>
<tr>
<td>ECED 412</td>
<td>Language and Literacy Assessment and Instruction for Diverse Primary Grade Learners</td>
<td></td>
</tr>
<tr>
<td>ECED 413</td>
<td>Integrating Social Studies Across the Content Areas for Diverse Young Learners</td>
<td></td>
</tr>
<tr>
<td>ECED 415</td>
<td>Mathematics for Diverse Young Learners</td>
<td></td>
</tr>
<tr>
<td>MATH 110</td>
<td>Introductory Probability (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 271</td>
<td>Mathematics for the Elementary School Teachers I</td>
<td></td>
</tr>
<tr>
<td>or MATH course approved by advisor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

**Electives**

**Code** | **Title**                                                                 | **Credits** |
---|---|---|
Select an additional 37 credits from any courses. (p. 1196) 37

Students are encouraged to pursue a minor to partially fulfill elective requirements (http://catalog.gmu.edu/programs/#filter=filter_29)

Total Credits: 37

**Concentration in Early/Primary Education PreK-3 (Licensure) (EPEL)**

**Code** | **Title**                                                                 | **Credits** |
---|---|---|
ECED 412 | Language and Literacy Assessment and Instruction for Diverse Primary Grade Learners | 3       |
ECED 413 | Integrating Social Studies Across the Content Areas for Diverse Young Learners | 3       |
ECED 415 | Mathematics for Diverse Young Learners                               | 3       |
MATH 110 | Introductory Probability (Mason Core) (p. 142)                       | 3       |
or MATH 271 | Mathematics for the Elementary School Teachers I                   |         |
| or MATH course approved by advisor | | |

Total Credits: 15

**Electives**

**Code** | **Title**                                                                 | **Credits** |
---|---|---|
Select an additional 34 credits from any courses. (p. 1196) 34

Students are encouraged to pursue a minor to partially fulfill elective requirements (http://catalog.gmu.edu/programs/#filter=filter_29)

Total Credits: 34

**Concentration in Early Childhood Special Education and Early/Primary Education PreK-3 (Dual Licensure) (EEDL)**

**Code** | **Title**                                                                 | **Credits** |
---|---|---|
ECED 405 | Introduction to Early Childhood Special Education                    | 3       |
ECED 406 | Medical and Developmental Aspects of Disabilities of Diverse Young Learners | 3       |
ECED 412 | Language and Literacy Assessment and Instruction for Diverse Primary Grade Learners | 3       |
ECED 413 | Integrating Social Studies Across the Content Areas for Diverse Young Learners | 3       |
ECED 415 | Mathematics for Diverse Young Learners                               | 3       |
ECED 416 | Science for Diverse Young Learners                                   | 3       |
ECED 422 | Developing Language, Literacy, and Communication of Diverse Infants and Toddlers | 3       |

Total Credits: 37

**Concentration in Early Childhood Special Education (Licensure) (ECLC)**

**Code** | **Title**                                                                 | **Credits** |
---|---|---|
ECED 405 | Introduction to Early Childhood Special Education                    | 3       |
ECED 406 | Medical and Developmental Aspects of Disabilities of Diverse Young Learners | 3       |
ECED 422 | Developing Language, Literacy, and Communication of Diverse Infants and Toddlers | 3       |

Total Credits: 3
Early Intervention for Infants Toddlers with Disabilities: Collaborative Consultative Approaches 3

MATH 110 Introductory Probability (Mason Core) (p. 142) 3
or MATH 271 Mathematics for the Elementary School Teachers I 3
 или MATH course approved by advisor

Total Credits 27

<table>
<thead>
<tr>
<th>Electives</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select an additional 22 credits from any courses. (p. 1196) 22</td>
<td></td>
</tr>
<tr>
<td>Students are encouraged to pursue a minor to partially fulfill elective requirements (<a href="http://catalog.gmu.edu/programs/#filter=filter_29">http://catalog.gmu.edu/programs/#filter=filter_29</a>)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 22

### Early Childhood Education for Diverse Learners Minor

**Banner Code:** ECDL

**Academic Advising**

Phone: 703-993-3844
Email: earlyed@gmu.edu
Website: gse.gmu.edu/early-childhood/academics/undergraduate-minor-early-childhood-education-diverse-learners

This 15-credit minor provides undergraduate students with background knowledge in Early Childhood Education for Diverse Learners. Completing this minor partially fulfills requirements for licensure in Early Childhood Education, PK-3 and Early Childhood Special Education in Virginia.

### Admissions & Policies

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

**Minor Requirements**

Total credits: 15

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 401</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>ECED 402</td>
<td>Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 403</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECED 404</td>
<td>Engaging Families of Diverse Learners, Birth – Grade 6</td>
<td>3</td>
</tr>
<tr>
<td>ECED 405</td>
<td>Introduction to Early Childhood Special Education</td>
<td>3</td>
</tr>
<tr>
<td>ECED 406</td>
<td>Medical and Developmental Aspects of Disabilities of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 411</td>
<td>Assessment of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 422</td>
<td>Developing Language, Literacy, and Communication of Diverse Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>ECED 423</td>
<td>Early Intervention for Infants Toddlers with Disabilities: Collaborative Consultative Approaches</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 3 credits from undergraduate ECED courses (p. 1556) 3

Total Credits 15

### Early Childhood Special Education Licensure Undergraduate Certificate

**Banner Code:** E1-CERB-SPEC

**Academic Advising**

Phone: 703-993-3844
Email: earlyed@gmu.edu

This 33-credit certificate offers required coursework for teacher licensure in Early Childhood Special Education.

### Admissions

Requirements for admission include a 3.0 grade point average and passing scores on required state assessments.

### Policies

Students must earn a B- or better in all coursework.

### Requirements

**Certificate Requirements**

Total credits: 33

This certificate may be pursued on a full-or part-time basis.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 401</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>ECED 402</td>
<td>Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners</td>
<td>3</td>
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<td>ECED 403</td>
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<td>3</td>
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<td>ECED 404</td>
<td>Engaging Families of Diverse Learners, Birth – Grade 6</td>
<td>3</td>
</tr>
<tr>
<td>ECED 405</td>
<td>Introduction to Early Childhood Special Education</td>
<td>3</td>
</tr>
<tr>
<td>ECED 406</td>
<td>Medical and Developmental Aspects of Disabilities of Diverse Young Learners</td>
<td>3</td>
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<tr>
<td>ECED 411</td>
<td>Assessment of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 422</td>
<td>Developing Language, Literacy, and Communication of Diverse Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>ECED 423</td>
<td>Early Intervention for Infants Toddlers with Disabilities: Collaborative Consultative Approaches</td>
<td>3</td>
</tr>
</tbody>
</table>
Education Assessment, Evaluation, and Data Literacy Graduate Certificate

Banner Code: E1-CERG-EAED

Academic Advising
Phone: 703-993-3679
Email: edpsych@gmu.edu
Website: gse.gmu.edu/educational-psychology/academics/

Certificate with Concentration in Data Literacy

This 12-credit online concentration prepares teachers, building-level and district-level leaders to create, analyze and interpret a variety of student performance assessments in order to improve instruction and student learning. The four carefully-sequenced courses for the certificate focus on developing meaningful teacher-created and classroom-based student assessments, interpreting both informal and formal assessment data, and using those data in making curricular decisions. Practicing teachers and other school leaders have the opportunity to apply assessment and decision-making skills to their own classrooms or schools. Credits earned for the certificate may be applied toward the Educational Psychology, MS (p. 199).

Admissions & Policies

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Certificate Requirements

Total credits: 12

This certificate may be pursued on a part-time basis only.

Concentration in Data Literacy (DLIT)

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEP 591</td>
<td>Data-Driven Decision Making for Continuous Educational Improvement</td>
</tr>
<tr>
<td>EDEP 592</td>
<td>Data-Driven Decision-Making: Development of Assessments</td>
</tr>
<tr>
<td>EDEP 593</td>
<td>Data-Driven Decision Making: Analysis and Interpretation of Assessment Data</td>
</tr>
<tr>
<td>EDEP 594</td>
<td>Data-Driven Decision-Making Application in Education Contexts</td>
</tr>
</tbody>
</table>

Total Credits 12

Education Leadership, MEd

Banner Code: E1-MED-EDLE

703-993-3633
edleprog@gmu.edu
https://gse.gmu.edu/education-leadership/academics/masters-in-education-leadership

This 30-credit master’s degree prepares candidates for leadership and management positions in a variety of educational settings. The program emphasizes an understanding of the complexities of change in schools, communities, and organizations. Participants are expected to develop and demonstrate the knowledge, skills, and dispositions necessary to create and maintain learning environments that value diversity, continual knowledge acquisition, instructional leadership, innovative and ethical decision making, reflective practice, and successful achievement of all school-aged youth.

Requirements

Degree Requirements

Total credits: 30

Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDLE 610</td>
<td>Leading Schools and Communities</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 616</td>
<td>Curriculum Development and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 618</td>
<td>Supervision and Evaluation of Instruction</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 620</td>
<td>Organizational Theory and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 636</td>
<td>Adult Motivation and Conflict Management in Education Settings: A Case Study Approach</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 690</td>
<td>Using Research to Lead School Improvement</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

MEd without Concentration

Grades of B- or better are required for licensure.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDLE 612</td>
<td>Education Law</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 614</td>
<td>Managing Financial and Human Resources</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 634</td>
<td>Contemporary Issues in Education Leadership</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 791</td>
<td>Internship in Educational Leadership</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 12

The internship is integral to the MEd and provides an opportunity to synthesize and apply the knowledge and practice the skills identified in the Educational Leadership Constituency Consortium Standards through substantial, sustained work in educational settings.
MEd with Concentration in Independent School Leadership (non-licensure) (ISL)

This concentration is a non-licensure path within the Education Leadership program with a focus on the unique leadership and instructional needs of directors, heads of schools, and other professionals responsible for the growth and management of independent and private schools. Like other candidates in the Education Leadership program, students will develop and demonstrate the knowledge, skills, and dispositions necessary to create and maintain learning environments that value diversity, instructional leadership, innovative and ethical decision-making, reflective practice, and the successful achievement of all students, with an emphasis on the independent school context.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDLE 613</td>
<td>Education Law for Independent and Nonpublic Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 615</td>
<td>Managing Financial and Human Resources for Independent Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 635</td>
<td>Governance and the Independent School Boardroom</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 792</td>
<td>Internship in Independent School Leadership</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

MEd with Concentration in Mathematics Specialist Leader (K–8) (MSLR)

This concentration is designed for working professionals. Students study mathematics content and pedagogy, teaching, curriculum and professional development. They also explore school-based leadership issues in mathematics education. The internship is an individual experience designed and developed in consultation with a faculty advisor or mentor. This program includes all coursework required for Virginia state licensure as a K-8 mathematics specialist and do not complete the Core requirements for the MEd in Education Leadership. Students must earn a B- or higher in all licensure coursework. Students who apply for this licensure must have three years of successful teaching experience in addition to the MEd degree.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>EDCI 644</td>
<td>Mathematics Learning and Assessment (K-8)</td>
<td>3</td>
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<tr>
<td>EDCI 645</td>
<td>Curriculum Development in Mathematics Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Three credits of</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>EDCI 646</td>
<td>Mathematics Education Leadership for School Change</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 666</td>
<td>Research in Mathematics Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 702</td>
<td>Internship in Mathematics Education</td>
<td>3</td>
</tr>
<tr>
<td>MATH 610</td>
<td>Number Systems and Number Theory for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 611</td>
<td>Geometry and Measurement for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 612</td>
<td>Probability and Statistics for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 613</td>
<td>Algebra and Functions for K-8 Teachers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 614</td>
<td>Rational Numbers and Proportional Reasoning for K-8 Teachers</td>
<td>3</td>
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<tr>
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<td><strong>30</strong></td>
</tr>
</tbody>
</table>

Education Leadership Graduate Certificate

Banner Code: E1-CERG-EDLE

Academic Advising

Phone: 703-993-3633
Email: edleprog@gmu.edu
Website: gse.gmu.edu/education-leadership/academics/education-leadership-graduate-certificate

This certificate, a state-approved (Virginia) sequence of courses leading to the Administration and Supervision PreK-12 endorsement area, is designed for educators who already hold a valid teaching license and already have a master's degree from a regionally accredited university. The program emphasizes an understanding of the complexities of change in schools, communities, and organizations. Participants are expected to develop and demonstrate the knowledge, skills, and dispositions necessary to create and maintain learning environments that value diversity, continual knowledge acquisition, instructional leadership, innovative and ethical decision-making, reflective practice, and successful achievement of all school-aged youth.

This graduate certificate may be pursued on a part-time or full-time basis and may be added as a secondary program of study by current Mason students who meet the admission requirements and are enrolled in non-licensure graduate programs. This certificate option is available to students enrolled in the Education Leadership program and not in the Education Leadership with Special Education Concentration (SELE).

This certificate program qualifies for Title IV Federal Financial Aid. For more information about the program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure (https://irr2.gmu.edu/gedt/Education_Leadership/Gedt.html) page.

Admissions & Policies

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements

Total credits: 24

This certificate may be pursued on a full-or part-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDLE 610</td>
<td>Leading Schools and Communities</td>
<td>3</td>
</tr>
<tr>
<td>EDLE 612</td>
<td>Education Law</td>
<td>3</td>
</tr>
</tbody>
</table>
Education Policy Graduate Certificate (pending SCHEV approval)

Banner Code: E1-CERG-EPOL
Website: gse.gmu.edu

Overview

Note: as of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

The innovative Education Policy Graduate Certificate is designed to meet the needs of students with an interest in improving educational opportunities and student outcomes through federal, state, and local policy. The 15-credit program focuses on the study of education policy, including how decisions are made at various levels of government, how decision makers use educational research and evidence, and how to influence the decision-making process. Open to all students, regardless of their experience level, the program examines pressing challenges facing our education system, from preschool and K-12 through college and beyond, and prepares students to engage effectively with policymakers and stakeholders and to help shape and influence education policy.

The field of education policy needs professionals who can understand and analyze problems, think critically, and come up with creative and pragmatic solutions to address tough challenges in the world of education. Whether interested in pursuing a career in government, the education sector, think tanks, or nonprofit organizations, the Education Policy Graduate Certificate is meant to set students on the path to impacting education policy.

Admissions & Policies

Note: as of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

Policies
For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 94).

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EDPO 600</td>
<td>History of Education Reform</td>
<td>3</td>
</tr>
<tr>
<td>EDPO 601</td>
<td>P-12 Policy Challenges</td>
<td>3</td>
</tr>
<tr>
<td>EDPO 602</td>
<td>Higher Education Policy</td>
<td>3</td>
</tr>
<tr>
<td>EDPO 603</td>
<td>Conflict and Consensus: Education, Interest Groups and Advocacy</td>
<td>3</td>
</tr>
<tr>
<td>EDPO 604</td>
<td>Education Policy Implementation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Education, PhD

Banner Code: E1-PHD-EDUC

Academic Advising
Phone: 703-993-2011
Email: cehdphd@gmu.edu
Website: gse.gmu.edu/phd-in-education

This program is designed to advance professional study to develop research-informed expertise in a selected field of professional education. As a program of doctoral study, it emphasizes theory and research as much as it does practice, breadth of study as much as depth, and process as well as knowledge. It seeks to develop both knowledge and the skills useful in educational roles as well as the abilities to analyze and respond to problems in their relationships to various educational concerns.

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study. See Graduate Admissions Policies (p. 68).

Eligibility and Application Requirements
Admission is highly-selective and applicants must fulfill all admission requirements: a minimum of three years of successful experience as a practitioner in an educational setting, baccalaureate and master's (or equivalent) degrees from accredited institutions, demonstrated high intellectual capability and leadership potential, three letters of recommendation and GRE general test scores including the writing assessment.

For more information, call the PhD Office at 703-993-2011. Completed applications must be submitted by January 15 for fall admission, or
by October 1 for spring admission. To apply, see Graduate Admissions (https://www2.gmu.edu/admissions-aid/how-apply/graduate).

**Policies**

For policies governing all doctoral degrees, see AP.6.10 Requirements for Doctoral Degrees (p. 96).

**Program of Study**

A written program of study which lists all courses required to complete the program is used to verify that students have met all requirements at graduation. If changes are made in the program of study after its approval, the changes must be made in writing and submitted to the Office of the University Registrar with the Advancement to Candidacy paperwork.

**Reduction of Credit**

Students must have a master’s degree before being admitted to the PhD. As such, admitted students will receive a reduction of 9 credits.

### Requirements

#### Degree Requirements

Total credits: 75

**Core Requirements**

**General Culture**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDUC 800</td>
<td>Ways of Knowing 1</td>
<td>3</td>
</tr>
<tr>
<td>or EFHP 860</td>
<td>Critical Perspectives in Exercise, Fitness, and Health Promotion</td>
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**Research Methods**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDRS 810</td>
<td>Problems and Methods in Education Research</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 811</td>
<td>Quantitative Methods in Educational Research</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 812</td>
<td>Qualitative Methods in Educational Research</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDRS 818</td>
<td>Critical Discourse Analysis in Education Research</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 820</td>
<td>Evaluation Methods for Educational Programs and Curricula</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 821</td>
<td>Advanced Applications of Quantitative Methods 1</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 822</td>
<td>Advanced Applications of Qualitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 823</td>
<td>Advanced Research Methods in Single Subject/Case Design</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 824</td>
<td>Mixed Methods Research: Integrating Qualitative and Quantitative Approaches</td>
<td>3</td>
</tr>
</tbody>
</table>

**EDRS 825** Advanced Research Methods in Self-Study of Professional Practice
**EDRS 826** Qualitative Case Study Methods
**EDRS 827** Introduction to Measurement and Survey Development
**EDRS 828** Item Response Theory
**EDRS 830** Hierarchical Linear Modeling 1
**EDRS 831** Structural Equation Modeling
**EDRS 832** Document Analysis and Archival Research
**EDRS 833** Participatory Action Research
**EDRS 897** Special Topics in Research Methods

**Total Credits** 15

1 Students pursuing the Kinesiology Concentration must select these course options.

**Reduction of Credits**

Students receive a reduction of 9 credits based on their earned Master’s degree.

**Total Credits** 9

**Dissertation Proposal and Research**

**Advancement to Candidacy**

Upon successful completion of all coursework and the comprehensive portfolio assessment, students are advanced to candidacy and enroll in EDUC 998 Doctoral Dissertation Proposal (Students enrolled in the Kinesiology Concentration enroll in KINE 998 Doctoral Dissertation Proposal).

**Dissertation**

Once enrolled in EDUC 998 Doctoral Dissertation Proposal or KINE 998 Doctoral Dissertation Proposal, students must maintain continuous registration in at least 1 credit; once enrolled in EDUC 999 Doctoral Dissertation Research or KINE 999 Doctoral Dissertation Research, students must follow the university continuous registration policy as specified in AP.6.10.6 Dissertation Registration (p. 98).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum 12 credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDUC 998</td>
<td>Doctoral Dissertation Proposal 1</td>
<td>12</td>
</tr>
<tr>
<td>or KINE 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>EDUC 999</td>
<td>Doctoral Dissertation Research 2</td>
<td>12</td>
</tr>
<tr>
<td>or KINE 999</td>
<td>Doctoral Dissertation Research</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits** 12

1 Students must register for 3 credits the first semester enrolled in EDUC 998 Doctoral Dissertation Proposal or KINE 998 Doctoral Dissertation Proposal. Students preparing their proposal must register for 1 credit each semester thereafter until the proposal has been successfully defended.

2 Students must register for 3 or 6 credits the first semester enrolled in EDUC 999 Doctoral Dissertation Research or KINE 999 Doctoral Dissertation Research and must register for at least 1 credit thereafter until all work has been completed including the semester in which the degree is conferred.
**PhD without Concentration**

All students are required to create electronic portfolios to define academic and professional goals; formulate specific plans to achieve those goals through coursework, research experiences, and field-based activities; demonstrate growth in understanding the specializations and how knowledge in them is advanced through inquiry; synthesize and reflect upon the process and results of learning activities; modify goals and plans as needed based on academic and reflective self-evaluation as well as feedback from the student's Program Advisory Committee and demonstrate readiness to proceed to the dissertation phase of the program.

The first portfolio review must be completed when 18 credits have been completed or before the end of the third semester. The second portfolio review must be scheduled at the completion of 36 credit hours. When students complete the coursework phase of the program, a final meeting is held with the Program Advisory Committee. This meeting is the context for conducting the comprehensive portfolio assessment, a formal evaluation of a student's readiness to proceed to the dissertation phase of the program which is analogous to the traditional doctoral comprehensive exam.

**Program Advisory Committee**

Students choose a program advisory committee of three George Mason University faculty members prior to the end of their second semester. It is chaired by the student’s major advisor who represents the student’s primary specialization. One member must represent the student’s secondary emphasis. The major functions of this committee include assessing the student’s goals, interests and academic needs, approving the program of study, monitoring the student’s progress through the program and evaluating the student’s three portfolio reviews.

**Primary Specialization**

Professional specializations include: early childhood education, education leadership, education policy, educational psychology, higher education, international education, learning technologies design research, literacy and reading, mathematics or science education leadership, multilingual/multicultural education, research methodology, science education research, special education, and teaching and teacher education.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFHP 810</td>
<td>Neuromuscular Responses to Exercise</td>
<td>3</td>
<td>EFHP 811</td>
<td>Motor Learning and Control</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 813</td>
<td>Musculoskeletal Biomechanics in Human Movement</td>
<td>3</td>
<td>EFHP 815</td>
<td>Measurement Techniques and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 820</td>
<td>Careers in the Academy Seminar</td>
<td>3</td>
<td>EFHP 825</td>
<td>Data Analytics in Exercise, Fitness, and Health Promotion</td>
<td>3</td>
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<tr>
<td>EFHP 840</td>
<td>Doctoral Seminar in Exercise, Fitness, and Health Promotion</td>
<td>3</td>
<td>EFHP 880</td>
<td>Grant Writing</td>
<td>3</td>
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</tbody>
</table>

Total Credits 24

**Concentration in Kinesiology (KNES)**

**Kinesiology Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFHP 810</td>
<td>Neuromuscular Responses to Exercise</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 811</td>
<td>Motor Learning and Control</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 813</td>
<td>Musculoskeletal Biomechanics in Human Movement</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 815</td>
<td>Measurement Techniques and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 820</td>
<td>Careers in the Academy Seminar</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 825</td>
<td>Data Analytics in Exercise, Fitness, and Health Promotion</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 840</td>
<td>Doctoral Seminar in Exercise, Fitness, and Health Promotion</td>
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</tr>
<tr>
<td>EFHP 880</td>
<td>Grant Writing</td>
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Total Credits 24

**Experiential Learning**

<table>
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<tbody>
<tr>
<td>KINE 890</td>
<td>Research Experience I</td>
<td>6</td>
</tr>
<tr>
<td>KINE 891</td>
<td>Research Experience II</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 897</td>
<td>Independent Study for the Doctor of Philosophy in Education</td>
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</tr>
<tr>
<td></td>
<td>or KINE 897 Independent Study</td>
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</tr>
</tbody>
</table>

Total Credits 12

**Educational Psychology Minor**

**Banner Code: EDP**

**Academic Advising**

Phone: 703-993-3679
Email: edpsych@gmu.edu
Website: gse.gmu.edu/educational-psychology/

This 19-credit minor is available to all Mason undergraduate students and provides students with a grounding in topics related to human growth and development, cognition, learning and instruction, motivation, measurement, and research methods.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87)
Requirements

Minor Requirements
Total credits: 19

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>EDEP 350</td>
<td>Perspectives on Achievement Motivation</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 302</td>
<td>Human Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 312</td>
<td>Educational Psychology</td>
<td>3</td>
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<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
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Total Credits 13

Electives

Select two courses from the following: 6

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<tbody>
<tr>
<td>ECED 401</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td></td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
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</tr>
<tr>
<td>PSYC 322</td>
<td>Behavior Modification</td>
<td></td>
</tr>
<tr>
<td>PSYC 335</td>
<td>Psychology of Creativity and Innovation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Educational Psychology, MS

Banner Code: E1-MS-EDP

Academic Advising
Phone: 703-993-3679
Email: edpsych@gmu.edu
Website: gse.gmu.edu/educational-psychology/

This master's program is designed to offer professionals and students the opportunity to apply principles of learning, cognition, and motivation to vital problems in the area of education; develop a solid understanding of research, assessment, and evaluation methodologies; and develop an analytical and scholarly approach to critically assessing theoretical perspectives, research, and practice within and across content domains. By participating in a supportive and collegial environment with faculty from numerous educational disciplines and expertise, students are expected to develop the skills to meet the needs of diverse populations and design and implement effective educational programs appropriate for a broad range of cultural contexts.

Admissions & Policies

Policies
For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).
EDRS 531  Educational and Psychological Measurement  3

Total Credits  12

**Educational Psychology Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEP 550</td>
<td>Theories of Learning and Cognition</td>
<td>3</td>
</tr>
<tr>
<td>EDEP 551</td>
<td>Principles of Learner Motivation</td>
<td>3</td>
</tr>
<tr>
<td>EDEP 632</td>
<td>Human Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  9

**Research Methodology Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDRS 590</td>
<td>Education Research</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 620</td>
<td>Quantitative Inquiry in Education</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 621</td>
<td>Qualitative Inquiry in Education</td>
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</table>

Total Credits  9

**Concentration in Learning, Cognition, and Motivation (EDPL)**

**Coursework**

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
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Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDEP 597</td>
<td>Special Topics in Educational Psychology (must register for 3 credits)</td>
<td>1</td>
</tr>
<tr>
<td>EDEP 653</td>
<td>Culture and Intelligence</td>
<td></td>
</tr>
<tr>
<td>EDEP 654</td>
<td>Learning, Motivation, and Self-Regulation</td>
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</tr>
</tbody>
</table>

Total Credits  9

1 Topic must focus on Learning, Cognition, and Motivation.

**Educational Psychology Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEP 550</td>
<td>Theories of Learning and Cognition</td>
<td>3</td>
</tr>
<tr>
<td>EDEP 551</td>
<td>Principles of Learner Motivation</td>
<td>3</td>
</tr>
<tr>
<td>EDEP 632</td>
<td>Human Development</td>
<td>3</td>
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</table>

Total Credits  9

**Research Methodology Core**

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>EDRS 590</td>
<td>Education Research</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 620</td>
<td>Quantitative Inquiry in Education</td>
<td>3</td>
</tr>
<tr>
<td>EDRS 621</td>
<td>Qualitative Inquiry in Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  9

**Concentration in Teacher Preparation (EDPT)**

Individuals pursuing the Educational Psychology, MS Concentration in Teacher Preparation must be admitted into one of the following teacher licensure certificate programs prior to completion of MS coursework:

- Curriculum and Instruction Graduate Certificate (p. 187) (Concentration in Secondary Education Licensure)
- Special Education Graduate Certificate (p. 218) (Concentrations in General Curriculum K-12, Adapted Curriculum K-12, or Visual Impairments Licensure PK-12)
- International ESOL/ESL Teacher Education Graduate Certificate (p. 208), Concentration in ESOL/ESL Special Education

Students apply three courses (9 credits) from the certificate towards the MS degree in educational psychology with the expectation that they will complete the teacher certification program.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Select three courses (9 credits) from teacher licensure certificate program (see above)

Three credits of directed reading/project, or thesis  3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEP 798</td>
<td>Directed Inquiry in Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>or EDEP 799</td>
<td>Thesis in Educational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  12

**Accelerated Master’s**

**Bachelor’s Degree (any)/Educational Psychology, Accelerated MS**

**Overview**

Qualified Mason undergraduates may be admitted to a bachelor’s/accelerated master’s program and obtain a BA or BS in any degree area and an Educational Psychology, MS within an accelerated time frame in one of the following three concentrations:

- Assessment, Evaluation and Testing (EDPA)
- Learning and Decision-Making in Leadership (EDPD)
- Learning, Cognition and Motivation (EDPL)

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing accelerated programs, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).
Application Requirements

Applicants to all GMU graduate programs must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Additionally, applicants must have an overall GPA of at least 3.00. See the Accelerated Master's Admissions (https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters) webpage to apply.

Accelerated Option Requirements

Concentration in Assessment, Evaluation and Testing (EDPA)

Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EDEP 550</td>
<td>3</td>
<td>EDEP 551</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EDRS 590</td>
<td>3</td>
<td>EDRS 620</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Concentration in Learning and Decision-Making in Leadership (EDPD)

Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EDEP 550</td>
<td>3</td>
<td>EDEP 551</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EDRS 590</td>
<td>3</td>
<td>EDRS 620</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Concentration in Learning, Cognition, and Motivation (EDPL)

Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EDEP 550</td>
<td>3</td>
<td>EDEP 551</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EDRS 590</td>
<td>3</td>
<td>EDRS 620</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Foreign Language Licensure Graduate Certificate

Banner Code: E1-CERG-FLNC

Academic Advising

Phone: 703-993-3173
Email: TCLDEL@gmu.edu
Website: gse.gmu.edu/teaching-culturally-diverse-exceptional-learners/master-concentration/foreign-language-licensure-graduate-certificate

This certificate is designed to provide an interdisciplinary, theory-based course of study for initial licensure candidates and provisionally-licensed teachers. It is intended to assist students in developing a reflective stance toward practice and to enhance their ability to address critical issues in language and learning. It also intends to advance their fundamental understanding about language, technology, pedagogy, and culture, as well as issues related to diversity in schools and in society at large.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about the program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure (https://irr2.gmu.edu/gedt/Foreign_Language_Licensure/Gedt.html) page.

Admissions

Praxis Core or equivalent and demonstrated proficiency in the certificate language are prerequisites for admission.

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Certificate Requirements

Total credits: 27

This certificate may be pursued on a full-or part-time basis.

Students pursuing this graduate certificate may choose from any of the following concentrations:

Concentration in Arabic (ARBC)

Total credits: 27

Students must earn a B or higher in all coursework.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 520</td>
<td>Assessment of Language Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 560</td>
<td>Methods of Teaching in Foreign/World Languages</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 684</td>
<td>Advanced Methods of Teaching Foreign/Second Languages in PK-12 Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 620</td>
<td>Reading/Writing in Foreign/World Languages</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 511</td>
<td>Child and Adolescent Development in Global Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 21

Internship Options

A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.
Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- **Placement Internship**: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- **On-the-Job Internship**: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.

### Concentration in Chinese (CHIN)

Total credits: 27

Students must earn a B or higher in all coursework.

#### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 520</td>
<td>Assessment of Language Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 560</td>
<td>Methods of Teaching in Foreign/World Languages</td>
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<td>EDRD 620</td>
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<tr>
<td>EDUC 511</td>
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<td>3</td>
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<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21

#### Internship Options

A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 794</td>
<td>Internship in Education: PK-12 Foreign/World Language Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits: 6

Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- **Placement Internship**: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- **On-the-Job Internship**: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.

### Concentration in German (GRM)

Total credits: 27

Students must earn a B or higher in all coursework.

#### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 520</td>
<td>Assessment of Language Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 560</td>
<td>Methods of Teaching in Foreign/World Languages</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 684</td>
<td>Advanced Methods of Teaching Foreign/Second Languages in PK-12 Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 620</td>
<td>Reading/Writing in Foreign/World Languages</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 511</td>
<td>Child and Adolescent Development in Global Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21

Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- **Placement Internship**: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- **On-the-Job Internship**: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.
**Internship Options**
A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 794</td>
<td>Internship in Education: PK-12 Foreign/World Language Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- Placement Internship: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- On-the-Job Internship: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.

**Concentration in Japanese (JPN)**
Total credits: 27

Students must earn a B or higher in all coursework.

<table>
<thead>
<tr>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>EDCI 516</td>
</tr>
<tr>
<td>EDCI 520</td>
</tr>
<tr>
<td>EDCI 560</td>
</tr>
<tr>
<td>EDCI 684</td>
</tr>
<tr>
<td>EDRD 620</td>
</tr>
<tr>
<td>EDUC 511</td>
</tr>
<tr>
<td>EDUC 537</td>
</tr>
</tbody>
</table>

Total Credits 21

**Internship Options**
A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 794</td>
<td>Internship in Education: PK-12 Foreign/World Language Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- Placement Internship: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- On-the-Job Internship: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.

**Concentration in Korean (KORE)**
Total credits: 27

Students must earn a B or higher in all coursework.

<table>
<thead>
<tr>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>EDCI 516</td>
</tr>
<tr>
<td>EDCI 520</td>
</tr>
<tr>
<td>EDCI 560</td>
</tr>
<tr>
<td>EDCI 684</td>
</tr>
<tr>
<td>EDRD 620</td>
</tr>
<tr>
<td>EDUC 511</td>
</tr>
<tr>
<td>EDUC 537</td>
</tr>
</tbody>
</table>

Total Credits 21

**Internship Options**
A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 794</td>
<td>Internship in Education: PK-12 Foreign/World Language Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- Placement Internship: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- On-the-Job Internship: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.

**Concentration in Latin (LATN)**
Total credits: 27

Students must earn a B or higher in all coursework.

<table>
<thead>
<tr>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>EDCI 516</td>
</tr>
<tr>
<td>EDCI 520</td>
</tr>
<tr>
<td>EDCI 560</td>
</tr>
<tr>
<td>EDCI 684</td>
</tr>
<tr>
<td>EDRD 620</td>
</tr>
<tr>
<td>EDUC 511</td>
</tr>
</tbody>
</table>

Total Credits 21

**Internship Options**
A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 794</td>
<td>Internship in Education: PK-12 Foreign/World Language Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- Placement Internship: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- On-the-Job Internship: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.
EDUC 537  Introduction to Culturally Linguistically Diverse Learners  3

Total Credits  21

Internship Options
A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 794</td>
<td>Internship in Education: PK-12 Foreign/World Language Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits  6

Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- Placement Internship: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- On-the-Job Internship: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.

Concentration in Spanish (SPN)
Total credits: 27

Students must earn a B or higher in all coursework.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 520</td>
<td>Assessment of Language Learners</td>
<td>3</td>
</tr>
<tr>
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<td>Methods of Teaching in Foreign/World Languages</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 684</td>
<td>Advanced Methods of Teaching Foreign/Second Languages in PK-12 Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 620</td>
<td>Reading/Writing in Foreign/World Languages</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 511</td>
<td>Child and Adolescent Development in Global Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  21

Internship Options
A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 794</td>
<td>Internship in Education: PK-12 Foreign/World Language Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits  6

Both elementary and secondary school placements are required. Two options are available to meet the needs of most individuals:

- Placement Internship: One semester, daytime internship in the classroom of a cooperating teacher. Intern assumes co-teaching and independent teaching responsibilities.
- On-the-Job Internship: Available only to students who are employed as full-time foreign language teachers who are teaching the certificate language in an accredited school.

Human Development and Family Science, BA (CEHD)

Banner Code: E1-BA-HDFS

Academic Advising
Phone: 703-993-5856
Email: HDFS@gmu.edu
Website: hdfs.gmu.edu/human-development-family-science

This degree prepares its graduates to use family-centered and strengths-based approaches to support the health and well-being of individuals and families in diverse communities. Graduates will have a strong interdisciplinary foundation in the HDFS field and competencies in 10 areas as established by the National Council on Family Relations, including:

- internal dynamics of relationships and families
- human growth and development
- family-and community-based program planning, implementation, and evaluation
- social policies and laws affecting families
- family diversity
- research methodology
- professional ethics as related to the HDFS field

The HDFS curriculum prepares students to effectively engage with families across the lifespan and in a variety of service settings and professions, from early childhood education and care to family law and policy advocacy. We offer students 5 concentrations, including:

- child development, education, and services
- adolescent development and services
- adult development and aging
- family health and well-being
- family research, policy, and advocacy

Our program prepares students to critically analyze complex family issues, advocate for families in schools, communities, and in the policy arena, and address social-structural factors contributing to and influencing family functioning, health, and well-being (e.g., poverty and wealth inequality, immigration and illegalization, family homelessness, incarceration, family violence, and discrimination and structural violence such as racism, nationalism, or heterosexism). Students are required to complete a 6-credit internship and integrate research training with service fieldwork. Such an experience is a critical component of HDFS student development and will further prepare our students for graduate education and diverse careers in the human development and family science field.

The HDFS program is a joint academic degree program sponsored by the College of Education and Human Development (CEHD) (p. 161) and the College of Humanities and Social Sciences (CHSS) (p. 305).
## Requirements

### Degree Requirements

Total credits: minimum 120

#### Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Ethics (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Synthesis (p. 153)</td>
<td>3</td>
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<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

#### Additional Requirements for the BA

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One PHIL or one RELI course:</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy (PHIL) (p. 2044)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Religious Studies (RELI) (p. 2144)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social and behavioral sciences course (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Non-Western culture</td>
<td>3</td>
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<td></td>
<td>Proficiency in a foreign language through the intermediate level</td>
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<td>(coursework or testing to determine proficiency)</td>
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1 This requirement is additional to the Mason Core social and behavioral sciences (p. 150) requirement.

#### Major Requirements

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<tr>
<td></td>
<td>ECED 401 Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
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<td></td>
<td>or PSYC 313 Child Development</td>
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<td>ECED 404 Engaging Families of Diverse Learners, Birth – Grade 6</td>
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<td></td>
<td>or INTS 321 Parent-Child Relations (Mason Core) (p. 142)</td>
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<td></td>
<td>HDFS 200 Individual and Family Development (Mason Core) (p. 142)</td>
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<td></td>
<td>HDFS 250 Family Financial Literacy and Resource Management</td>
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<td>HDFS 300 Individual and Family Services Delivery</td>
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<td>HDFS 400 Advanced Family Processes (Mason Core) (p. 142)</td>
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<td>HDFS 401 Family Law and Public Policy 1</td>
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<td>HDFS 498 Internship and Analysis in Human Development and Family Science</td>
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<td></td>
<td>HDFS 499 Advanced Internship and Analysis in Human Development and Family Science</td>
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<td>SOCI 303 Methods and Logic of Inquiry</td>
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<td>or PSYC 301 Research Methods in Psychology</td>
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<td>Select one from the following:</td>
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<td></td>
<td>PSYC 415 Psychological Factors in Aging</td>
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<td>HHS 432 Healthy Aging</td>
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<td>SOCI 341 Sociology of Aging</td>
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1 Fulfills writing intensive requirement (p. 151).

#### Concentration in Adolescent Development and Services (ADS)

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<tr>
<td></td>
<td>COMM 334 Family and Health Communication</td>
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<td></td>
<td>CRIM 302 Delinquency</td>
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<td></td>
<td>CRIM 405 Law and Justice around the World (Mason Core) (p. 142)</td>
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<td></td>
<td>INTS 314 Conflict, Trauma and Healing (Mason Core)</td>
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<td></td>
<td>INTS 316 Introduction to Childhood Studies (Mason Core) (p. 142)</td>
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<td>INTS 317 Issues in Family Relationships (Mason Core) (p. 142)</td>
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<td>INTS 319 Contemporary Youth Studies (Mason Core) (p. 142)</td>
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<td>INTS 436 Social Justice Education (Mason Core) (p. 142)</td>
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<td>PSYC 211 Developmental Psychology (Mason Core) (p. 142)</td>
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<td>PSYC 304 Principles of Learning</td>
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<td>PSYC 314 Adolescent Development</td>
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<td></td>
<td>PSYC 379 Applied Cross-Cultural Psychology (Mason Core) (p. 142)</td>
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<td>PSYC 466 Psychology of Intimate Relationships</td>
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<td></td>
<td>SOCI 302 Sociology of Delinquency</td>
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<td></td>
<td>SOCI 308 Race and Ethnicity in a Changing World</td>
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<td>SOCI 309 Marriage, Families, and Intimate Life</td>
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<td>SOCI 310 Sociology of Deviance</td>
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<td>SOCI 360 Youth Culture and Society</td>
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<td>SOCW 415 Child and Family Welfare</td>
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1 Other courses of interest may be approved by the program coordinator.
### Concentration in Adult Development and Aging (ADA)

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<td>Select 15 credits from the following or in consultation with your advisor:</td>
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<tr>
<td>COMM 334</td>
<td>Family and Health Communication</td>
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<tr>
<td>COMM 399</td>
<td>Special Topics in Communication</td>
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<tr>
<td>EDUC 203</td>
<td>Disability in American Culture (Mason Core) (p. 142)</td>
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<tr>
<td>GCH 480</td>
<td>Health Maintenance and Health Aspects of Aging</td>
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<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
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<tr>
<td>HAP 403</td>
<td>Assisted Living/Senior Housing Management and Philosophy</td>
<td></td>
</tr>
<tr>
<td>HAP 445</td>
<td>Introduction to Health Services Research</td>
<td></td>
</tr>
<tr>
<td>HEAL 220</td>
<td>Dimensions of Mental Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 310</td>
<td>Drugs and Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 327</td>
<td>Women’s Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 331</td>
<td>Men’s Health</td>
<td></td>
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<td>HEAL 351</td>
<td>Relationship Health</td>
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<tr>
<td>HEAL 372</td>
<td>Health Communication</td>
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<td>HHS 432</td>
<td>Healthy Aging</td>
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<td>INTS 310</td>
<td>Violence and Gender</td>
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<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core) (p. 142)</td>
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<td>INTS 317</td>
<td>Issues in Family Relationships (Mason Core) (p. 142)</td>
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<td>INTS 405</td>
<td>Women and Leadership</td>
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<td>INTS 410</td>
<td>Contemporary Health Issues</td>
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<td>INTS 440</td>
<td>Death, Dying, and Decision Making</td>
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<tr>
<td>PSYC 362</td>
<td>Psychology of Gender</td>
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<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core) (p. 142)</td>
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<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
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<td>PSYC 418</td>
<td>Death, Dying, and Grieving</td>
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<td>PSYC 466</td>
<td>Psychology of Intimate Relationships</td>
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</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
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<td>SOCI 309</td>
<td>Marriage, Families, and Intimate Life</td>
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<td>SOCI 315</td>
<td>Contemporary Gender Relations</td>
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<td>SOCI 341</td>
<td>Sociology of Aging</td>
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<td>SOCI 390</td>
<td>Sociology of Health, Illness, and Disability</td>
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<tr>
<td>SOCW 435</td>
<td>Introduction to Gerontology</td>
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<td>WMST 300</td>
<td>Current Issues in Women and Gender Studies</td>
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<tr>
<td>WMST 307</td>
<td>Women and Work</td>
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**Total Credits:** 15

1 Other courses of interest may be approved by the program coordinator.

### Concentration in Child Development, Education, and Services (CDES)

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<td>COMM 334</td>
<td>Family and Health Communication</td>
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<td>EDUC 203</td>
<td>Disability in American Culture (Mason Core) (p. 142)</td>
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<tr>
<td>GCH 300</td>
<td>Introduction to Public Health</td>
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<td>GCH 310</td>
<td>Health Behavior Theories</td>
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<td>GCH 332</td>
<td>Health and Disease</td>
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<td>GCH 350</td>
<td>Health Promotion and Education</td>
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<td>GCH 445</td>
<td>Social Determinants of Health</td>
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**Total Credits:** 15

1 Other courses of interest may be approved by the program coordinator.
<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
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<td>HAP 445</td>
<td>Introduction to Health Services Research</td>
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<td>HEAL 110</td>
<td>Personal Health</td>
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<tr>
<td>HEAL 220</td>
<td>Dimensions of Mental Health</td>
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<tr>
<td>HEAL 230</td>
<td>Introduction to Health Behavior (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HEAL 310</td>
<td>Drugs and Health</td>
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<tr>
<td>HEAL 325</td>
<td>Health Aspects of Human Sexuality</td>
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<td>Health Communication</td>
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<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core) (p. 142)</td>
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<td>INTS 317</td>
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<td>NUTR 422</td>
<td>Nutrition throughout the Life Cycle</td>
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<td>Death, Dying, and Grieving</td>
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<td>PSYC 466</td>
<td>Psychology of Intimate Relationships</td>
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<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
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<td>SOCI 309</td>
<td>Marriage, Families, and Intimate Life</td>
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<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
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<td>SOCI 390</td>
<td>Sociology of Health, Illness, and Disability</td>
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<td>Current Issues in Women and Gender Studies</td>
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1 Other courses of interest may be approved by the program coordinator.

### Concentration in Family Research, Policy, and Advocacy (FRPA)

Select 15 credits from the following or in consultation with your advisor: 1

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<tr>
<td>CRIM 220</td>
<td>Introduction to Law and Society</td>
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<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
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<td>GCH 376</td>
<td>Health Ethics, Leadership, and Advocacy</td>
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<td>GOVT 301</td>
<td>Public Law and the Judicial Process</td>
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<td>GOVT 318</td>
<td>Interest Groups, Lobbying, and the Political Process</td>
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<tr>
<td>GOVT 353</td>
<td>Social Entrepreneurship</td>
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<tr>
<td>GOVT 364</td>
<td>Public Policy Making</td>
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<td>GOVT 366</td>
<td>Public Policy Analysis</td>
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<tr>
<td>GOVT 407</td>
<td>Law and Society</td>
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<td>GOVT 414</td>
<td>Politics of Race and Gender</td>
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<td>GOVT 427</td>
<td>Feminist Political Thought</td>
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<td>GOVT 445</td>
<td>Human Rights</td>
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<td>Health Care Delivery in the United States</td>
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<td>HAP 312</td>
<td>Healthcare Law</td>
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<td>HAP 442</td>
<td>Introduction to Health Care Politics and Policy</td>
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<td>Introduction to Health Services Research</td>
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<td>INTS 337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
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<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
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<td>Women and Leadership</td>
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<td>PSYC 362</td>
<td>Psychology of Gender</td>
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<td>Marriage, Families, and Intimate Life</td>
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<td>Qualitative Research Methods</td>
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<td>Contemporary Gender Relations</td>
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<td>SOCI 355</td>
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<td>Changing Social Policies and Systems</td>
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<td>Legal and Ethical Issues in Human Services</td>
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<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
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<td>STAT 350</td>
<td>Introductory Statistics II</td>
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</table>

Total Credits 15

### Electives

Select 14-23 credits of electives 14-23

Total Credits 14-23

### Human Development and Family Science Minor (CEHD)

**Banner Code:** HDFS

**Academic Advising**

Phone: 703-993-5856  
Email: HDFS@gmu.edu  
Website: hdfs.gmu.edu/human-development-family-science/minor

This 15-credit interdisciplinary minor is available to all Mason undergraduate students and provides background knowledge in human development and family science, specifically addressing how diverse children and adults develop, adapt, and function within the contexts of their families, communities, and society.

This minor is a joint program with coursework selected from both the College of Education and Human Development (CEHD) and the College of Humanities and Social Sciences (p. 305).
Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>HDFS 200</td>
<td>Individual and Family Development (Mason Core)</td>
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<tr>
<td>HDFS 400</td>
<td>Advanced Family Processes (Mason Core)</td>
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</table>

Total Credits: 6

Electives

Select at least one course from each of the two component areas (development and diversity) below

A third elective may be selected from any component or with permission of an HDFS advisor

Total Credits: 9

To reflect the interdisciplinary nature of the HDFS minor, two courses must have prefixes from disciplines outside of your major area of study (e.g., for PSYC majors, two courses must come from CEHD prefixes: ATEP (p. 1288), ECED (p. 1556), EDUC (p. 1577), HEAL (p. 1794), PHED (p. 2052); for ECED majors, two courses must come from CHSS prefixes: ANTH (p. 1212), INTS (p. 1862), PSYC (p. 2074), SOCI (p. 2167)).

International ESOL/ESL Teacher Education Graduate Certificate

Banner Code: E1-CERG-IETE

Academic Advising

Phone: 703-993-3173
Email: TCLDEL@gmu.edu

Available Concentrations

Concentration in ESOL/ESL Special Education

This concentration offers coursework for students and professionals seeking crossover training in ESL/ESOL and special education.

Concentration in International Special Education (PK-12)

This concentration is designed for pre-service and in-service international teachers and educators who desire additional training in special education. All coursework may be applied to the MEd in Special Education (p. 216) and will count towards Virginia licensure in special education K-12.

Concentration in International ESOL Licensure (PK-12)

This concentration offers coursework leading to teacher licensure (Virginia) in English as a Second Language. Candidates whose first language is not English may be required to pass an oral and written proficiency assessment in English to meet state licensure requirements and national professional standards.

Concentration in PK-12 for Practitioners

This concentration prepares educators for both domestic and international teaching assignments working with culturally and linguistically-diverse learners. It provides courses for licensed teachers to earn an add-on endorsement in English as a second language (ESL) PK-12, also known as English for speakers of other languages (ESOL).
Candidates whose first language is not English may be required to pass an oral and written proficiency assessment in English to meet state licensure requirements and national professional standards.

Admissions & Policies

Policies

For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements

Total credits: 15-30

This certificate may be pursued on a full-or part-time basis.

Students pursuing this graduate certificate may choose from any of the following concentrations:

Concentration in ESOL/ESL Special Education (EESE)

Total credits: 18

The concentration may only be pursued on part-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
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<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
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<td>EDCI 519</td>
<td>Methods of Teaching Culturally and Linguistically Diverse Learners</td>
<td>3</td>
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<tr>
<td>EDCI 520</td>
<td>Assessment of Language Learners</td>
<td>3</td>
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<tr>
<td>EDSE 501 or EDSE 540</td>
<td>Introduction to Special Education or Characteristics of Students with Disabilities who Access the General Curriculum</td>
<td>3</td>
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<tr>
<td>EDSE 503</td>
<td>Language Development and Reading</td>
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<tr>
<td>Select one from the following:</td>
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<tr>
<td>EDSE 628</td>
<td>Elementary Reading, Curriculum, Strategies for Students Who Access the General Education Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 629</td>
<td>Secondary Curriculum and Strategies for Students with Disabilities who Access the General Curriculum</td>
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</table>

Total Credits 18

Concentration in International Special Education (PK-12) (ISED)

Total credits: 15

This concentration may only be pursued on a part-time basis.

Coursework

Students must earn grades of B or higher in all coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>EDCI 510</td>
<td>Linguistics for PreK-12 ESOL Teachers</td>
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<tr>
<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
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<tr>
<td>EDCI 519</td>
<td>Methods of Teaching Culturally and Linguistically Diverse Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 520</td>
<td>Assessment of Language Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 525</td>
<td>Language and Literacy in Global Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 793</td>
<td>Internship in Education: PK-12 ESL/ESOL Education</td>
<td>6</td>
</tr>
<tr>
<td>EDRD 610</td>
<td>Content Literacy for English Language Learners, PK-12</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 511</td>
<td>Child and Adolescent Development in Global Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 30

Internship Options

A six-credit, 15-week daytime internship is required for completion of the state-approved licensure program. Both elementary and secondary school placements are required.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 793</td>
<td>Internship in Education: PK-12 ESL/ESOL Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Concentration in PK-12 for Practitioners (PK12)

Total credits: 21

The concentration may be pursued on a full-time or part-time basis.

Coursework

Students must earn a B or higher in all coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 510</td>
<td>Linguistics for PreK-12 ESOL Teachers</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 519</td>
<td>Methods of Teaching Culturally and Linguistically Diverse Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDCI 520</td>
<td>Assessment of Language Learners</td>
<td>3</td>
</tr>
</tbody>
</table>
Learning Technologies Graduate Certificate

Banner Code: E1-CERG-LTCH

Academic Advising
Phone: 703-993-3798
Email: LearnTech@gmu.edu
Website: learntech.gmu.edu

Available Concentrations

Concentration in Blended and Online Learning in Schools
This 16-credit concentration meets the needs of K-12 educators interested in teaching in blended as well as fully online learning environments. The concentration is offered fully online.

Concentration in Designing Digital Learning in Schools
This concentration is offered to practicing teachers who wish to gain the necessary knowledge and skills for integrating digital learning and K-12 curricular knowledge outcomes. The concentration is framed by four learning outcomes: investigation of the theory and practice of digital learning, connection of digital learning and knowledge outcomes, use of design principles and processes to inform practice, and knowledge of a range of technologies appropriate for PreK-12 learners.

Concentration in Digital Learning and Teacher Leadership
This concentration is offered to practicing teachers who wish to extend their knowledge and skill working with colleagues to design digital learning experiences for PreK-12 learners. Candidates will develop proficiency in adopting leadership dispositions, skills associated with coaching and advocacy, and leading design team to develop solutions to school-based instructional problems.

Concentration in E-Learning
This concentration provides professionals with specialized knowledge in instructional design and e-learning practices that utilize current and emerging technologies to meet education and training goals in schools, communities, government agencies, and corporate settings. Courses are available online to meet the needs of students who find it difficult to attend our face-to-face courses.

Admissions & Policies

Policies
For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements
Total credits: 15-18
This certificate may be pursued on a full-or part-time basis.

Students pursuing this graduate certificate may choose from any of the following concentrations:

Concentration in Blended and Online Learning in Schools (BOLS)
Total credits: 16
This concentration may be pursued on a part-time basis only.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 760</td>
<td>Blended and Online Teachers and Learners</td>
<td>1</td>
</tr>
<tr>
<td>EDIT 761</td>
<td>Models of Blended and Online Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 762</td>
<td>Quality K-12 Blended and Online Learning</td>
<td>1</td>
</tr>
<tr>
<td>EDIT 763</td>
<td>Tools for K-12 Blended and Online Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 764</td>
<td>Blended and Online Communication</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 765</td>
<td>Facilitating K-12 Blended and Online Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 766</td>
<td>Understanding Blended and Online Presence</td>
<td>2</td>
</tr>
<tr>
<td>EDIT 767</td>
<td>Designing K-12 Blended and Online Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits

Concentration in Designing Digital Learning in Schools (DDLS)
Total credits: 18
This concentration may only be pursued on a part-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 780</td>
<td>Principles of School-Based Design</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 781</td>
<td>Designing for Information Using</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 782</td>
<td>Designing for Literacy</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 783</td>
<td>Designing for Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 784</td>
<td>Designing for Community Participation</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 787</td>
<td>Teacher Leadership and Advocacy for Digital Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits

Concentration in Digital Learning and Teacher Leadership (DLTL)
Total credits: 15
This concentration may only be pursued on a part-time basis.
Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 786</td>
<td>Design and Teacher Leadership</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 787</td>
<td>Teacher Leadership and Advocacy for Digital Learning</td>
<td>3</td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EDIT 790 or EDIT 780</td>
<td>Practicum in Instructional Technology or Principles of School-Based Design</td>
<td></td>
</tr>
<tr>
<td>EDIT 791</td>
<td>Project Development Practicum I</td>
<td>1-6</td>
</tr>
<tr>
<td>EDIT 792</td>
<td>Project Development Practicum II</td>
<td>1-6</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Concentration in E-Learning (ELRN)

Total credits: 15

This concentration may only be pursued on a full-time or part-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 611</td>
<td>Innovations in e-Learning</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 705</td>
<td>Instructional Design</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 706</td>
<td>Business of Learning Design and Technologies</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Electives

E-Learning electives are offered for variable credit each semester and cover industry-standard commercial and open source software tools.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT 526</td>
<td>Web Accessibility and Design</td>
<td></td>
</tr>
<tr>
<td>EDIT 530</td>
<td>Scripting and Programming</td>
<td></td>
</tr>
<tr>
<td>EDIT 571</td>
<td>Visual Design and Applications</td>
<td></td>
</tr>
<tr>
<td>EDIT 572</td>
<td>Digital Audio/Video Design and Applications</td>
<td></td>
</tr>
<tr>
<td>EDIT 573</td>
<td>Project Management</td>
<td></td>
</tr>
<tr>
<td>EDIT 574</td>
<td>Social Media and Digital Collaboration Applications</td>
<td></td>
</tr>
<tr>
<td>EDIT 575</td>
<td>e-Learning Design Applications</td>
<td></td>
</tr>
<tr>
<td>EDIT 576</td>
<td>Mobile Learning and Applications</td>
<td></td>
</tr>
<tr>
<td>EDIT 710</td>
<td>Online Teaching Essentials</td>
<td></td>
</tr>
<tr>
<td>EDIT 771</td>
<td>Overview of Digital Media</td>
<td></td>
</tr>
<tr>
<td>EDIT 772</td>
<td>Virtual Worlds, Augmented Reality, and Gaming Applications</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Literacy/Reading Instruction Graduate Certificate

Banner Code: E1-CERG-LRIN

Admissions

Admissions & Policies

Admissions

Students enrolling in the Literacy Coaching concentration must hold either a Master's degree in Literacy (or closely-related field) or license/endorsement as a Reading Specialist.

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements

Total credits: 12-21

This certificate may be pursued on a part-time basis only.

Concentration in Reading Specialist (K-12) (RSPC)

Coursework

Students enrolled in this program must earn a B- or higher in all coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDRD 630</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Birth through Middle Childhood</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 631</td>
<td>Literacy Foundations and Instruction for Diverse Populations: Adolescence Through Adulthood</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 632</td>
<td>Literacy Assessments and Interventions for Groups</td>
<td>3</td>
</tr>
</tbody>
</table>

Website: gse.gmu.edu/literacy-and-reading/academics/literacy-reading-specialist-graduate-certificate
This minor provides undergraduate students with background knowledge in mild disabilities. Completing this minor partially fulfills requirements for licensure in Special Education in Virginia.

### Admissions & Policies

**Admissions**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Fifteen credits of undergraduate psychology courses are required (General, Statistics, Research Methods/Experimental, Abnormal, and Developmental).

**Policies**

For policies governing all graduate degrees, see Graduate Policies (p. 90).

With the approval of the academic program coordinator, division director and CEHD Office of Student and Academic Affairs, a maximum of 26 credits may be reduced based on a previously-conferred graduate degree.

### Requirements

**Minor Requirements**

Total credits: 15

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 401</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 402</td>
<td>Classroom Management and Applied Behavior Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 403</td>
<td>Language Development and Reading</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

**Concentration in School Psychology (SCH)**

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCD 525</td>
<td>Advanced Human Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>EDCD 603</td>
<td>Counseling Theories and Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one from the following:

Total Credits: 15
EDCD 606 Counseling Children and Adolescents
EDCD 608 Group Processes and Analyses
SPSY 692 Counseling in the Schools
EDRD 629 Literacy Foundations and Instruction for School Psychologists
EDRS 590 Education Research
EDRS 620 Quantitative Inquiry in Education
SPSY 617 Child Psychopathology
SPSY 619 Consultation and Applied Behavioral Analysis
SPSY 671 Role and Function of the School Psychologist
SPSY 672 Schools as Systems Practicum in School Psychology
SPSY 709 Cognitive Assessment
SPSY 710 Social, Emotional, and Behavioral Assessment
SPSY 750 Cognitive Assessment Practicum
SPSY 773 Prevention, Intervention, and Consultation in Schools

Total Credits 44

Research Methods Graduate Certificate
Banner Code: E1-CERG-RESM

Academic Advising
Phone: 703-993-2011
Email: cehdphd@gmu.edu
Website: gse.gmu.edu/research-methodology/qualitative-research

Certificate with Concentration in Qualitative Research
This concentration provides supplemental preparation for qualitative researchers in higher education and policy organizations. Coursework is interdisciplinary and will provide theoretical and applied research training across case study, ethnography, grounded theory, mixed methods, narrative inquiry, and participatory action research.

Requirements
Certificate Requirements
Total credits: 18
This certificate may be pursued on a part-time basis only.

Concentration in Qualitative Research (QR)
Coursework
Code       Title                                                Credits
----------  --------------------------------------------------------  ----
EDRS 812   Qualitative Methods in Educational Research        3
EDRS 822   Advanced Applications of Qualitative Methods       3
EDRS 895   Qualitative Methods Capstone Project               3
Total Credits 9

Electives
Code       Title                                                Credits
----------  --------------------------------------------------------  ----
Select 9 credits from the following:                            9
EDRS 818   Critical Discourse Analysis in Education Research   
EDRS 824   Mixed Methods Research: Integrating Qualitative and Quantitative Approaches 
EDRS 825   Advanced Research Methods in Self-Study of Professional Practice 
EDRS 826   Qualitative Case Study Methods                      
EDRS 832   Document Analysis and Archival Research             
EDRS 833   Participatory Action Research                       
EDRS 850   Grounded Theory                                    
EDRS 897   Special Topics in Research Methods                 

Total Credits 9

School Psychology Graduate Certificate
Banner Code: E1-CERG-SCH

Academic Advising
Phone: 703-993-5127
Email: nbeadles@gmu.edu
Website: gse.gmu.edu/school-psychology/

The School Psychology program which consists of the MA in Psychology, Concentration in School Psychology and the School Psychology Graduate Certificate, is committed to preparing graduate students to practice psychology in educational and clinical settings that serve children, adolescents, and their families. The program is approved by the School Psychology Training Programs of the National Association of School Psychologists (NASP). Students who successfully complete the concentration and the certificate will be eligible for licensure in Virginia by the state Board of Education and certification or licensure in other states as a school psychologist.

Admissions & Policies

Admissions
Applicants must have a conferred Master’s degree from a regionally-accredited institution prior to enrollment.

Policies
For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 94).
This certificate program qualifies for Title IV Federal Financial Aid. For more information about the program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure [link](https://irr2.gmu.edu/gedt/School_Psychology/Gedt.html) page.

### Admissions & Policies

#### Policies
Students who are eligible to waive coursework must complete a minimum of 15 credits in residency to graduate.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

### Certificate Requirements

Total credits: 22

This certificate may be pursued on a full-time basis only.

#### Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPSY 722</td>
<td>Advanced Child Assessment</td>
<td>4</td>
</tr>
<tr>
<td>SPSY 751</td>
<td>Advanced Assessment Practicum in School Psychology I</td>
<td>3</td>
</tr>
<tr>
<td>SPSY 752</td>
<td>Advanced Assessment Practicum in School Psychology II</td>
<td>3</td>
</tr>
<tr>
<td>SPSY 753</td>
<td>Multiculturalism in Schools</td>
<td>3</td>
</tr>
<tr>
<td>6 Internship credits of</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>SPSY 792</td>
<td>Prevention Intervention Consultation Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 22

### Severe Disabilities Minor

#### Banner Code: SPSD

**Academic Advising**

Phone: 703-993-3670
Email: speced@gmu.edu
Website: gse.gmu.edu/special-education/teacher-licensure/adapted-curriculum

This minor provides undergraduate students with background knowledge in severe disabilities. Completing this minor partially fulfills requirements for licensure in Special Education in Virginia.

#### Admissions & Policies

**Policies**

At least eight credits must be unique to this minor and may not be used to fulfill requirements of the student’s major, concentration, an undergraduate certificate, or another minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Special Education, BSEd (pending SCHEV approval)

#### Banner Code: E1-BSED-EDSE

**Phone**: 703-993-3670
**Email**: speced@gmu.edu
**Website**: gse.gmu.edu/special-education/

**Note**: As of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia (SCHEV) for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

This bachelor's degree is designed to prepare both educators for the classroom and individuals working in a special education context outside of the classroom with the specialized skills and content knowledge needed to support the needs of individuals with disabilities. Students may focus their program on a specific area in the field by completing a teacher licensure concentration (i.e., Teaching Students with Disabilities who Access the General Curriculum K-12, Teaching Students with Disabilities who Access the Adapted Curriculum K-12, Teaching Students with Blindness and Visual Impairments PK-12) or a non-licensure sequence to fulfill the requirements for the BSEd in Special Education degree program.

#### Admissions & Policies

**Note**: As of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia (SCHEV) for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

**Admissions**

Students with an interest in majoring in Special Education will initially be accepted into the Special Education, BSEd, without concentration.
Students must submit passing scores for all Commonwealth of Virginia mandated tests for the licensure area to enroll in the concentrations.

**Policies**

Students in the concentrations must maintain at least a 2.25 GPA in their major coursework and successfully complete:

- Emergency First Aid, CPR and AED certification or training.

Students enrolled in the General K-12 Licensure Concentration must also complete:

- Reading for Virginia Educators: Elementary and Special Education

Students enrolled in the Blindness and Visual Impairments PK-12 Licensure Concentration must also complete:

- Praxis II: Braille Proficiency
- Reading for Virginia Educators: Elementary and Special Education

**Requirements**

*Note: As of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia (SCHEV) for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.*

**Degree Requirements**

Total credits: 120

**Mason Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142) (recommended course)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Program Core Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 200</td>
<td>Introduction to Education: Teaching, Learning and Schools (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 302</td>
<td>Human Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 201</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 251</td>
<td>Classroom Management and Positive Behavior Supports</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 351</td>
<td>Technology Integration for Specialized Instruction</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 352</td>
<td>Assessment</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 353</td>
<td>Individualized Behavior Supports</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 354</td>
<td>Consultation and Collaboration</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 381</td>
<td>Exploratory Field Experience in Special Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 451</td>
<td>Transition and Self-Determination</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 452</td>
<td>Intersectionality and Disability</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 481</td>
<td>Internship: Professional Services ¹</td>
<td>12</td>
</tr>
<tr>
<td>or EDSE 482</td>
<td>Internship: General</td>
<td>3</td>
</tr>
<tr>
<td>or EDSE 483</td>
<td>Internship: Adapted (Severe Disabilities)</td>
<td></td>
</tr>
<tr>
<td>or EDSE 484</td>
<td>Internship: Blindness and Visual Impairments</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 45

¹ Students enrolled in the BSEd without concentration must successfully complete EDSE 481 Internship: Professional Services. EDSE 482 Internship: General is required for students in the General K12 concentration. EDSE 483 Internship: Adapted (Severe Disabilities) is required for students in the Adapted K12 concentration. EDSE 484 Internship: Blindness and Visual Impairments is required for students in the Blindness and Visual Impairments concentration.

**BSEd in Special Education without Concentration**

Students who do not select an optional concentration must complete the special education core and select at least 15 credits from the special education offerings below (NOTE: A minimum of 45 upper-level credits in the major is required):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 15 credits from the following:</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>EDSE 203</td>
<td>Disability in American Culture</td>
<td></td>
</tr>
<tr>
<td>EDSE 204</td>
<td>Disability in a Global Society</td>
<td></td>
</tr>
<tr>
<td>EDSE 241</td>
<td>Characteristics of Students with Disabilities: High-incidence</td>
<td></td>
</tr>
<tr>
<td>EDSE 311</td>
<td>Characteristics of Students with Blindness and Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 341</td>
<td>Language Acquisition and Reading Development</td>
<td></td>
</tr>
<tr>
<td>EDSE 361</td>
<td>Characteristics of Students with Severe Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 362</td>
<td>Communication with Severe Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 410</td>
<td>Deaf History</td>
<td></td>
</tr>
<tr>
<td>EDSE 412</td>
<td>Braille Code</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>EDSE 413</td>
<td>Medical and Educational Implications of Blindness and Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 414</td>
<td>Orientation and Mobility for Students with Blindness and Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 417</td>
<td>Teaching Methods for Students with Blindness and Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 418</td>
<td>Curriculum and Assessment of Students with Blindness and Visual Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 419</td>
<td>Braille Reading and Writing</td>
<td></td>
</tr>
<tr>
<td>EDSE 420</td>
<td>Deaf Culture</td>
<td></td>
</tr>
<tr>
<td>EDSE 441</td>
<td>Instructional Strategies for Reading and Writing</td>
<td></td>
</tr>
<tr>
<td>EDSE 443</td>
<td>Instructional Strategies for Math</td>
<td></td>
</tr>
<tr>
<td>EDSE 463</td>
<td>Curriculum and Methods in Severe Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 467</td>
<td>Foundations of Language and Literacy for Individuals with Severe Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 469</td>
<td>Interdisciplinary Approach for Children with Sensory and Motor Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDAT 422</td>
<td>Assistive Technology for Individuals with Sensory Impairments</td>
<td></td>
</tr>
<tr>
<td>EDSE 481</td>
<td>Internship: Professional Services (credits included in Major Requirements)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 15

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional 23 credits from any courses. (p. 1196)</td>
<td>23</td>
</tr>
</tbody>
</table>

**Total Credits:** 23

**Concentration in General K-12 Licensure (GLIC)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 241</td>
<td>Characteristics of Students with Disabilities: High-incidence</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 341</td>
<td>Language Acquisition and Reading Development</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 441</td>
<td>Instructional Strategies for Reading and Writing</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 443</td>
<td>Instructional Strategies for Math</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 445</td>
<td>Clinical Practice and Seminar 1: General</td>
<td>2</td>
</tr>
<tr>
<td>EDSE 446</td>
<td>Clinical Practice and Seminar 2: General</td>
<td>2</td>
</tr>
<tr>
<td>EDSE 482</td>
<td>Internship: General (credits included in Major Requirements)</td>
<td>12</td>
</tr>
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</table>

**Total Credits:** 28

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional 22 credits from any courses. (p. 1196)</td>
<td>22</td>
</tr>
</tbody>
</table>

**Total Credits:** 22

**Concentration in Adapted K-12 Licensure (ALIC)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 361</td>
<td>Characteristics of Students with Severe Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 362</td>
<td>Communication with Severe Disabilities</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 38

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional 12 credits from any course. (p. 1196)</td>
<td>12</td>
</tr>
</tbody>
</table>

**Total Credits:** 12

---

**Special Education, MEd**

**Banner Code:** E1-MED-EDSE

**Academic Advising**

703-993-3670
Email: speced@gmu.edu (speced@gmu.edu)
This master’s degree is designed to prepare both educators for the classroom and individuals working in a special education context outside of the classroom with the specialized skills and content knowledge needed to support the needs of individuals with disabilities. Students may focus their program on a specific area in the field by completing a licensure or non-licensure certificate program in conjunction with the MEd and using certificate coursework to fulfill the elective credits for the MEd degree program.

Requirements

**Degree Requirements**

Total credits: 30

**MEd Coursework (without concentration)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDSE 503</td>
<td>Language Development and Reading</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 557</td>
<td>Foundations of Language and Literacy for Diverse Learners</td>
<td></td>
</tr>
<tr>
<td>EDSE 625</td>
<td>Applied Behavior Analysis: Verbal Behavior</td>
<td></td>
</tr>
<tr>
<td>EDSE 636</td>
<td>Supporting Communication and Literacy for Individuals with Autism</td>
<td></td>
</tr>
<tr>
<td>EDSE 517</td>
<td>Computer Applications for Special Populations</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 590</td>
<td>Special Education Research</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDSE 637</td>
<td>Autism Across the Lifespan: Collaboration with Critical Partners</td>
<td></td>
</tr>
<tr>
<td>EDSE 662</td>
<td>Consultation and Collaboration</td>
<td></td>
</tr>
<tr>
<td>EDSE 663</td>
<td>Collaborative Teamwork to Support Students with Significant Disabilities</td>
<td></td>
</tr>
<tr>
<td>EDSE 664</td>
<td>Ethical and Professional Conduct for Behavior Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Electives 15

Select 15 credits from graduate ECED courses or courses approved by an academic advisor (p. 1556)

Total Credits 30

**MEd with concentration in Early Childhood Special Education (Non-licensure) (SPEC)**

This concentration is for professionals who already hold an early childhood special education teacher license or are interested in working in an early childhood special education context outside the classroom.

Students who wish to seek early childhood education licensure are advised to consider completing the Early Childhood Special Education Licensure graduate certificate program in conjunction with the MEd. Students may use their certificate coursework to fulfill the elective credits for the MEd degree program.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 503</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECED 505</td>
<td>Introduction to Early Childhood Special Education</td>
<td>3</td>
</tr>
<tr>
<td>ECED 506</td>
<td>Medical and Developmental Aspects of Disabilities of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 522</td>
<td>Developing Language, Literacy, and Communication of Diverse Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>Choose one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ECED 601</td>
<td>Frameworks for Early Childhood Education</td>
<td></td>
</tr>
<tr>
<td>ECED 685</td>
<td>Applied and Teacher Research in Early Childhood Education</td>
<td></td>
</tr>
<tr>
<td>ECED 691</td>
<td>Policy Perspectives in Early Childhood Education</td>
<td></td>
</tr>
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</table>

**Accelerated Master’s**

**Bachelor’s Degree (any)/Special Education, Accelerated MEd**

**Overview**

Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain a BA or BS in any degree area and an MEd in Special Education (with or without the concentration in early childhood special education [non-licensure]) in an accelerated time-frame after completion of 144 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program) on the College of Education and Human Development web site.

**Accelerated Option Requirements: No Concentration Requirements**

Students complete the following courses in their senior year:
Special Education Graduate Certificate

Senior

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 501</td>
<td>3</td>
<td>EDSE 503 or 557</td>
<td>3</td>
</tr>
<tr>
<td>EDSE approved elective</td>
<td>3</td>
<td>EDSE approved elective</td>
<td>3</td>
</tr>
<tr>
<td>(p. 2196)</td>
<td></td>
<td>(p. 2196)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Accelerated Option Requirements: Early Childhood Special Education [Non-Licensure] Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complete up to 12 credits of ECED courses during senior year (p. 1556)</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

Process

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the Bachelor’s and Master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Special Education Graduate Certificate

Banner Code: E1-CERG-EDSE

Adapted Curriculum K-12

703-993-3670
Email: speced@gmu.edu (speced@gmu.edu)
https://gse.gmu.edu/special-education/professional-studies/specialized-reading-instruction

Visual Impairments Licensure (PK-12)

703-993-3670
Email: speced@gmu.edu
https://gse.gmu.edu/special-education/teacher-licensure/visual-impairments

Available Concentrations

Concentration in Adapted Curriculum (K-12)

This concentration offers required coursework for Virginia teacher licensure in Special Education: Adapted Curriculum.

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Students_With_Disabilities_Who_Access_Adapted_Curriculum/Gedt.html).

Concentration in Early Childhood Special Education

This concentration offers required coursework for teacher licensure in Early Childhood Special Education.

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Early_Childhood_Special_Education/Gedt.html).

Concentration in General Curriculum (K-12)

This 33-credit concentration offers required coursework for Virginia teacher licensure to individuals who will be working with students with disabilities who access the general curriculum. The concentration prepares individuals to work with students with disabilities who take Standards of Learning tests (SOLs) or Virginia Grade Level Assessments (VGLA).

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Students_With_Disabilities_Who_Access_General_Curriculum/Gedt.html).

Concentration in Specialized Reading Instruction for Students with Specific Learning Disabilities

This 15-credit concentration prepares educators to meet the unique needs of K-12 students with specific learning disabilities who experience severe deficits in reading and written language. Candidates develop a deep level of knowledge in literacy development, reading, difficulties, assessment, instruction and progress monitoring for these students. This certificate does not apply toward teacher licensure.

The certificate with this concentration is a cohort-only program in which students begin and end the program together as a group.

General Curriculum (K-12)

703-993-3670
Email: speced@gmu.edu
https://gse.gmu.edu/special-education/teacher-licensure/general-curriculum

Specialized Reading Instruction for Students with Specific Learning Disabilities

703-993-3670
Email: speced@gmu.edu
https://gse.gmu.edu/special-education/professional-studies/specialized-reading-instruction

Concentration in Adapted Curriculum (K-12)

This concentration offers required coursework for Virginia teacher licensure in Special Education: Adapted Curriculum.

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Students_With_Disabilities_Who_Access_Adapted_Curriculum/Gedt.html).

Concentration in Early Childhood Special Education

This concentration offers required coursework for teacher licensure in Early Childhood Special Education.

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Early_Childhood_Special_Education/Gedt.html).

Concentration in General Curriculum (K-12)

This 33-credit concentration offers required coursework for Virginia teacher licensure to individuals who will be working with students with disabilities who access the general curriculum. The concentration prepares individuals to work with students with disabilities who take Standards of Learning tests (SOLs) or Virginia Grade Level Assessments (VGLA).

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Students_With_Disabilities_Who_Access_General_Curriculum/Gedt.html).

Concentration in Specialized Reading Instruction for Students with Specific Learning Disabilities

This 15-credit concentration prepares educators to meet the unique needs of K-12 students with specific learning disabilities who experience severe deficits in reading and written language. Candidates develop a deep level of knowledge in literacy development, reading, difficulties, assessment, instruction and progress monitoring for these students. This certificate does not apply toward teacher licensure.

The certificate with this concentration is a cohort-only program in which students begin and end the program together as a group.

Available Concentrations

Concentration in Adapted Curriculum (K-12)

This concentration offers required coursework for Virginia teacher licensure in Special Education: Adapted Curriculum.

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Students_With_Disabilities_Who_Access_Adapted_Curriculum/Gedt.html).

Concentration in Early Childhood Special Education

This concentration offers required coursework for teacher licensure in Early Childhood Special Education.

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Early_Childhood_Special_Education/Gedt.html).

Concentration in General Curriculum (K-12)

This 33-credit concentration offers required coursework for Virginia teacher licensure to individuals who will be working with students with disabilities who access the general curriculum. The concentration prepares individuals to work with students with disabilities who take Standards of Learning tests (SOLs) or Virginia Grade Level Assessments (VGLA).

The certificate with this concentration qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Students_With_Disabilities_Who_Access_General_Curriculum/Gedt.html).

Concentration in Specialized Reading Instruction for Students with Specific Learning Disabilities

This 15-credit concentration prepares educators to meet the unique needs of K-12 students with specific learning disabilities who experience severe deficits in reading and written language. Candidates develop a deep level of knowledge in literacy development, reading, difficulties, assessment, instruction and progress monitoring for these students. This certificate does not apply toward teacher licensure.

The certificate with this concentration is a cohort-only program in which students begin and end the program together as a group.
Concentration in Visual Impairments Licensure (PK-12)
This concentration is designed for students seeking Virginia initial teacher licensure in visual impairments (PK–12).

Admissions & Policies

Policies
Students who have completed graduate or undergraduate coursework equivalent to certificate coursework prior to admission to this program may request that some courses in this certificate be waived. Students who are eligible to waive coursework must complete a minimum of 15 credits to graduate. Students must earn a B- or better in all coursework.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements
Total credits: 15-36
This certificate may be pursued on a full-or part-time basis.

Students pursuing this graduate certificate may choose from any of the following concentrations:

Concentration in Adapted Curriculum (K-12) (ADCU)
Total credits: 36
The certificate with this concentration may be pursued on a full-or part-time basis.

Coursework
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 531</td>
<td>Transition and Community-Based Instruction</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 532</td>
<td>Positive Behavior Supports</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 533</td>
<td>Curriculum and Assessment in Severe Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 534</td>
<td>Communication and Severe Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 547</td>
<td>Medical and Developmental Risk Factors for Children with Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 557</td>
<td>Foundations of Language and Literacy for Diverse Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 661</td>
<td>Curriculum and Methods: Severe Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 663</td>
<td>Collaborative Teamwork to Support Students with Significant Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 669</td>
<td>Interdisciplinary Approach for Children with Sensory and Motor Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>6 credits of Internship</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>EDSE 784</td>
<td>Internship: Adapted Curriculum</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 36

Concentration in Early Childhood Special Education (ECSE)
Total credits: 33
The certificate with this concentration may be pursued on a full-or part-time basis.

Students enrolled in this concentration must earn a B- or higher in all coursework.

Coursework
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED 501</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>ECED 502</td>
<td>Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 503</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECED 504</td>
<td>Engaging Families of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 505</td>
<td>Introduction to Early Childhood Special Education</td>
<td>3</td>
</tr>
<tr>
<td>ECED 506</td>
<td>Medical and Developmental Aspects of Disabilties of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 511</td>
<td>Assessment of Diverse Young Learners</td>
<td>3</td>
</tr>
<tr>
<td>ECED 522</td>
<td>Developing Language, Literacy, and Communication of Diverse Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>ECED 523</td>
<td>Early Intervention for Infants Toddlers with Disabilities: Collaborative Consultative Approaches</td>
<td>3</td>
</tr>
<tr>
<td>ECED 791 &amp; ECED 793</td>
<td>Internship with Diverse Infants and Toddlers and Internship in Preschool Early Childhood Special Education</td>
<td>6</td>
</tr>
<tr>
<td>ECED 789</td>
<td>Internship in Early Childhood Special Education Birth - Five</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 33

Concentration in General Curriculum (K-12) (GECU)
Total credits: 33
The certificate with this concentration may be pursued on a full-or part-time basis.

Coursework
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 501</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 502</td>
<td>Classroom Management and Applied Behavior Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 503</td>
<td>Language Development and Reading</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 540</td>
<td>Characteristics of Students with Disabilities who Access the General Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 544</td>
<td>Adapted Instructional Methods and Transition for Secondary Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 33
EDSE 627 Assessment 3
EDSE 628 Elementary Reading, Curriculum, Strategies for Students Who Access the General Education Curriculum 3
EDSE 629 Secondary Curriculum and Strategies for Students with Disabilities who Access the General Curriculum 3
EDSE 662 Consultation and Collaboration 3
Six credits of 6
EDSE 783 Internship: Special Education in General Curriculum 1

Total Credits 33

1 Must complete two 3-credit internships: one elementary placement and one secondary placement.

Concentration in Specialized Reading Instruction for Students with Specific Learning Disabilities (SRLD)
Total credits: 15

The certificate with this concentration may only be pursued on a part-time basis.

Coursework
Code Title Credits
EDSE 562 Foundations of Reading Instruction for Students with Specific Learning Disabilities 3
EDSE 563 Language Structure and Literacy Development for Students with Specific Learning Disabilities 3
EDSE 564 Phonology, Phonics, and Fluency for Students with Specific Learning Disabilities 3
EDSE 565 Vocabulary, Comprehension, and Written Expression for Students with Specific Learning Disabilities 3
EDSE 567 Practicum for Specialized Reading Instruction for Students with Specific Learning Disabilities 3

Total Credits 15

Concentration in Visual Impairments Licensure (PK-12) (VILI)
Total credits: 34

The certificate with this concentration may be pursued on a part-time or full-time basis.

Students enrolled in this concentration must earn a B- or higher in all coursework.

Coursework
Code Title Credits
EDAT 522 Assistive Technology for Individuals with Sensory Impairments 3
EDSE 511 Characteristics of Students with Visual Impairments 2
EDSE 512 Braille Code 3
EDSE 513 Medical and Educational Implications of Visual Impairments 3
EDSE 514 Orientation and Mobility for Students with Visual Impairments 2
EDSE 518 Curriculum and Assessment of Students with Visual Impairments 3
EDSE 532 Positive Behavior Supports 3
EDSE 613 Teaching Methods for Students with Visual Impairments 3
EDSE 616 Braille Reading and Writing 3
EDSE 663 Collaborative Teamwork to Support Students with Significant Disabilities 3
EDSE 785 Internship: Visual Impairment (must complete six credits) 2-6

Total Credits 34

Special Education Leadership Graduate Certificate

Banner Code: E1-CERG-SELE

Academic Advising
Phone: 703-993-3670
Email: speced@gmu.edu
Website: gse.gmu.edu/special-education/professional-studies/special-education-leadership

This certificate provides training for educators who administer program implementation efforts for learners with exceptional needs. It is designed for those who have an interest in becoming special education directors, program coordinators, school building administrators, department chairs, or lead teachers; however, opportunities beyond special education also exist.

This graduate certificate is a cohort-only program in which students begin and end the program together as a group. It may only be pursued on a part-time basis.

Admissions & Policies

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements
Total credits: 15

This certificate may be pursued on a part-time basis only.
### Visual Impairment and Blindness Minor

**Banner Code:** VISB

**Academic Advising**

Phone: 703-993-3670  
Email: speced@gmu.edu  
Website: gse.gmu.edu/special-education/teacher-licensure/visual-impairments

This minor provides undergraduate students with background knowledge in teaching students with visual impairments. Completing this minor partially fulfills requirements for licensure in Special Education in Virginia.

### Admissions & Policies

**Policies**

At least eight credits must be unique to this minor and may not be used to fulfill requirements of the student’s major, concentration, an undergraduate certificate, or another minor. For policies governing all minors, see the Undergraduate Policies (p. 87) section of this catalog.

### Requirements

**Minor Requirements**

Total credits: 17

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDAT 422</td>
<td>Assistive Technology for Individuals with Sensory Impairments</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 401</td>
<td>Introduction to Special Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 411</td>
<td>Characteristics of Students with Visual Impairments</td>
<td>2</td>
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<tr>
<td>EDSE 412</td>
<td>Braille Code</td>
<td>3</td>
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<tr>
<td>EDSE 418</td>
<td>Curriculum and Assessment of Students with Blindness and Visual Impairments</td>
<td>3</td>
</tr>
<tr>
<td>EDSE 432</td>
<td>Positive Behavior Supports</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 17

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### School of Recreation, Health, and Tourism

220 Bull Run Hall  
Science and Technology Campus (PW)  
Phone: 703-993-2060  
Email: srht@gmu.edu  
Website: rht.gmu.edu

The School of Recreation, Health, and Tourism (RHT) offers one doctoral specialization, three master’s degrees, two graduate certificates, two bachelor’s/accelerated master’s programs, four undergraduate degrees, two undergraduate certificates, seven minors, and seven interdisciplinary minors with other units.

### Graduate Programs

The PhD in Education with an Exercise, Fitness, and Health Promotion specialization cultivates research-based educators and practitioners to be critical thinkers and apply evidence-based (research-based) practice principles to preserve and enhance human movement in all settings and populations, promote optimal health and enhanced quality of life through physical activity, and provide rewarding learning experiences, through the conduct and dissemination of exemplary scholarship and preparation of professionals committed to service.

The MS in Athletic Training (MSAT) is a professional, entry-level program that prepares students to practice as athletic training healthcare providers.

The MS in Exercise, Fitness, and Health Promotion (EFHP) takes a science-based approach toward the fields of health and human performance. The program focuses on the role of physical activity in the promotion of health, fitness and quality of life.

The MS in Sport and Recreation Studies meets the growing need for professionals and academics in the areas of recreation administration, sport and leisure studies, sport management and individualized study in sport, recreation and tourism.

**Bachelor’s Degrees**

The BS in Health, Fitness, and Recreation Resources, with concentrations in Sport Management, Parks and Outdoor Recreation and Therapeutic Recreation prepare students for supervisory and management careers in private and public parks and recreation systems (clinical and community), non-profit and for-profit sport organizations. The Parks and Outdoor Recreation and Therapeutic Recreation concentrations are accredited by the Council on Accreditation for Parks, Recreation, Tourism, and Related Professions (COAPRT).

The BS in Kinesiology, which is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP American College of Sports Medicine sponsored), holds national program recognition status from the National Strength and Conditioning Association (NSCA-ERP) and prepares students to develop and utilize science-based approaches to healthful and proactive living strategies. Emphasis is placed upon the development of future professionals with the knowledge, skills, and abilities to enhance physical performance, fitness, and general well-being across the age spectrum.
The BSEd in Physical Education, accredited by the National Council for the Accreditation of Teacher Education (NCATE), prepares students for a teaching career (K–12) in public and private schools.

The BS in Tourism and Events Management degree is one of the fastest growing majors at the university with concentrations in Events Management, Hospitality Management and Tourism Management.

**Interdisciplinary Minors**

In addition to school-based minors, RHT offers seven minors in interdisciplinary areas of study. These minors require coursework from two or more disciplines and are administered by interunit faculty groups.

**Minor in Event Technical Production**

The Event Technical Production Minor (CEHD) (p. 225) is offered jointly by the School of Recreation, Health and Tourism (p. 221) and the School of Theater (p. 878) in the College of Visual and Performing Arts (p. 803). Students will learn how to plan, manage and execute live events and presentations. For details, see the School of Recreation, Health and Tourism website. (https://rht.gmu.edu/tourism-and-events-management/degree-options/event-technical-production-minor)

**Minor in Sport Analytics**

The Sport Analytics Minor (p. 241) is offered jointly by the School of Recreation, Health and Tourism (p. 221), School of Business (p. 888), College of Science (p. 613), and Volgenau School of Engineering (p. 1011).

**Minor in Sport and American Culture**

The Sport and American Culture Minor (p. 238) is offered jointly by the School of Recreation, Health and Tourism (p. 221) and Department of History and Art History (p. 392). Students will learn about sport and its interconnection with other societal institutions. For details, see the School of Recreation, Health, and Tourism website. (http://rht.gmu.edu/programs/minor7)

**Minor in Sport and Computer Game Design**

The Sport and Computer Game Design Minor (p. 239) is offered jointly by the School of Recreation, Health and Tourism (p. 221) and the Computer Game Design Program (p. 817) in the College of Visual and Performing Arts (p. 803). This minor provides a combined introductory look at both the sports and computer game industries.

**Minor in Sport and Conflict Resolution**

The Sport and Conflict Resolution Minor (p. 239) offered by the School of Recreation, Health, and Tourism (p. 221) and School for Conflict Analysis and Resolution (p. 936).

**Minor in Sport Communication**

The Sport Communication Minor (p. 331) is offered jointly by the School of Recreation, Health and Tourism (p. 221) and the Department of Communication (p. 313).

**Minor in Sustainability**

The Sustainability Studies Minor (p. 713) is offered jointly by the Department of Environmental Science and Policy (p. 687) and School of Integrative Studies (p. 574). Students may take select Recreation Management (PRLS courses) and Tourism and Events Management (p. 242) courses to meet elective requirements.

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**Faculty**

**School Faculty**

**Professors**

R. Baker, Brayley, S. Caswell, Chalip, Daniels, M. Jones

**Associate Professors**


**Assistant Professors**

Andre, Aylsworth, Fyock, Jin, Martin, Parham, Robison, Stroiney

**Instructors**

Casserly, DeGregorio, P. Gilbert, Jacobson, T. Jones, Krout, Magnant, Norden

---

**Requirements & Policies**

**Requirements**

**Writing-Intensive Requirement**

The university requires all undergraduate students to successfully complete at least one 300-level or above course designated ‘writing-intensive’(WI) in their major(s). For RHT students, the WI requirement is satisfied by the successful completion of KINE 450 Research Methods, PHED 340 Social and Cultural Issues in Physical Education, or SRST 450 Research Methods dependent on program requirements.

**Policies**

**Minors**

In accordance with university policy, at least eight credits must be unique to the minor and may not fulfill requirements of the student’s major, concentration, or another minor. For policies governing all minors, see AP.S.3.4 Minors (p. 90).

---

**Programs**

- Athletic Training, MS
- Coaching Minor
- Event Technical Production Minor (CEHD)
- Exercise, Fitness, and Health Promotion, MS
- Food and Beverage Management Undergraduate Certificate
- Health Promotion Minor
- Health, Fitness, and Recreation Resources, BS
- Hospitality Management Minor
- Kinesiology Graduate Certificate (pending SCHEV approval)
- Kinesiology Minor
- Kinesiology, BS
- Physical Education, BSEd
- Recreation Management Minor
- Sport Communication Minor (CEHD)
- Sport Management Graduate Certificate
- Sport Management Minor
• Sport and American Culture Minor (CEHD)
• Sport and Computer Game Design Minor (CEHD)
• Sport and Conflict Resolution Minor (CEHD)
• Sport and Recreation Studies, MS
• Sports Analytics Minor (CEHD)
• Tourism and Events Management Minor
• Tourism and Events Management, BS

Athletic Training, MS
Banner Code: E1-MS-ATT

Academic Advising
Phone: 703-993-9914
Email: msat@gmu.edu
Website: rht.gmu.edu/athletic-training/msat

This is a professional preparation program for aspiring athletic training healthcare professionals.

The program provides students with a strong foundation of the competencies and proficiencies (knowledge, skills and attitudes) established by the National Athletic Trainers’ Association (NATA) and an educational experience that complies with the Commission on Accreditation of Athletic Training Education (CAATE) standards for professional athletic trainer preparation. Because of increasing employment opportunities in youth athletic leagues and school settings, students also engage in pediatric sports medicine coursework to address the special needs of this patient population. Students will deliver care to diverse patient populations at a variety of clinical practicum education sites.

Successfully completing the program will prepare a student to become a nationally certified, athletic training Board of Certification (BOC®), Virginia Board of Medicine licensed athletic trainer.

Admissions & Policies

Admissions

Application Requirements
• Completed Application for Graduate Study
• Completion of bachelor’s degree by program start
• GRE with scores of 145 on each section is preferred (must be within 5 years)
• Personal goals statement (up to 500 words), covering the following items: academic and occupational background, the development of your interest in athletic training, reasons for wanting to enter this program, qualities you possess which will enhance functioning as an athletic training, career objective(s)
• Two recommendations from professional references
• Proof of current Emergency Cardiac Care (CPR/AED) Certification at the level of Healthcare Professional
• Grade of "C" or better in the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ATEP 510</td>
<td>Advanced Functional Anatomy</td>
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</tr>
<tr>
<td>ATEP 520</td>
<td>Therapeutic Interventions Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ATEP 525</td>
<td>Athletic Training Foundations</td>
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Total Credits 9

Professional Phase

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<td>ATEP 540</td>
<td>Lower Body Physical Assessment</td>
<td>3</td>
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<tr>
<td>ATEP 545</td>
<td>Athletic Training Clinical Techniques 1</td>
<td>3</td>
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<tr>
<td>ATEP 550</td>
<td>Lower Body Therapeutic Interventions</td>
<td>3</td>
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<td>ATEP 555</td>
<td>Athletic Training Clinical Techniques 2</td>
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<td>ATEP 560</td>
<td>Upper Body Therapeutic Interventions</td>
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<td>ATEP 565</td>
<td>Athletic Training Clinical Techniques 4</td>
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<td>ATEP 570</td>
<td>Upper Body Physical Assessment</td>
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<td>ATEP 575</td>
<td>Athletic Training Clinical Techniques 3</td>
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<td>ATEP 600</td>
<td>Pathopharmacology</td>
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<tr>
<td>ATEP 650</td>
<td>Administration and Management in Athletic Training</td>
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<tr>
<td>ATEP 660</td>
<td>Pediatric Sports Medicine</td>
<td>3</td>
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<tr>
<td>ATEP 670</td>
<td>Post Rehabilitative Therapeutic Interventions</td>
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<tr>
<td>ATEP 680</td>
<td>Athletic Training Research</td>
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Total Credits 41

Practicum

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<tr>
<th>Code</th>
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<tr>
<td>ATEP 566</td>
<td>Athletic Training Practicum 1 (high school/university; 150 hours)</td>
<td>2</td>
</tr>
<tr>
<td>ATEP 656</td>
<td>Athletic Training Practicum 2 (rehabilitation clinic; 75 hours)</td>
<td>1</td>
</tr>
<tr>
<td>ATEP 667</td>
<td>Athletic Training Practicum 3 (pre-season; 150 hours)</td>
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Research Methods 3
Basic Nutrition 3
Medical Terminology 3

Policies

For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Requirements

Degree Requirements
Total credits: 65

All courses must be taken at Mason.

The MSAT requires a grade of B- or higher in all ATEP required coursework, and maintenance of current Health Care Provider Emergency Cardiac Care (ECC) and First Aid certifications.

MS Core Coursework

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<td>Athletic Training Clinical Techniques 3</td>
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<td>Pathopharmacology</td>
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<td>Pediatric Sports Medicine</td>
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Total Credits 41

Practicum

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</tr>
<tr>
<td>ATEP 667</td>
<td>Athletic Training Practicum 3 (pre-season; 150 hours)</td>
<td>2</td>
</tr>
</tbody>
</table>
George Mason University is currently seeking accreditation for their new Athletic Training program and is not accredited by the Commission on Accreditation of Athletic Training Education (CAATE). The institution completed the accreditation site visit in February 2018 and should have the accreditation status by May 2018. Completion of a site visit does not guarantee that the program will become accredited. Students who graduate from the program prior to accreditation WILL NOT be eligible to sit for the credentialing examination for athletic trainers and will not be eligible for licensure in most states.

Special Requirements

Fees and Expenses

All ATEP (p. 1288) courses will assess a $17 accreditation fee per credit, a $25 program fee per credit, a $200 practicum clinical supervision fee for ATEP 686, through student accounts when paying tuition. For more information on the need for these fees please see the Student Accounts website (http://studentaccounts.gmu.edu/tuition-fees) under College of Education and Human Development. For additional information on housing, transportation, and other costs please see the Admissions Paying for College website. (https://www2.gmu.edu/admissions-aid/ paying-for-college)

Technical Standards

After admission to the MSAT, students must submit a technical standards certification statement, located on the MSAT website, indicating that they have read, understand, and can meet the technical standards for athletic training students, either with or without accommodation. These standards outline the essential functional tasks that students must be able to perform to enroll in and complete the program. Students requiring special accommodations are encouraged to contact the Office of Disability Services (http://ds.gmu.edu).

Health Examinations and Certifications

Athletic training students are required to have evidence of completion of the three hepatitis B immunizations, a titer report indicating positive immunity, or a signed waiver. Students choosing not to complete hepatitis B immunizations will be required to sign a declination waiver. Some practicum sites require proof of tuberculosis screening in accordance with current U.S. Public Health Service recommendations. Students will be responsible for any costs associated with such screenings. All MSAT students must complete annual blood-borne pathogens and infectious disease exposure training offered in the practicum courses. All students must have proof of current Emergency Cardiac Care (CPR/AED Certification at the level of a Healthcare Professional (e.g. American Heart Association’s Basic Life Support for Healthcare Professionals, the Emergency Care & Safety Institute (ECSI)) and First Aid Certification. For additional information about ATEP academic policies and procedures refer to the program handbook (https://rht.gmu.edu/athletic-training/forms).

Background Check

Students will be required to undergo a criminal background check at the student’s expense, upon admission to the MSAT. Most practicum sites require an additional background check before engaging in patient treatment. The Clinical Education Coordinator will provide instructions to complete the background check. If a criminal background check fails to meet the requirements of a student’s assigned practicum site, the student will be withdrawn from the practicum site and may be prohibited from completion of the MSAT curriculum. Students are encouraged to disclose any criminal background incidences to the ATEP Director and Clinical Education Coordinator prior to practicum placement, to determine if the incidences might be detrimental to placement at a practicum site.

Transportation Responsibilities

It is the responsibility of the MSAT students to arrange transportation to and from their assigned practicum course sites. It is recommended that students have personal transportation. A limited number of sites are accessible via public transportation. In the case that a practicum site is not accessible by public transportation and the student does not have a car, it is suggested the student take public transportation as far as possible and then take a taxi to the site. The student is responsible for all transportation fees including but not limited to gas, parking, bus, metro, taxi and zip car expenses. Students that have financial difficulty are encouraged to meet with a financial aid advisor to seek additional assistance.

Summer Courses

Students are required to engage in MSAT summer courses. Housing and travel arrangements are the responsibility of the student.

Coaching Minor

Banner Code: COCH

Academic Advising

Phone: 703-993-5200
Email: srht@gmu.edu
Website: rht.gmu.edu/minor/coaching

This minor has been designed for Mason students interested in the coaching profession at all age and ability levels, including future high school teachers who also want to coach. With this selection of courses, students will be introduced to foundational concepts in sport psychology, philosophy, pedagogy, nutrition, athletic training and physiology as well as important sport industry business concepts. Coaching minors will complete their work with a field experience in sport coaching.

This minor is available to all Mason undergraduate students.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP:5.3.4 Minors (p. 90).
## Minor Requirements

Total credits: 18

### Coursework

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>ATEP 203</td>
<td>Prevention, Recognition, and Management of Athletic and Fitness Related Injuries</td>
<td>3</td>
</tr>
<tr>
<td>PHED 306</td>
<td>Psychomotor Learning</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 210</td>
<td>Foundations of Sport Coaching</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 320</td>
<td>Psychology of Sport</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 341</td>
<td>Field Experience in Sport Coaching</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>18</td>
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</tbody>
</table>

## Event Technical Production Minor (CEHD)

Banner Code: EVTP

Academic Advising

Phone: 703-993-6079
Email: theater@gmu.edu
Website: rht.gmu.edu/minor/eventtech

This minor is offered jointly with the College of Visual and Performing Arts (p. 803) (School of Theater (p. 878)).

This minor, available to all Mason undergraduate students, offers the opportunity to study special event management and event technologies, design and production for installations and special events. Students will gain insights into industry standards and practices regarding planning, managing, and executing live events and presentations. The required courses in this minor provide students with a foundational overview of management and production. Students can complement that knowledge with specific electives that meet their individual interests in events and areas of design and technology.

### Admissions & Policies

#### Policies

University policy states that students must earn 8 distinct credits that are not used for their major toward their minor, with a minimum grade of 2.00 earned in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

## Exercise, Fitness, and Health Promotion, MS

Banner Code: E1-MS-EFHP

Academic Advising

Phone: 703-993-2060
Email: gradrht@gmu.edu
Website: rht.gmu.edu/exercise-fitness-health-promotion/

This 36 credit Master of Science (MS) degree in Exercise, Fitness, and Health Promotion (EFHP) takes a science-based approach toward the fields of exercise science, sports medicine, athletic training, biomechanics, exercise physiology, sports performance and strength and conditioning.

The program focuses on the role of physical activity in the promotion of health, fitness and quality of life. The degree promotes scholarly inquiry and cultivates professionals able to understand and apply evidence-based scientific principles when working with physically-active individuals. Completion of the degree prepares individuals for employment in exercise, wellness, health and human performance-related professions or the pursuit of further academic study. The program is recognized by the NSCA Education Recognition Program (ERP) which recognizes regionally accredited academic institutions for their educational programs that have met, and continue to meet, education guidelines recommended by the NSCA.

This program offers the traditional research master’s thesis option or a research project option.

### Admissions

This program has a limited number of competitive graduate research assistantships that may be available through the College of Education and Human Development or other external research funding sources.
Other university funding opportunities (e.g. scholarships, assistantships, fellowships, loans) exist as well. Students may indicate their interest in being considered for an assistantship in their admission application.

**Policies**

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Requirements**

### Degree Requirements

Total credits: 36

All students are required to complete all core courses as well as courses in the concentration and a capstone thesis or research project (6 credits). The typical plan of study for the advanced practitioner concentration is 4 semesters of full-time classes (3 classes/9 credits per semester).

#### MS Core Coursework

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>EFHP 610</td>
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<tr>
<td>EFHP 611</td>
<td>Movement and Fitness Assessment</td>
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<tr>
<td>EFHP 612</td>
<td>Scientific Foundation of Applied Kinesiology</td>
<td>3</td>
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<tr>
<td>EFHP 620</td>
<td>Research Methods for Applied Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 640</td>
<td>Principles of Strength and Conditioning</td>
<td>3</td>
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</table>

**Total Credits** 15

#### Concentration in Advanced Practitioner (APRC)

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>Three credits of EFHP 599</td>
<td>Independent Study EFHP</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 613</td>
<td>Advanced Applied Biomechanics</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 614</td>
<td>Advanced Exercise Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>or EFHP 618</td>
<td>Exercise and Sport Psychology</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 690</td>
<td>Scientific Communications Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 15

#### Thesis or Project

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three credits of EFHP 598</td>
<td>Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>Three credits from one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFHP 798</td>
<td>Project 1</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 799</td>
<td>Thesis 2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 6

---

1. **Research Project Option**: students complete EFHP 598 Special Topics and EFHP 798 Project. In the topics course, students conduct a directed research project with an EFHP faculty member that is aligned with the faculty member’s research agenda. Then, in the project course, students work with the EFHP faculty member to develop a paper and presentation in the format of submission to a peer-reviewed journal and presentation at professional conferences, respectively.

2. **Thesis Option**: students complete EFHP 598 Special Topics and EFHP 799 Thesis. In EFHP 598 Special Topics, students develop independent research proposals. Then, in consultation with the EFHP Program Coordinator, students select two additional faculty members to form a three-member thesis committee. One committee member may be selected from faculty outside of the program. Students may not register for thesis credit until the student’s thesis committee and the EFHP Program Coordinator have approved a proposal. Once the committee approves the proposal, students register for thesis credit and conduct their independent research projects.

---

### Accelerated Master’s

#### Bachelor’s Degree (any)/Exercise, Fitness and Health Promotion, Accelerated MS Overview

Qualified Mason undergraduates may be admitted to a bachelor’s/accelerated master’s program and obtain a BA or BS in any degree area and an Exercise, Fitness and Health Promotion, MS. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this option.

#### Application Requirements

Applicants must have an overall GPA of at least 3.00 and have successfully completed BIOL 124 and BIOL 125. See the Accelerated Master’s Admissions (https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters) webpage to apply.

#### Accelerated Option Requirements

Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFHP 610</td>
<td>Advanced Exercise Physiology</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 611</td>
<td>Movement and Fitness Assessment</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 612</td>
<td>Scientific Foundation of Applied Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 620</td>
<td>Research Methods for Applied Kinesiology</td>
<td>3</td>
</tr>
</tbody>
</table>

---

### Food and Beverage Management Undergraduate Certificate

**Banner Code**: E1-CERB-FBM

**Academic Advising**

Phone: 703-993-4260

Email: sslocum@gmu.edu
This Food and Beverage Management Undergraduate Certificate provides students the opportunity to prepare for a career in a variety of food and beverage operations, including hospitality, restaurants, and institutional (e.g., schools, hospitals) food service management. This 24-credit certificate is available to all Mason undergraduate students as well as nonstudents who possess a bachelor’s degree. The required courses provide exposure to the core business functions needed to succeed in the food and beverage industry. Students can complement that knowledge with specific electives that further enhance food and beverage skills for a wide array of employment opportunities.

**Admissions & Policies**

**Policies**

A completed undergraduate certificate may be posted to the transcript only after completion of a bachelor’s degree. If applying after earning a bachelor’s degree, transcripts from all attended universities must be submitted.

For policies governing all undergraduate certificates, see AP.5.3.5 Undergraduate Certificate Policies (p. 90).

**Requirements**

**Certificate Requirements**

Total credits: 24

This certificate may be pursued on a part-time basis only.

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOUR 230</td>
<td>Introduction to Hospitality Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TOUR 310</td>
<td>Food and Beverage Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TOUR 445</td>
<td>Restaurant Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NUTR 315</td>
<td>Fundamentals of Cooking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NUTR 410</td>
<td>Introduction to Food Safety and Defense</td>
<td>3</td>
<td></td>
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</tbody>
</table>

Total Credits 18

<table>
<thead>
<tr>
<th>Electives</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits from the following:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOUR 314</td>
<td>Hospitality, Tourism, and Events Revenue Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOUR 343</td>
<td>Wine and Food Tourism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOUR 412</td>
<td>Hospitality, Tourism, and Events Management Marketing and Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOUR 450</td>
<td>Hospitality Human Resources Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOUR 460</td>
<td>Hospitality Facilities Operations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

**Health Promotion Minor**

**Banner Code: HPR**

**Academic Advising**

Phone: 703-993-2060
Email: srht@gmu.edu
Website: rht.gmu.edu/health-promotion-minor/

This minor is available to all Mason undergraduate students.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAL 110</td>
<td>Personal Health</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HEAL 230</td>
<td>Introduction to Health Behavior (Mason Core) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HEAL 372</td>
<td>Health Communication</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

<table>
<thead>
<tr>
<th>Electives</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three courses from the following:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEAL 220</td>
<td>Dimensions of Mental Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEAL 310</td>
<td>Drugs and Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEAL 325</td>
<td>Health Aspects of Human Sexuality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEAL 327</td>
<td>Women’s Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEAL 331</td>
<td>Men’s Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEAL 351</td>
<td>Relationship Health</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

**Health, Fitness, and Recreation Resources, BS**

**Banner Code: E1-BS-HFRR**

**Parks and Outdoor Recreation and Therapeutic Recreation Concentrations**

703-993-5261
Email: swoltz@gmu.edu
Fairfax campus: 2300 Thompson Hall
Prince William campus: 225 B Bull Run Hall

**Sport Management Concentration**

703-993-5200
Email: mgnoleba@gmu.edu  
Fairfax campus: 2300 Thompson Hall  
Website: https://rht.gmu.edu/under-degrees

This 120-credit degree allows students to specialize in one of three varied concentrations:
- Concentration in Parks and Outdoor Recreation (Green Leaf program)  
- Concentration in Sport Management  
- Concentration in Therapeutic Recreation

**Admissions & Policies**

**Policies**

For policies governing all undergraduate degrees, see Academic Policies (p. 77). Students should also review Mason Core (p. 142) requirements.

**Internship Application**

The internship is a 12-credit capstone course taken at the end of a student’s academic program. Students must have earned 90 credit hours and met the specific prerequisites for their concentration to be eligible for the internship (see PRLS 490 Recreation Management Internship (Mason Core) (p. 142), and SPMT 490 Internship (Mason Core) (p. 142). The internship is designed to be a capstone experience for each student in his or her specific concentration area.

The internship process begins with a mandatory meeting hosted by the internship coordinator. During the preliminary phase students will develop learning goals and consult with faculty on viable internship sites. Once the internship site has been selected, the student must complete 400 hours of an applied experience in their field of study for Sport Management and Parks and Outdoor Recreation. Therapeutic Recreation (TR) requires a 560-hour, sixteen consecutive week field placement experience in therapeutic recreation services under a certified therapeutic recreation therapist (CTRS) using the therapeutic recreation process.

Throughout the internship for all programs, the student will be monitored by a site supervisor (CTRS for therapeutic recreation), as well as a university supervisor, to facilitate a meaningful experience.

**Requirements**

**Degree Requirements**

Total credits: 120

This is a Green Leaf program.

**Concentration in Parks and Outdoor Recreation (POR)**

This concentration within the Recreation Management program explores the contribution of recreation and parks to public well-being and quality of life. The curriculum includes courses in natural resources management, outdoor recreation programming, and environmental education. The Recreation Management program is accredited by the Council on Accreditation of Parks, Recreation, Tourism and Related Professions. Graduates of this career ready program are employed in national, state, and local recreation and park agencies, non-profit organizations, and private and commercial operations. Students complete both a supervised practicum and internship in professional settings.

**Mason Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning:</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

| Literature (p. 147) | 3 |
| Arts (p. 144)       | 3 |
| Western Civilization/World History (p. 151) | 3 |
| Social and Behavioral Sciences (p. 150) | 3 |
| Global Understanding (p. 146) | 3 |
| Natural Science (p. 148) | 8 |
| Synthesis/Capstone  | 1 |

**Total Credits**

38

1 Met by PRLS 490 Recreation Management Internship (Mason Core) (p. 142), a program requirement

**Professional Sequence**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEP 120</td>
<td>First Aid and Emergency Care</td>
<td>2</td>
</tr>
<tr>
<td>PRLS 210</td>
<td>Introduction to Recreation and Leisure</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 241</td>
<td>Practicum</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 300</td>
<td>People with Nature</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 302</td>
<td>Park Management and Operations</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 310</td>
<td>Program Planning and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 316</td>
<td>Leadership and Outdoor Education</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 317</td>
<td>Social Psychology of Play and Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 323</td>
<td>Program Leadership and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 327</td>
<td>Foundations of Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 362</td>
<td>Cultural and Environmental Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 402</td>
<td>Human Behavior in Natural Environments</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 405</td>
<td>Planning and Operation of Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 410</td>
<td>Administration of SRT Organizations I</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 411</td>
<td>Administration of SRT Organizations II</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 460</td>
<td>Sport and Recreation Law</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 490</td>
<td>Recreation Management Internship (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>PRLS 501</td>
<td>Introduction to Natural Resources Law</td>
<td>3</td>
</tr>
<tr>
<td>SRST 200</td>
<td>History of Sport and Leisure in America</td>
<td>3</td>
</tr>
<tr>
<td>SRST 450</td>
<td>Research Methods (Satisfies the university Writing Intensive requirement)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**

68
### Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional 14 credits from:</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Any course, including Physical Activity for Lifetime Wellness courses (p. 1196)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or a minor (<a href="http://catalog.gmu.edu/programs/#filter=filter_29">http://catalog.gmu.edu/programs/</a>)</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

### Concentration in Sport Management (SPMT)

This concentration enhances the professional development of liberal arts-educated students, thereby preparing them to assume entry-level managerial positions in the multi-billion dollar sport industry, including private enterprises, government or public employment sectors, nonprofit or voluntary agencies, and commercial sport ventures. Preparation in sport marketing, sales, finance, ethics, sport communications, economics, law, operations, planning, and program leadership fosters the skills that enhance students’ acquisition and advancement in sport management careers. An integral part of the program is the opportunity to complete two field experiences in sport organizations: a part-time practicum and a full-time internship.

### Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (p. 142)</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Information Technology (p. 143)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 250 Introductory Statistics I (Mason Core) (p. 142)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Synthesis/Capstone</td>
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</tbody>
</table>

Total Credits | 37

1 Met by SPMT 490 Internship (Mason Core) (p. 142), a program requirement

### Professional Sequence

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 241</td>
<td>Practicum</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 302</td>
<td>Philosophical and Ethical Dimensions of Sport</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 405</td>
<td>Sport Venues and Events</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 412</td>
<td>Sport Marketing and Sales</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 420</td>
<td>Economics and Finance in the Sport Industry</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 430</td>
<td>Sport Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 440</td>
<td>Global Perspectives in Sport</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 455</td>
<td>Governance and Policy in Sport Organizations</td>
<td>3</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPMT 462</td>
<td>Sport Business Law</td>
<td>3</td>
</tr>
<tr>
<td>or PRLS 460</td>
<td>Sport and Recreation Law</td>
<td></td>
</tr>
<tr>
<td>SPMT 470</td>
<td>Strategic Management and Leadership in Sport Organizations</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 475</td>
<td>Sport Management Professional Development Seminar</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 490</td>
<td>Internship (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>SRST 200</td>
<td>History of Sport and Leisure in America</td>
<td>3</td>
</tr>
<tr>
<td>SRST 450</td>
<td>Research Methods</td>
<td>3</td>
</tr>
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</table>

Total Credits | 57

### Guided Electives

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Select 9 credits from the following:</td>
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</tr>
<tr>
<td>SPMT courses (p. 2213)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRST courses (p. 2219)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPMT 480 Special Topics in Sport Management</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits | 9

### Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select an additional 17 credits from any course. (p. 1196)</td>
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<td>17</td>
</tr>
</tbody>
</table>

Total Credits | 17

### Concentration in Therapeutic Recreation (TR)

This concentration within the Recreation Management program teaches a holistic approach to the treatment for people with disabilities across the lifespan. Completion of the therapeutic recreation (TR) foundation, issues, processes, programming and assessment courses to name a few, as well as an internship supervised by a Certified Therapeutic Recreation Specialist (CTRS), prepares graduating seniors to sit for the national exam sponsored by the National Council for Therapeutic Recreation Certification ([http://nctrc.org](http://nctrc.org)) and become a CTRS. The Recreation Management program is accredited by the Council on Accreditation of Parks, Recreation, Tourism and Related Professions. Graduates find employment in clinical and community settings; senior and adult health care; non-profit organizations; and schools.

### Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (p. 142)</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Information Technology (p. 143)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 250 Introductory Statistics I (Mason Core) (p. 142)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Science: BIOL 124 Human Anatomy and Physiology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>or BIOL 125 Human Anatomy and Physiology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSYC 100 Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Science:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 124 Human Anatomy and Physiology</td>
<td>4</td>
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</tr>
<tr>
<td>BIOL 125 Human Anatomy and Physiology</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
Synthesis/Capstone ¹

| Total Credits | 38 |

¹ Met by PRLS 490 Recreation Management Internship (Mason Core) (p. 142), a program requirement

### Professional Sequence

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ATEP 120</td>
<td>First Aid and Emergency Care</td>
<td>2</td>
</tr>
<tr>
<td>KINE 450</td>
<td>Research Methods (Satisfies the university Writing Intensive requirement)</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 210</td>
<td>Introduction to Recreation and Leisure</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 241</td>
<td>Practicum</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 310</td>
<td>Program Planning and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 316</td>
<td>Leadership and Outdoor Education</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 317</td>
<td>Social Psychology of Play and Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 323</td>
<td>Program Leadership and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 327</td>
<td>Foundations of Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 405</td>
<td>Planning and Operation of Recreation Facilities</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 410</td>
<td>Administration of SRT Organizations I</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 411</td>
<td>Administration of SRT Organizations II</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 416</td>
<td>Trends and Programming Assessment in Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 417</td>
<td>Processes, Techniques and Supervision in Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 418</td>
<td>Assessment in Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 460</td>
<td>Sport and Recreation Law</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 490</td>
<td>Recreation Management Internship (Mason Core) (p. 142)</td>
<td>12</td>
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<tr>
<td>PRLS 503</td>
<td>Administration and Disability Rights in Therapeutic Recreation</td>
<td>3</td>
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<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td>3</td>
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<tr>
<td>SRST 200</td>
<td>History of Sport and Leisure in America</td>
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| Total Credits | 71 |

### Electives

<table>
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<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional 11 credits from any course, including: (p. 1196)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical Activity for Lifetime Wellness courses (p. 221)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATEP 201 Medical and Scientific Terminology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minor in Psychology (p. 479)</td>
<td></td>
</tr>
</tbody>
</table>

| Total Credits | 11 |

### Accelerated Master's

#### Bachelor's Degree (selected)/Sport and Recreation Studies, Accelerated MS

**Overview**

Qualified Mason undergraduates may be admitted to a bachelor’s/accelerated master’s program and obtain a BA or BS in any degree area and a Sport and Recreation Studies, MS. See AP6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this option.

### Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). Additionally, applicants must have an overall GPA of at least 3.00. See the Accelerated Master’s Admissions (https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters) webpage to apply.

### Accelerated Option Requirements

During their senior year, students complete three to six graduate credits in consultation with the academic program coordinator that apply to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the master’s. A minimum grade of B must be earned to be eligible to count as advanced standing. While still in undergraduate status, students may take up to six graduate credits that are reserve graduate credit and therefore, are applicable to the master’s but do not count toward the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which courses are to be designated as advanced standing and reserve graduate credit.

### Bachelor’s Degree (selected)/Environmental Science and Policy, Accelerated MS

**Overview**

This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy, MS (p. 696) in less time than if they had first graduated with an environmentally-focused Green Leaf-designated (p. 107) BA or BS degree and then applied to the MS program sequentially.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

### Admission Requirements

Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated (p. 107) major or minor may apply for provisional acceptance into this accelerated master’s program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 212 General Chemistry II (Mason Core) (p. 142) and three semesters of biology, including a course in ecology, or the equivalent, for example:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>13</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td></td>
</tr>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology, Molecules and Cells</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following options:
By the beginning of the undergraduate’s senior year, they should first submit a Graduate Application for Accelerated Master’s Program form (obtained from the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us)). Secondly, in their senior year accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application with a minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. Upon completion and conferral of the undergraduate degree in a Green Leaf-designated (p. 107) program, in the semester indicated in the application, they must additionally submit the Bachelor’s/Accelerated Master’s Transition form (found on the Office of the University Registrar website (http://registrar.gmu.edu/forms)) and will subsequently be admitted into graduate status.

By at least the beginning of their senior year, they should seek out a faculty member in the Department of Environmental Science and Policy (p. 688) who is willing to serve as their advisor. This advisor will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies. Admission into a research-oriented master’s concentration is dependent upon securing the agreement of a faculty advisor. Faculty from a variety of departments and colleges at George Mason (called “program faculty”) can serve as master’s advisors. Potential students are encouraged to speak with the graduate program coordinator in the department to obtain guidance on this issue.

**Application Requirements**

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog, excluding the GRE exam requirement (which is not required for those enrolled in the accelerated program). This includes three letters of recommendation (at least one from a former professor or someone with a PhD), a recent resume, a statement of interest/research goals and interests (including information on the candidate’s proposed MS research), and a letter from their advisor stating that the advisor agrees to take on the candidate as an MS student, how the candidate would be a good fit for them and why candidate’s research topic would be suitable.

For information specific to the accelerated Environmental Science and Policy, MS (p. 696), see Graduate Admissions on the department’s website (http://esp.gmu.edu/academic-programs/graduate/admissions).

**Reserve Graduate Credits**

Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate environmentally-focused graduate coursework may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master’s program and must then complete an additional 27 credits to receive the master’s degree.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition form found on the Office of the University Registrar website (http://registrar.gmu.edu/forms) (as noted above).

Students may take up to 6 additional environmentally-focused graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, an MS could be completed with 21 post-bachelor’s credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department.

**Hospitality Management Minor**

Banner Code: HPTM

Academic Advising

Phone: 703-993-5200

Email: srht@gmu.edu

**Admissions & Policies**

**Admissions**

The Hospitality Management minor is open to all Mason undergraduate students except for those enrolled in the Hospitality Management Concentration in the BS in Tourism and Events Management.

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 15

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>TOUR 230</td>
<td>Introduction to Hospitality Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 301</td>
<td>Hotel Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 310</td>
<td>Food and Beverage Management</td>
<td>3</td>
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<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOUR 314</td>
<td>Hospitality, Tourism, and Events Revenue Management</td>
<td>6</td>
</tr>
</tbody>
</table>

For information specific to the accelerated Environmental Science and Policy, MS (p. 696), see Graduate Admissions on the department’s website (http://esp.gmu.edu/academic-programs/graduate/admissions).
Kinesiology, BS

Banner Code: E1-BS-KNES

Academic Advising
Phone: 703-993-5261
Email: srht@gmu.edu
Website: rht.gmu.edu/kinesiology/kinesiology-degree-requirements

This degree in kinesiology is a demanding science-based program designed to prepare students for a career in clinical exercise, coaching, corporate fitness, exercise and sport psychology, medical and exercise equipment sales, personal training, sport and exercise nutrition, sport science, or wellness/fitness management. The Kinesiology (KINE) program provides students with a strong science foundation for post-graduate specialized study in kinesiology or professional schools (e.g., chiropractic, medical, physical therapy). The KINE program has a comprehensive approach to the study of human movement. Three separate internship experiences totaling 700 hours provide KINE students with the opportunity to apply evidence-based knowledge and its practical application in general fitness, clinical and sports performance settings.

The KINE degree is designed to assist students in their preparation for nationally-recognized certifications, specifically those offered by the American College of Sports Medicine (ACSM) and the National Strength and Conditioning Association (NSCA). See Admissions & Policies (p. 232) for details.

Admissions & Policies

Policies
Certification
Students are required to challenge either the ACSM-Certified Exercise Physiologist (EP-C) or the NSCA-Certified Strength and Conditioning Specialist (CSCS) exam by the 7th week of the semester in which they are enrolled in KINE 490 Kinesiology Internship III (Mason Core) (p. 142). All exam registration fees are the responsibility of the student. Scores must be reported to the KINE Internship Coordinator before students can receive credit for KINE 490 Kinesiology Internship III (Mason Core) (p. 142).

GPA and Grading
Students are required to maintain a minimum cumulative GPA of 2.5 each semester and to receive a grade of C or better in all major coursework (BIOL 124 Human Anatomy and Physiology, BIOL 125 Human Anatomy and Physiology, STAT 250 Introductory Statistics I (Mason Core) (p. 142), as well as all Professional Sequence courses). Failure to do so will result in probation or termination from the KINE program. The Kinesiology Academic Advisor is available to assist KINE students with course registration and academic plans. It is expected that KINE students will meet with their Academic Advisor each semester that they are enrolled at GMU.
SPMT 320  Psychology of Sport  3

Total Credits  68

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional 14 credits from any courses in the university catalog.</td>
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</tr>
<tr>
<td></td>
<td>Electives (p. 1196)</td>
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</tbody>
</table>

Total Credits  14

Special Requirements

Fees and Expenses

All KINE (p. 1889) courses have a per credit fee of $15. Fees cover the following:

- laboratory supplies and equipment
- clinical supplies
- internship attire

Technical Standards

This degree is academically-rigorous with a significant experiential learning component, which places specific demands and requirements on its students. After admission into the KINE program, students must submit a technical standards certification statement indicating that they have read, understand, and can meet the technical standards for KINE students, either with or without accommodation. These standards outline the essential functional tasks that students must be able to perform to enroll in and complete the program. Students requiring special accommodations are encouraged to contact the Office of Disability Services (http://ds.gmu.edu).

Health Examinations and Certifications

KINE students are required to obtain a health examination and immunizations before beginning the internship phase of the program. Evidence of completion of the three hepatitis B immunizations and proof of tuberculosis screening in accordance with current U.S. Public Health Service recommendations must be provided. Costs associated with said screenings are to be assumed by the KINE student. Those who choose not to complete hepatitis B immunizations will be required to sign a declination waiver. All students must have Emergency Cardiac Care (CPR, AED) and First Aid certifications before entering their first internship experience and must maintain these certifications through the remainder of the KINE degree program.

Background Check

Students may be required to undergo a criminal background check prior to the first internship experience. Students must assume the risk that classes may be deferred and their program delayed due to the individual severity of notations on such a check and review by individual agencies. Students are encouraged to disclose any criminal background incidences to the KINE Program Coordinator prior to internship placement.

Kinesiology Minor

Banner Code: KNES

Academic Advising

Phone: 703-993-5261
Email: srht@gmu.edu

Website: rht.gmu.edu/minor/kine

Admissions & Policies

Admissions

This minor is available to all Mason undergraduate students except those earning a BS in Kinesiology.

Policies

Eight credits of coursework must be unique to the minor and may not be used to fulfill requirements of the student’s major, concentration, an undergraduate certificate, or another minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Required Courses

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<th>Code</th>
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<tr>
<td>ATEP 300</td>
<td>Functional Anatomy</td>
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</tr>
<tr>
<td>KINE 200</td>
<td>Methods of Exercise Instruction</td>
<td>3</td>
</tr>
<tr>
<td>KINE 310</td>
<td>Exercise Physiology I</td>
<td>3</td>
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</table>

Total Credits  9

Electives

<table>
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<tr>
<td></td>
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<tr>
<td>KINE 100</td>
<td>Introduction to Kinesiology</td>
<td></td>
</tr>
<tr>
<td>KINE 250</td>
<td>Endurance Sport Program Design</td>
<td></td>
</tr>
<tr>
<td>KINE 320</td>
<td>Principles of Human Nutrition</td>
<td></td>
</tr>
<tr>
<td>KINE 350</td>
<td>Exercise Prescription and Programming</td>
<td></td>
</tr>
<tr>
<td>KINE 360</td>
<td>Strength Training: Concepts and Applications</td>
<td></td>
</tr>
<tr>
<td>KINE 370</td>
<td>Exercise Testing and Evaluation</td>
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</tr>
<tr>
<td>KINE 380</td>
<td>Exercise Prescription and Programming for Special Populations</td>
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</tr>
<tr>
<td>KINE 400</td>
<td>Biomechanics</td>
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<tr>
<td>KINE 410</td>
<td>Exercise Physiology II</td>
<td></td>
</tr>
<tr>
<td>KINE 420</td>
<td>Sport and Exercise Nutrition</td>
<td></td>
</tr>
<tr>
<td>SPMT 320</td>
<td>Psychology of Sport</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits  9

Kinesiology Graduate Certificate

(pending SCHEV approval)

Banner Code: E1-CERG-KNES

Dr. Joel Martin

207 Bull Run Hall
The term Tactical Athlete (TA) can refer to firefighters, police officers, emergency medical personnel, and soldiers in all branches of the military. The unique physical requirements of the TA require high levels of fitness and the ability to perform strenuous tasks with little to no warning. For all TA fields, fitness testing, fitness, and injury prevention are inherently part of the culture. The United States Bureau of Labor reports average to above average growth of firefighters, police, and military occupations over the next decade. According to data from 2015 there are 1.1 million (345,000 career, 815,000 volunteer) firefighters, over 800,000 police officers, and more than 1.2 million active duty military in the US.

The Kinesiology Graduate Certificate with a concentration in Tactical Athlete Strength, Conditioning and Injury Prevention features an 8 course, 24 credit, 100% online curriculum. The mission of the program is to provide graduates with foundational knowledge, skills and abilities to become leaders in tactical strength, conditioning and injury prevention. Throughout the curriculum, students will be provided a science-based approach toward the fields of exercise science, sports medicine, athletic training, exercise physiology, human performance and strength and conditioning. Upon graduation students will be prepared to enter the workforce and immediately apply knowledge to improve the health and fitness of a tactical populations.

Admissions

Admissions Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information about this program, see Graduate Application Deadlines and Requirements on the College website (https://catalog.gmu.edu/admissions/graduate-policies).

Requirements

Note: as of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

Certificate Requirements

Total credits: 24

This certificate may be pursued on a part-time basis only.

Concentration in Tactical Athlete Strength, Conditioning & Injury Prevention (TSCI)

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ATEP 510</td>
<td>Advanced Functional Anatomy</td>
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<tr>
<td>EFHP 610</td>
<td>Advanced Exercise Physiology</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 611</td>
<td>Movement and Fitness Assessment</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 613</td>
<td>Advanced Applied Biomechanics</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 640</td>
<td>Principles of Strength and Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 617</td>
<td>Corrective and Preventive Exercise Techniques</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 598</td>
<td>Special Topics (students must earn 3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>EFHP 794</td>
<td>Tactical Athlete Field Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 24

Physical Education, BSEd

Banner Code: E1-BSED-PHED

Academic Advising

Phone: 703-993-2096
Email: phed@gmu.edu
Website: rht.gmu.edu/health-and-physical-education/

Completing this degree fulfills requirements for licensure in Health and Physical Education (PK-12) in Virginia. Students complete a student teaching experience in their final semester.

Admissions & Policies

Admissions

Four-Year Students

Students entering as freshmen with an interest in majoring in physical education will initially be accepted with BPRE status (Pre-Bachelor in Health and Physical Education). Students must successfully complete a minimum of 45 credits and attain a cumulative GPA of 2.50 to apply to the BSED in Physical Education Program. In addition:

- Recommended: submit passing score of 150 for the Praxis Core Academic Skills for Educators in Math (5732) and 470 composite score on VCLA Reading and Writing or passing scores on approved substitute tests
• have earned passing grades in
  • BIOL 124 Human Anatomy and Physiology
  • BIOL 125 Human Anatomy and Physiology
  • PHED 202 Teaching Skillful Movement C or better
• have earned at least 10 professional points (https://rht.gmu.edu/health-and-physical-education/professional-development-plan).

Degree-Seeking Transfer Students
Transfer students can apply for BSEd status by having:

• earned a minimum of 45 credits from their previous institution with a cumulative GPA of 2.50 or by completing 12 credits at Mason with a minimum of a 2.50 GPA;
• Recommended passing scores of 150 for the Praxis Core Academic Skills for Educators in Math (5732) and 470 composite score on VCLA Reading and Writing or passing scores on approved substitute tests.
• have earned passing grades in
  • BIOL 124 Human Anatomy and Physiology
  • BIOL 125 Human Anatomy and Physiology
  • PHED 202 Teaching Skillful Movement C or better
• earned at least 10 professional points (https://rht.gmu.edu/health-and-physical-education/professional-development-plan).

Policies
For policies governing all undergraduate degrees, see the AP5 Undergraduate Policies (p. 87) section of the catalog.

Student Teaching Internship
To enroll in PHED 415 Student Teaching in Physical Education (Mason Core) (p. 142), physical education majors must:

• have a minimum 2.50 GPA in the last 60 credits of coursework
• have passed and electronically submitted test scores for the VCLA and PRAXIS II exams to George Mason University and provide a paper copy of the test scores to the internship coordinator
• have satisfactorily completed all required Mason core and professional concentration courses.

The application must be completed one full semester before taking PHED 415 Student Teaching in Physical Education (Mason Core) (p. 142). Application deadlines are listed below and forms are located online (http://rht.gmu.edu/programs/phed/student_teaching).

Application Deadlines
• Fall Semester—February 1
• Spring Semester—September 1

Requirements

Degree Requirements
Total credits: 120

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>Written Communication (p. 142)</td>
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<td>6</td>
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<tr>
<td>Oral Communication (p. 142)</td>
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<td>3</td>
</tr>
<tr>
<td>Information Technology (p. 143)</td>
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<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td></td>
<td>3</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 106 Quantitative Reasoning (Mason Core) (p. 142) (recommended course)</td>
<td>3</td>
<td></td>
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<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
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<tr>
<td>Arts (p. 144)</td>
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<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
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<td>3</td>
</tr>
<tr>
<td>Natural Science:</td>
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<td></td>
</tr>
<tr>
<td>BIOL 124 Human Anatomy and Physiology</td>
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<td>4</td>
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<tr>
<td>BIOL 125 Human Anatomy and Physiology</td>
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<tr>
<td>Synthesis/Capstone</td>
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</tbody>
</table>

Total Credits 38

1 Fulfilled by PHED 415 Student Teaching in Physical Education (Mason Core) (p. 142), listed below in professional sequence.

Professional Sequence
Note: Students are not permitted to enroll in HEAL 405 Teaching Methods in Health Education (K-12), PHED 308 Adapted Physical Education, PHED 403 Elementary School Instruction in Physical Education, PHED 404 Middle and High School Instruction in Physical Education, and PHED 415 Student Teaching in Physical Education (Mason Core) (p. 142), until they have met all BSEd application requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ATEP 120 First Aid and Emergency Care</td>
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<tr>
<td>ATEP 300 Functional Anatomy</td>
<td>3</td>
<td></td>
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<tr>
<td>EDRD 300 Literacy and Curriculum Integration</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 302 Human Growth and Development</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HEAL 110 Personal Health</td>
<td>3</td>
<td></td>
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<tr>
<td>HEAL 200 School and Community Safety</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>HEAL 250 Introduction to School Health</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HEAL 405 Teaching Methods in Health Education (K-12)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>KINE 310 Exercise Physiology I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 202 Teaching Skillful Movement</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 218 Technology in Health and Physical Education</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHED 273 Net and Target Games</td>
<td>3</td>
<td></td>
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<tr>
<td>PHED 274 Dance and Educational Gymnastics</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHED 275 Field and Invasion Games</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 276 Health-Related Fitness Education</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 306 Psychomotor Learning</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 308 Adapted Physical Education</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 320 Student Assessment in Health and Physical Education</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 340 Social and Cultural Issues in Physical Education (Satisfies the university Writing Intensive requirement)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 403 Elementary School Instruction in Physical Education</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED 404 Middle and High School Instruction in Physical Education</td>
<td>3</td>
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<tr>
<td>PHED 415 Student Teaching in Physical Education (Mason Core) (p. 142)</td>
<td>12</td>
<td></td>
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</tbody>
</table>

2 Fulfilled by PHED 415 Student Teaching in Physical Education (Mason Core) (p. 142), listed below in professional sequence.
Recreation Management Minor

PRLS 316  Leadership and Outdoor Education  3
Select 9 credits in electives.

Total Credits  82

1  Requires a grade of C or better.
2  Students must complete student teaching (PHED 415 Student Teaching in Physical Education (Mason Core) (p. 142)) within 5 years of completing PHED 202 Teaching Skillful Movement. If more than five years has lapsed from taking PHED 202 Teaching Skillful Movement and student teaching (PHED 415 Student Teaching in Physical Education (Mason Core) (p. 142), students will have to retake this foundational course before they can student-teach.

Professional Development and Fitness Requirement
Students must earn at least 10 professional development points (https://rht.gmu.edu/health-and-physical-education/professional-development-plan) to achieve BSEd status and 20 additional points to apply for student teaching. Professional development points may be earned by attending or volunteering at various events and activities.

Additionally, students will be expected to achieve and maintain the healthy zone of health related fitness as measured by FitnessGram® throughout their program. Accommodations will be made for students with documented physical disabilities.

Recreation Management Minor
Banner Code: RMGT

Academic Advising
Phone: 703-993-2027
Email: jkozlows@gmu.edu
Website: rht.gmu.edu/minor/rmgt

Admissions
This minor (including a practicum) is available to all Mason undergraduate students, with the exception of those enrolled in the Health, Fitness, and Recreation Resources, BS (p. 227) with a concentration in either Parks and Outdoor Recreation or Therapeutic Recreation.

Policies
Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP:5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Core Courses
All required 200 and 300 PRLS courses must be completed first.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRLS 210</td>
<td>Introduction to Recreation and Leisure</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 241</td>
<td>Practicum 1</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 310</td>
<td>Program Planning and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>or PRLS 220</td>
<td>Experiential Education Theory and Application</td>
<td></td>
</tr>
<tr>
<td>PRLS 316</td>
<td>Leadership and Outdoor Education</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 327</td>
<td>Foundations of Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 410</td>
<td>Administration of SRT Organizations I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  18

1  PRLS 241 Practicum and PRLS 410 Administration of SRT Organizations I may be taken concurrently.

Sport Communication Minor (CEHD)
Banner Code: SCOM

Academic Advising
Phone: 703-993-5200
Email: srht@gmu.edu
Website: rht.gmu.edu/minor/sc

This minor offers students the opportunity to examine important and timely sports-related issues in an ethical context as well as analyze sports from cross-cultural perspectives. Students will gain an understanding of sport mass media, sport communication, sports reporting, interpersonal and organizational communication, and the impact each has in our global society. The courses cover theory and practice in cross-platform communication, sports ethics and theoretical underpinnings, public relations, and marketing. The minor provides applied fundamentals for students seeking employment in the commercial world of sports (areas such as management or promotion of athletic organizations) and in sports media. The sport communication minor is offered jointly with the Department of Communication in the College of Humanities and Social Sciences.

Admissions & Policies

Admissions
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP:5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 303</td>
<td>Writing across the Media</td>
<td>3</td>
</tr>
<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
<td>3</td>
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</tbody>
</table>
SPMT 201 Introduction to Sport Management 3
or SPMT 304 Sport, Culture, and Society
SPMT 430 Sport Communication 3

Total Credits 12

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 204</td>
<td>Introduction to Public Relations</td>
<td>6</td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>COMM 351</td>
<td>News Writing and Reporting</td>
<td></td>
</tr>
<tr>
<td>COMM 356</td>
<td>Video: Performance and Writing</td>
<td></td>
</tr>
<tr>
<td>COMM 359</td>
<td>Media Management</td>
<td></td>
</tr>
<tr>
<td>COMM 361</td>
<td>Online Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 371</td>
<td>Sports Writing and Reporting</td>
<td></td>
</tr>
<tr>
<td>COMM 372</td>
<td>Sports and the Media</td>
<td></td>
</tr>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td></td>
</tr>
<tr>
<td>SPMT 302</td>
<td>Philosophical and Ethical Dimensions of Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td></td>
</tr>
<tr>
<td>SPMT 318</td>
<td>Diversity and Inclusion Issues in Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 405</td>
<td>Sport Venues and Events</td>
<td></td>
</tr>
<tr>
<td>SPMT 412</td>
<td>Sport Marketing and Sales</td>
<td></td>
</tr>
<tr>
<td>SPMT 420</td>
<td>Economics and Finance in the Sport Industry</td>
<td></td>
</tr>
<tr>
<td>SPMT 440</td>
<td>Global Perspectives in Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 455</td>
<td>Governance and Policy in Sport Organizations</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

1 • Special topics courses, when relevant, may be used to fulfill this requirement with the prior written approval of the director.
• Depending on which courses students took as a required course (above), they may use either SPMT 201 Introduction to Sport Management or SPMT 304 Sport, Culture, and Society as an elective.
• COMM majors are required to take one elective SPMT course.

Sport Management Minor
Banner Code: SPMT

Academic Advising
Phone: 703-993-5200
Email: srht@gmu.edu
Website: rht.gmu.edu/sport-management/degree-options/minor/

This minor introduces students to the sports industry and the sport management academic discipline. Students will learn about the principles of finance, economics, policy, and governance as they relate to sports organizations. They will then have the opportunity to choose from a series of sport management courses to complete the minor, based on their area of theoretical or practical interest.

Admissions & Policies

Admissions
This minor is available to all Mason undergraduate students, with the exception of those enrolled in the Health, Fitness, and Recreation Resources, BS (p. 227) with a concentration in Sport Management.

Policies
Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 420</td>
<td>Economics and Finance in the Sport Industry</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 455</td>
<td>Governance and Policy in Sport Organizations</td>
<td>3</td>
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</tbody>
</table>

Select three from the following: 9
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRLS 410</td>
<td>Administration of SRT Organizations I</td>
<td></td>
</tr>
<tr>
<td>PRLS 460</td>
<td>Sport and Recreation Law</td>
<td></td>
</tr>
<tr>
<td>SPMT 302</td>
<td>Philosophical and Ethical Dimensions of Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td></td>
</tr>
<tr>
<td>SPMT 405</td>
<td>Sport Venues and Events</td>
<td></td>
</tr>
<tr>
<td>SPMT 412</td>
<td>Sport Marketing and Sales</td>
<td></td>
</tr>
<tr>
<td>SPMT 430</td>
<td>Sport Communication</td>
<td></td>
</tr>
<tr>
<td>SPMT 440</td>
<td>Global Perspectives in Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 480</td>
<td>Special Topics in Sport Management</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

Sport Management Graduate Certificate
Banner Code: E1-CERG-SPMG

Academic Advising
Phone: 703-993-2060
Email: gradsrht@gmu.edu
Website: https://rht.gmu.edu/sport-recreation-studies/

Concentrations
Students complete the certificate by choosing one of the following concentrations:

Concentration in International Sport Management
This concentration offers students the opportunity to study the managerial aspects of international sport enterprises. Theoretically-
grounded sport management skills will be examined and applied within the global context of the sport industry.

**Concentration in Sport Coaching**

This concentration provides students the opportunity to prepare for a career in coaching. Theoretically-grounded content addresses advanced skills applied to a variety of coaching situations.

### Admissions & Policies

#### Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

### Requirements

#### Certificate Requirements

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Students pursuing this graduate certificate may choose from any of the following concentrations:

**Concentration in International Sport Management (ISPM)**

Total credits: 15

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SPMT 551</td>
<td>Sport in the Global Marketplace</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 613</td>
<td>Strategic Leadership in Sport Organizations</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 620</td>
<td>Ethical Issues in Global Sport</td>
<td>3</td>
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<tr>
<td><strong>Total Credits</strong></td>
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<table>
<thead>
<tr>
<th>Electives</th>
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<tbody>
<tr>
<td>Select two courses from the following:</td>
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<tr>
<td>SPMT 555</td>
<td>The Australian Model of Sport</td>
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</tr>
<tr>
<td>SPMT 556</td>
<td>The Global Soccer Industry</td>
<td></td>
</tr>
<tr>
<td>SPMT 651</td>
<td>Sport and International Development</td>
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</tr>
<tr>
<td>SPMT 652</td>
<td>Governance and Policy in International Sport</td>
<td></td>
</tr>
<tr>
<td>Other SPMT graduate courses with advisor approval (p. 2213)</td>
<td></td>
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<tr>
<td>Other SRST graduate courses with advisor approval (p. 2219)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other PRLS graduate courses with advisor approval (p. 2038)</td>
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<td><strong>Total Credits</strong></td>
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#### Concentration in Sport Coaching (SPTC)

Total credits: 15

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<tr>
<th>Required Courses</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SPMT 614</td>
<td>Legal Issues in Sport</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 618</td>
<td>Psychology of Coaching</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 631</td>
<td>Theoretical Models of Sport Coaching</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>9</strong></td>
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<table>
<thead>
<tr>
<th>Electives</th>
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</thead>
<tbody>
<tr>
<td>Select two courses from the following:</td>
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<tr>
<td>SRST 598</td>
<td>Special Topics</td>
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<tr>
<td>SPMT graduate courses (p. 2213)</td>
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<td></td>
</tr>
<tr>
<td>SRST graduate courses (p. 2219)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRLS graduate courses (p. 2038)</td>
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<td></td>
</tr>
<tr>
<td>Additional courses with advisor approval</td>
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<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

### Sport and American Culture Minor (CEHD)

**Banner Code: SAMC**

**Academic Advising**

Phone: 703-993-1250
Email: histarsh@gmu.edu
Website: rht.gmu.edu/minor/sac

This interdisciplinary minor is offered jointly by the School of Recreation, Health, and Tourism (p. 221) and the Department of History and Art History (p. 392). This minor is for students who want to immerse themselves in the study of sport, sociology, and history. Students must take two required and four elective courses (two from Sport Management and two from History).

### Admissions & Policies

#### Admissions

This minor is available to all Mason undergraduate students.

#### Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements

Total credits: 18

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 341</td>
<td>History of Sport in the United States</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>
Electives (Sport Management)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPMT 318</td>
<td>Diversity and Inclusion Issues in Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 321</td>
<td>America Through Baseball</td>
<td></td>
</tr>
<tr>
<td>SPMT 322</td>
<td>Football and American Culture</td>
<td></td>
</tr>
<tr>
<td>SPMT 323</td>
<td>America and the Modern Olympics</td>
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</table>

Total Credits: 6

Electives (History)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 337</td>
<td>Race and Gender in American Sports</td>
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</tr>
<tr>
<td>HIST 338</td>
<td>History of College Athletics</td>
<td></td>
</tr>
<tr>
<td>HIST 339</td>
<td>History of Baseball</td>
<td></td>
</tr>
<tr>
<td>HIST 340</td>
<td>Basketball and the American Experience</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

Sport and Computer Game Design Minor (CEHD)

Banner Code: SCGD

Academic Advising

Phone: 703-993-5200
Email: srht@gmu.edu
Website: rht.gmu.edu/minor/scg

This minor is offered jointly with Computer Game Design (p. 817).

It offers academic preparation in an industry that has seen rapid expansion in the sale, design, and production of sport-related games around the world. The required courses provide students with a foundational overview of the sports industry, the sport management academic discipline, and computer game design. Students can complement that knowledge with the selection of courses in these two disciplines that meet their individual interests.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 210</td>
<td>Basic Game Design</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 230</td>
<td>History of Computer Game Design</td>
<td></td>
</tr>
<tr>
<td>GAME 231</td>
<td>Computer Animation for Games</td>
<td></td>
</tr>
<tr>
<td>GAME 232</td>
<td>Online and Mobile Gaming</td>
<td></td>
</tr>
<tr>
<td>GAME 250</td>
<td>Music for Film and Video</td>
<td></td>
</tr>
<tr>
<td>GAME 310</td>
<td>Game Design Studio</td>
<td></td>
</tr>
<tr>
<td>GAME 330</td>
<td>Computer Game Platform Analysis</td>
<td></td>
</tr>
<tr>
<td>SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td></td>
</tr>
<tr>
<td>SPMT 320</td>
<td>Psychology of Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 405</td>
<td>Sport Venues and Events</td>
<td></td>
</tr>
<tr>
<td>SPMT 412</td>
<td>Sport Marketing and Sales</td>
<td></td>
</tr>
<tr>
<td>SPMT 420</td>
<td>Economics and Finance in the Sport Industry</td>
<td></td>
</tr>
<tr>
<td>SPMT 455</td>
<td>Governance and Policy in Sport Organizations</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

Sport and Conflict Resolution Minor (CEHD)

Banner Code: SCNR

Phone: 703-993-4165
Email: ugradcar@gmu.edu
Website: rht.gmu.edu/minor/scnr

There has been a real growth in the establishment of non-profit organizations that use ‘sport for development’, sport to bring diverse communities together and also ‘sport for peace’ organizations in high conflict areas of the world. This minor will help prepare students to work for organizations dedicated to using sports for development, community building and peace. It provides students with a cross section of courses in sports management and conflict resolution. Courses in sports management frame the sports industry in a philosophical, ethical, cultural and business context. Conflict resolution courses will introduce students to foundational concepts in the study of human conflict, the analysis of conflict and problem solving techniques for helping to resolve conflict.

This is an interdisciplinary minor offered by the School for Conflict Analysis and Resolution (p. 936) and the School of Recreation, Health, and Tourism. (p. 221)
Admissions & Policies

Admissions
This minor is available to all Mason undergraduate students.

Policies
Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 87).

Requirements

Minor Requirements
Total credits: 18

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 302</td>
<td>Philosophical and Ethical Dimensions of Sport</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td>3</td>
</tr>
<tr>
<td>CONF 101</td>
<td>Conflict and Our World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Elective Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CONF 302</td>
<td>Culture, Identity, and Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 435</td>
<td>Building Peace in Divided Societies</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Sport and Recreation Studies, MS
Banner Code: E1-MS-SRST

Academic Advising
Phone: 703-993-2060
Email: gradrht@gmu.edu
Website: rht.gmu.edu/sport-recreation-studies/degree-options/

With concentrations in recreation administration, sport and leisure studies, sport management, and individualized study in sport, recreation, and tourism, the MS in Sport and Recreation Studies meets the growing need for professionals and academics. This degree prepares students as professionals who will more adequately serve the industry and their communities, and students who wish to pursue advanced study through doctoral programs in these disciplinary areas, leading to employment (and contributions) in academe. This program offers the traditional research masters’ thesis option and the option of an applied research project linked to a professional setting or internship.

The Sport Management Graduate Certificate (p. 237) with concentrations in Sport Coaching and International Sport Management may be taken in conjunction with the MS SRST degree or as standalone options.

Admissions & Policies

Admissions
Application Requirements
In addition to fulfilling admission requirements for graduate study as specified in Graduate Admissions (p. 68), applicants must have successfully completed an undergraduate course in statistics.

Policies
For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Requirements

Degree Requirements
Total credits: 30

MS Core Coursework
Students are required to take a set of four courses that will provide grounding in historical and socio-cultural foundations, research methods and statistics, ethical and legal issues, and leadership perspectives. In addition, all students will complete a seminar, and either a capstone thesis or project/internship specific to their concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRST 606</td>
<td>Foundations of Sport and Recreation Studies</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 613</td>
<td>Strategic Leadership in Sport Organizations</td>
<td>3</td>
</tr>
<tr>
<td>or PRLS 613</td>
<td>Strategic Leadership in Recreation Administration</td>
<td></td>
</tr>
<tr>
<td>SPMT 614</td>
<td>Legal Issues in Sport</td>
<td>3</td>
</tr>
<tr>
<td>or PRLS 501</td>
<td>Introduction to Natural Resources Law</td>
<td></td>
</tr>
<tr>
<td>SRST 623</td>
<td>Research Design and Statistical Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>SRST 796</td>
<td>Seminar in Sport and Recreation Studies</td>
<td>1</td>
</tr>
<tr>
<td>Select 5 credits from the following:</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>SRST 798</td>
<td>Master’s Project/Internship</td>
<td></td>
</tr>
<tr>
<td>SRST 595</td>
<td>Thesis Preparation and Master’s Thesis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

Concentration in Recreation Administration (RADM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRLS 610</td>
<td>Recreation Administration and Planning</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 611</td>
<td>Social Psychology of Leisure</td>
<td>3</td>
</tr>
<tr>
<td>Select 6 credits from the following:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>PRLS 531</td>
<td>Natural Resources Recreation Planning</td>
<td></td>
</tr>
<tr>
<td>PRLS 533</td>
<td>Visitor Services</td>
<td></td>
</tr>
<tr>
<td>PRLS 601</td>
<td>History of Leisure and Sport in American Society</td>
<td></td>
</tr>
</tbody>
</table>
Concentration in Individualized Study in Sport, Recreation, and Tourism (ISRT)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With advisor approval, select four 3-credit courses within the university catalog that form an integrated program of study.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

Additional courses may be selected as electives with advisor approval

Accelerated Master’s

Bachelor’s Degree (any)/Sport and Recreation Studies, Accelerated MS

Overview

Qualified Mason undergraduates may be admitted to a bachelor’s/accelerated master’s program and obtain a BA or BS in any degree area and a Sport and Recreation Studies, MS. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this option.

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). Additionally, applicants must have an overall GPA of at least 3.00. See the Accelerated Master’s Admissions (https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters) webpage to apply.

Accelerated Option Requirements

During their senior year, students complete three to six graduate credits in consultation with the academic program coordinator that apply to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the master’s. A minimum grade of B must be earned to be eligible to count as advanced standing. While still in undergraduate status, students may take up to six graduate credits that are reserve graduate credit and therefore, are applicable to the master’s but do not count toward the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which courses are to be designated as advanced standing and reserve graduate credit.

Sports Analytics Minor (CEHD)

Banner Code: SPTA

Academic Advising

Phone: 703-993-5200
Email: srht@gmu.edu
Website: rht.gmu.edu/minor/spta

This minor provides students with a foundational understanding of the sports industry coupled with the study of how data can be used in the world of sports to enable teams, leagues, and other sports businesses to acquire an advantage over their competitors. With the successful completion of this minor, students should be able to use various statistical models and other analytic tools to help sports organizations improve performance in some of the following areas: season ticket sales,
luxury box sales, marketing, talent identification, scouting of opponents, the prediction of industry trends, and customer service.

This minor is offered jointly with the School of Business (p. 888), College of Science (p. 613), and Volgenau School of Engineering (p. 1011).

Admissions & Policies

Admissions
This minor is available to all Mason undergraduate students.

Policies
Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 425</td>
<td>Sport Analytics</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following groups:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>BUS 210</td>
<td>Business Analytics I</td>
<td></td>
</tr>
<tr>
<td>&amp; BUS 310</td>
<td>and Business Analytics II</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>&amp; STAT 350</td>
<td>(p. 142) and Introductory Statistics II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

Electives
Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>CDS 292</td>
<td>Introduction to Social Network Analysis (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SRST 450</td>
<td>Research Methods</td>
<td></td>
</tr>
<tr>
<td>SYST 473</td>
<td>Decision and Risk Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Degree Requirements
Total credits: 120

This is a Green Leaf program.

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (p. 142)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Information Technology (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TOUR 311</td>
<td>Women and Tourism (Mason Core) (p. 142) (recommended course)</td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TOUR 210</td>
<td>Global Understanding through Travel and Tourism (Mason Core) (p. 142) (recommended course)</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Synthesis/Capstone 2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 37

1 May not be used to satisfy both degree and Mason Core requirements.

2 Fulfilled by TOUR 490 Hospitality, Tourism, and Events Management Internship (Mason Core) (p. 142), listed in professional sequence requirements.
### Professional Sequence

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOUR 110</td>
<td>Professionalism and Civility</td>
<td>1</td>
</tr>
<tr>
<td>TOUR 200</td>
<td>Introduction to Tourism Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 214</td>
<td>Hospitality Tourism and Events Management Accounting</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 220</td>
<td>Introduction to Event Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 230</td>
<td>Introduction to Hospitality Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 241</td>
<td>Hospitality, Tourism, and Events Management Practicum</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 320</td>
<td>Hospitality, Tourism and Event Management Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 340</td>
<td>Sustainable Tourism</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 412</td>
<td>Hospitality, Tourism, and Events Management Marketing and Sales</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 414</td>
<td>Hospitality, Tourism, and Events Management Finance</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 470</td>
<td>Career Preparation</td>
<td>1</td>
</tr>
<tr>
<td>TOUR 490</td>
<td>Hospitality, Tourism, and Events Management Internship (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>SRST 450</td>
<td>Research Methods (Satisfies the university Writing Intensive requirement)</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 410</td>
<td>Administration of SRT Organizations I</td>
<td>3</td>
</tr>
<tr>
<td>PRLS 460</td>
<td>Sport and Recreation Law</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>50</strong></td>
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</tbody>
</table>

### Concentration in Tourism Management (TRSM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO 430</td>
<td>Destination Marketing and Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 410</td>
<td>Tourism Economics</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 420</td>
<td>Tourism Planning/Policy</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 352</td>
<td>Heritage and Cultural Tourism</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Niche Tourism

- Select one of the following: 3
  - TOUR 341 Film and Medical Tourism
  - TOUR 342 Sacred Spaces and Dark Tourism
  - TOUR 343 Wine and Food Tourism

#### Tourism Concentration Electives

- Select nine credits of any TOUR courses (p. 2275) 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

1. May not be used to satisfy both degree and Mason Core (p. 142) requirements.

### Electives

- Select an additional 9 credits. (p. 1196) 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

### Concentration in Events Management (EVNM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOUR 190</td>
<td>Wedding Planning</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 221</td>
<td>Event Implementation and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 310</td>
<td>Food and Beverage Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 313</td>
<td>Event Technical Production</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 440</td>
<td>Meetings and Conventions</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Events Management Concentration Electives

- Select nine credits of any TOUR courses (p. 2275) 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

### Concentration in Hospitality Management (HPTM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOUR 301</td>
<td>Hotel Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 310</td>
<td>Food and Beverage Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 330</td>
<td>Resort Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 450</td>
<td>Hospitality Human Resources Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 460</td>
<td>Hospitality Facilities Operations</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Hospitality Concentration Electives

- Select nine credits of any TOUR courses (p. 2275) 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

### Tourism and Events Management Minor

- Banner Code: TEM

#### Admissions & Policies

**Admissions**

This minor is available to all Mason undergraduate students, with the exception of those enrolled in the Tourism and Events Management, BS (p. 242).

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see the Undergraduate Policies (p. 87) section of this catalog.

### Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total credits:</strong></td>
<td></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>
## Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOUR 200</td>
<td>Introduction to Tourism Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 220</td>
<td>Introduction to Event Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 340</td>
<td>Sustainable Tourism</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

## Electives

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOUR 190</td>
<td>Wedding Planning</td>
<td>6</td>
</tr>
<tr>
<td>TOUR 210</td>
<td>Global Understanding through Travel and Tourism (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>TOUR 221</td>
<td>Event Implementation and Evaluation</td>
<td>6</td>
</tr>
<tr>
<td>TOUR 230</td>
<td>Introduction to Hospitality Management</td>
<td>6</td>
</tr>
<tr>
<td>TOUR 311</td>
<td>Women and Tourism (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>TOUR 313</td>
<td>Event Technical Production</td>
<td>6</td>
</tr>
<tr>
<td>TOUR 330</td>
<td>Resort Management</td>
<td>6</td>
</tr>
<tr>
<td>TOUR 352</td>
<td>Heritage and Cultural Tourism</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

CHHS offers regular information sessions to prospective students. For dates and times, or to register for a session, visit the information sessions website (https://chhs.gmu.edu/admissions/prospective-student-information-sessions) or call the CHHS Office of Student Affairs at 703-993-1901.

## Academic Programs

CHHS is committed to educating the next generation of health professionals, researchers, and educators. Our School of Nursing (p. 289) produces more new RNs each year than any other program in Virginia, and these graduates have one of the state’s highest pass rates on the nursing licensure exam. Through the PhD program in nursing, the college is helping to fill the need for nursing faculty and researchers, and through the DNP program, provides an opportunity for nurses to become experts as nurse practitioners, nurse administrators, or nurse educators. The Department of Health Administration and Policy (p. 257) prepares students for careers as leaders of health care organizations and as health policymakers at the state and national levels, while the Department of Global and Community Health (p. 246) trains public health practitioners with a global reach, who can intervene and improve the health of local and international populations. The Department of Rehabilitation Science (p. 274) provides interdisciplinary programs to educate students to address the needs of the disabled. Graduates of the PhD program in rehabilitation science are prepared for careers in academic, governmental, and industrial research environments. The Department of Nutrition and Food Studies (p. 270) integrates education, research, and outreach in preparing students to improve the health and well-being of populations through food and nutrition. The Department of Social Work (p. 279) educates undergraduate and graduate students to be professional social workers practicing in either community organizations or clinical settings. The CHHS academic units offer a variety of specializations within degree programs, including gerontology, epidemiology and biostatistics, health informatics, clinical social work, and conflict analysis and resolution.

## Administration

### College of Health and Human Services

1000 Peterson Hall  
Fairfax Campus  
MSN: 6C4  
Phone: 703-993-1901  
Website: chhs.gmu.edu

### Faculty

**College Faculty**

**Professors**


**Associate Professors**

Anand, Cantiello, Cleaveland, Davis, Delany, Douglas, Eckenwiler, Frankenfeld, Gewa, Gim, Goldberg, Gupta, Ihara, Keyser, Kirsch, Lee, Lindley, Mallinson, Matto, Min, Oh, Pollack, Poms, Rodan, Slavin, C. Sutter, R. Sutter, Tompkins, Urban, Weinstein, Wojtusiak

**Assistant Professors**


**Instructors**

Brown-Rolle, K. Chang, Cuffee, Davidson, Fine, Goodknight, Henderson, Lee, Prudden
Administrative Faculty
Beckwith, Cornelio, Dugger, Fersizidis, Gaston, Gillette, Helmick, Holmes, Johnson, Joyner, Park, Perez-Brodeur, Sawyer, Stokes, Thompson, Walsh, Westberg

Faculty Emeriti
Ailinger, Baghi, Boland, Boyd, Brenkus, Carty, Chong, Jenkins, Langley, Moore, Moss, Normile, Parker-Smith, Raskin, Redmond, Silva, Sluzki, Sorrell, Vail, Walker, Whittington, Wu

Requirements & Policies

Policies
Professional Conduct Policy
All CHHS students are expected to conduct themselves professionally at all times. This means that certain behavior is prohibited, including verbal abuse, insubordination, and behavior that threatens the safety of a client, another student, a faculty member, or other health care provider when the behavior occurs within the context of an academic program. CHHS reserves the right to place on probation, suspend, or terminate any student in its programs who engages in such conduct. Students disciplined for such reasons have the right to appeal to their department chair or director.

Student Affairs
The Office of Student Affairs supports students, faculty, and staff members on a variety of admissions, academic, and policy issues. Student Affairs is involved in pre-admissions advising; processing applications for graduate programs and undergraduate nursing programs; conducting orientations for newly admitted students.

Student Affairs maintains the college’s student records; reviews and recommends action on student requests for exceptions to academic policy; processes standard academic actions; and approves student records for degree completion prior to graduation. Student grade appeals fall under university policy as described in AP.3.9 Grade Appeals (p. 85).

Each CHHS student is assigned an academic advisor, with whom he or she should meet at least once per semester in order to ensure that program requirements are met. The assigned advisor may be a faculty member, a departmental program coordinator, or an advisor in the Office of Student Affairs.

Student Responsibility
All students are required to have an active Mason e-mail account (https://its.gmu.edu/service/masonlive-email-for-students) and to update any change of address on-line through Patriot Web (https://patriotweb.gmu.edu). The college will not communicate with students via a personal e-mail address, so it is important that students check their Mason e-mail regularly. Students are responsible for knowing the university academic policies and the policies governing their program as stated in the university catalog. They are also responsible to know the semester academic calendar including withdrawal deadlines; to review their Mason transcript on-line to ensure transfer of credit accuracy; and to monitor their degree progression through the degree evaluation tool on Patriot Web (https://patriotweb.gmu.edu).

Background Checks
Many clinical agencies and practicum sites mandate that students working there have a criminal background check. All students enrolled in the School of Nursing are required to complete a criminal background check prior to beginning the program. Students enrolled in other CHHS programs may be required to complete background checks before entering a practicum environment. Information obtained from the background check is strictly confidential but may result in a student’s inability to perform clinical or practicum activities and, therefore, will disqualify the student from entering or continuing in the program. School of Nursing students are sent information regarding the criminal background check process, and associated fees, upon admission. Other students are informed individually as they are considered for practicum activities requiring background checks. Students are responsible for notifying the assistant dean of student affairs of any arrests, regardless of adjudication, that occur after acceptance and during enrollment in the program. Failure to promptly notify the assistant dean of student affairs may be grounds for termination from the program.

Health Records
To comply with the policies established by the Commonwealth of Virginia, all students must provide current immunization records to the university’s Student Health Services at the time of admission to the college. Immunizations may be obtained through Student Health Services (http://shs.gmu.edu) on any of the Mason campuses. All students in the School of Nursing also must submit immunization records to the School of Nursing at the time of admission. Additional documentation of good health may be required.

Students should keep copies of their health records should agencies require them for clinical and practicum assignments. All costs associated with immunizations and certifications are the student’s responsibility.

Insurance and Liability
Students are strongly advised to maintain health insurance coverage at all times. All students enrolled in the School of Nursing are required to maintain health insurance at all times. A student health insurance plan (http://shs.gmu.edu/insurance) is available to eligible students through Mason. Students are responsible for their own health care, including emergency care, and CHHS assumes no financial responsibility for the health care of students. Enrolled students who are performing internships and similar experiential learning as a required part of their academic programs are considered agents of the university. They are covered for professional liability by the Commonwealth of Virginia Risk Management Plan (http://risk.gmu.edu) while engaged in their prescribed educational duties.

Academic Outreach
The mission of the Office of Academic Outreach is to provide off-campus graduate coursework that supports the continued professional development and competency of practicing health professionals. This purpose is accomplished through collaborative relationships with expert health and instructional resources—individual and organizational—both internal and external to the University.

Academic Policies
Students should become familiar with the university’s general academic policies in addition to those specific to each academic unit. See Academic Policies (p. 77).
Graduate Admission

Admission decisions are made by the faculty committee on admissions of the respective graduate programs. Denial of admission is not subject to appeal. Applicants denied admission to a program are not permitted to enroll in courses in that program through Non-Degree Studies.

If an applicant is offered graduate admission, the college reserves the right to withdraw that offer of admission or to terminate a student in a graduate program if:

- During his or her academic studies, the admitted applicant has a significant drop in academic performance or fails to graduate with a degree prior to the first day of classes for the term admitted.
- There has been a misrepresentation in the application process.
- Prior to the first day of classes for the term admitted, the college learns that the admitted applicant has engaged in behavior that indicates a serious lack of judgment or integrity, irrespective of the outcome of any disciplinary process related to such behavior.

The university further reserves the right to require the applicant to provide additional information (and/or authorization for the release of information) about any such matter.

Non-Degree Enrollment

Non-degree status enables students who have no immediate degree objective or may need to satisfy prerequisites for admission to a degree program to enroll in courses for which they are qualified without seeking formal admission to a degree program. Applicants should be aware of the fact that non-degree admission does not guarantee enrollment in any specific course or future degree program. Enrollment in specific courses is based on eligibility criteria and availability of space in courses. In some areas of study, enrollment may be restricted or prohibited.

Non-degree applications and their established deadlines are available online through the Office of Admission (https://www2.gmu.edu/admissions-aid). Detailed information regarding non-degree admission policies and procedures can be found in Non-Degree Enrollment (p. 74).

The Department of Global and Community Health, the Department of Health Administration and Policy, the Department of Nutrition and Food Studies, and the Department of Social Work welcome non-degree students in their classes on a space-available basis. Programs in the College of Health and Human Services which have course restrictions are listed below.

Graduate Non-Degree Restrictions

All Graduate Programs

Students may take a maximum of 9 credit hours in non-degree studies. A student cannot graduate or receive a degree while in non-degree studies. Non-degree graduate students may not register for classes numbered 800 or higher.

Nursing, MSN

A student may be eligible to enroll in approved non-degree MSN courses when space is available if the student:

- Has not applied for the MSN program and has not been previously denied admission to the MSN program;
- Holds a BSN from an accredited college and achieved a cumulative degree GPA of 3.00;
- Holds a current RN license.

MSN non-degree students may not take classes numbered 800 or higher. In addition, they may take a maximum of 9 credit hours in non-degree studies.

Undergraduate Non-Degree Restrictions

Nursing, BSN

Students must be admitted into the BSN program in order to register for undergraduate nursing (NURS) courses.

Academic Units

- Department of Global and Community Health
- Department of Health Administration and Policy
- Department of Nutrition and Food Studies
- Department of Rehabilitation Science
- Department of Social Work
- School of Nursing

Department of Global and Community Health

Phone: 703-993-3126
Website: publichealth.gmu.edu

Administration

- Lawrence Cheskin, Interim Chair

The Department of Global and Community Health (GCH) brings together faculty and students from the disciplines of biostatistics, epidemiology, environmental health, and the behavioral and social sciences. The educational mission of GCH is to provide high-quality undergraduate and graduate degrees and certificates in the core disciplines of community, global, and public health that prepare students to enter the domestic and global public health workforce. The research mission of GCH is to conduct innovative research that addresses pressing and emerging domestic and global health problems and security threats. Establishing partnerships that promote and protect health and well-being, especially among underserved and disadvantaged populations, is the principal focus of our service mission.

Faculty

Department Faculty

Professors

Higgins, Howell, Jacobsen, Louis (dean), Metcalf, Weiler (associate dean for academic affairs)

Associate Professors

Frankenfeld, Gupta, Lee, Lindley, Pollack, Poms, Weinstein (Center for the Study of Chronic Illness and Disability, director)

Assistant Professors

Fleming, Krall, Rossheim, von Fricken, Winter
Administrative Faculty
Beckwith (master of public health program coordinator), Gillette (undergraduate advisor), Helmick (instructional designer)

Emeriti
Baghi, Sluzki

Requirements & Policies

Requirements
Academic Advising
Each student is assigned an academic advisor who is a faculty member within their academic department or a professional academic advisor within the Office of Student Affairs (OSA). Academic advisor assignments are listed on the CHHS website (http://chhs.gmu.edu/students/academic-advising), and students are expected to meet with their advisor regularly (at least once each semester) to seek advice about academic schedules and program plans. Students also should meet with their advisor if they are experiencing academic difficulty.

Student Responsibilities
All students are responsible for knowing the requirements of their major as specified in the university catalog for their catalog year; academic deadlines outlined in the semester academic calendar (http://registrar.gmu.edu/calendars); and university policies and procedures as stated in the catalog.

Students also should run their own degree-evaluation (http://registrar.gmu.edu/students/degree-evaluation) to identify graduation requirements and progress towards their degree. While academic advisors can give advice to students, students are responsible for the academic planning decisions they make. Academic advisors cannot be held responsible for mistakes made by students in selecting courses that may not count toward their degree and thus delay a desired graduation date.

Programs

- Community Health, BS
- Global Health Minor
- Global Health, MS
- Public Health Graduate Certificate
- Public Health Minor
- Public Health, MPH

Community Health, BS
Banner Code: HH-BS-COMH

Academic Advising
Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/global-and-community-health-advisors

Community health, global, and public health are the fastest growing, most exciting, and versatile areas of study on college campuses across the United States today. Community health is the applied science of protecting and improving the health and well-being of individuals, families, populations, and communities using evidence-based health promotion and disease prevention programs and policies. Accredited by the Council on Education for Public Health (CEPH), the BS in Community Health prepares students with the knowledge and understanding of community and public health systems, issues and policies related to health promotion, and health education and disease prevention in populations of all sizes. Community, public, and global health specialists work with a variety of health-related organizations and are expected to confront complex behavioral, cultural and social health and well-being issues at the local, national and global levels.

Community health students develop the competencies and skills necessary for entry-level positions in a variety of professional settings such as local, state, and federal health and social service agencies and non-governmental and voluntary health organizations, health care, and private industry. This program is unique in that it provides a solid foundation for students interested in pursuing graduate degrees in public health or advanced training in a health profession (see the Clinical Science concentration). Students completing this degree are eligible for and strongly encouraged to take the Certified Health Education Specialist (CHES) exam.

Optional Concentrations
Students may wish to complete an optional concentration in Global Health or Clinical Science.

Global Health Concentration
The Global Health concentration focuses on understanding diseases and other health security threats reflecting the new global landscape, such as tobacco use and obesity, and emerging pandemics such as avian influenza, Ebola, and the Zika virus. Students complete the required coursework for the BS in Community Health and specialized coursework in global health in addition to interdisciplinary coursework. This concentration is designed for students interested in public health at the global level and is particularly focused on improving health conditions in less developed countries.

Clinical Science Concentration
The Clinical Science concentration prepares students for post-graduate clinical training in a health profession field such as medicine, dentistry, nursing, optometry, occupational and physical therapy, and pharmacy. This concentration provides students the flexibility to design their curriculum to satisfy prerequisites for these programs. Students choosing this option are encouraged to check coursework requirements for their desired health profession because such requirements vary.

Admissions & Policies

Policies
- For all policies governing bachelor’s degrees, see A.5.3.2 Requirements for Bachelor’s Degrees (p. 89).
- A criminal background check and proof of vaccination status may be required of students prior to beginning the internship if required by the internship organization.
- A minimum grade of C must be earned in all major courses.
- Students must check with their advisor to ensure that all requirements have been met prior to graduation and should assess their own degree evaluation in Patriot Web each semester.
Requirements

Degree Requirements

Total credits: 120

Students must fulfill all requirements for bachelor's degrees, including the Mason Core (p. 142) requirements.

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142) (social science section recommended)</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Quantitative Reasoning course (p. 143)</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td>Information Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Information Technology course (p. 143)</td>
<td>3-7</td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Literature course (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Arts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Arts course (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Mason Core non-lab science course (p. 148)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Any Mason Core lab science course (p. 148)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Western Civilization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST 100</td>
<td>History of Western Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 101</td>
<td>Foundations of Western Civilization</td>
<td></td>
</tr>
<tr>
<td>Global Understanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCH 205</td>
<td>Global Health (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Social and Behavioral Sciences course (p. 150)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>30-42</td>
</tr>
</tbody>
</table>

1 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 for ENGH 101. Students must attain a minimum grade of C in ENGH 100 or ENGH 101, as well as in ENGH 302, to fulfill degree requirements.

2 Only for students who choose either the Global Health concentration or no concentration. Students in the Clinical Science concentration complete the Mason Core Natural Science requirement within their concentration courses.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology and Human Anatomy and Physiology</td>
<td></td>
</tr>
</tbody>
</table>

Community Health Major Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 300</td>
<td>Introduction to Public Health</td>
<td>3</td>
</tr>
<tr>
<td>GCH 310</td>
<td>Health Behavior Theories</td>
<td>3</td>
</tr>
<tr>
<td>GCH 332</td>
<td>Health and Disease</td>
<td>3</td>
</tr>
<tr>
<td>GCH 335</td>
<td>Applied Health Statistics</td>
<td>3</td>
</tr>
<tr>
<td>GCH 350</td>
<td>Health Promotion and Education</td>
<td>3</td>
</tr>
<tr>
<td>GCH 360</td>
<td>Health and Environment</td>
<td>3</td>
</tr>
<tr>
<td>GCH 376</td>
<td>Health Ethics, Leadership, and Advocacy</td>
<td>3</td>
</tr>
<tr>
<td>GCH 380</td>
<td>Public Health Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>GCH 411</td>
<td>Health Program Planning and Evaluation (fulfills writing intensive requirement)</td>
<td>3</td>
</tr>
<tr>
<td>GCH 412</td>
<td>Fundamentals of Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>GCH 465</td>
<td>Community Health Capstone (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GCH 445</td>
<td>Social Determinants of Health</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

Completing the Degree without a Concentration

Students completing the BS without a concentration follow the coursework outlined below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Courses</td>
<td>Select nine credits of 300- or 400-level courses from the following</td>
<td>9</td>
</tr>
<tr>
<td>GCH (p. 1762)</td>
<td>GCH (p. 1762)</td>
<td>3</td>
</tr>
<tr>
<td>HAP (p. 1796)</td>
<td>HAP (p. 1796)</td>
<td>3</td>
</tr>
<tr>
<td>HEAL (p. 1794)</td>
<td>HEAL (p. 1794)</td>
<td>3</td>
</tr>
<tr>
<td>NUTR (p. 2014)</td>
<td>NUTR (p. 2014)</td>
<td>3</td>
</tr>
<tr>
<td>RHBS (p. 2137)</td>
<td>RHBS (p. 2137)</td>
<td>3</td>
</tr>
<tr>
<td>General Electives</td>
<td>Select 30 credits of General Electives</td>
<td>30</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>39</td>
</tr>
</tbody>
</table>

Global Health Concentration (GLOH)

The optional global health concentration enables students to look at public health issues through a global lens and increases understanding of the differences in health, well-being, disease, and interventions that exist within an international context.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or GGS 340</td>
<td>Health Geography</td>
<td></td>
</tr>
<tr>
<td>GLOA 101</td>
<td>Introduction to Global Affairs (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 8
Clinical Science Concentration (CLNS)

The optional clinical science concentration prepares students to apply for graduate programs in fields such as medicine, physical therapy, occupational therapy, dentistry, pharmacy, and optometry. This concentration does not guarantee entrance into a graduate health professional program. It is important to note that, depending on the type of graduate program in which a student is interested, additional coursework may be required. It is the student’s responsibility to determine the essential criteria for admission to their target schools in consultation with the health professions advising office.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 246</td>
<td>Introductory Microbiology and Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOL 305</td>
<td>Biology of Microorganisms and Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 483</td>
<td>General Biochemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I and Organic Chemistry Lab I</td>
<td></td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II and Organic Chemistry Lab II</td>
<td></td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142) and College Physics I Lab (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 245</td>
<td>College Physics II (Mason Core) (p. 142) and College Physics II Lab (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Global Health Minor

Banner Code: GLOH

Academic Advising

Website: chhs.gmu.edu/students/academic-advising/undergraduate-advising/global-and-community-health-advisors

The global health minor requires 18 credits of coursework and is designed to increase students’ awareness of the major health problems and issues that transcend national boundaries. Students develop an understanding of the critical global health concerns that affect health equity and health care for all people worldwide. Students examine the public health implications of globalization and learn to think critically about how specific global health challenges may be solved in culturally appropriate ways. The minor will enhance the education of students who are planning to work in a variety of settings with a global health focus, including health care, government, education, and non-governmental organizations.

Admissions & Policies

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Total credits: 18

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 205</td>
<td>Global Health (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GCH 332</td>
<td>Health and Disease</td>
<td>3</td>
</tr>
<tr>
<td>GCH 405</td>
<td>Global Health Interventions: History and Systems</td>
<td>3</td>
</tr>
<tr>
<td>GCH 406</td>
<td>Global Health Interventions: Emerging Issues</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one from: ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 426</td>
<td>Global Emerging Infectious Diseases</td>
</tr>
<tr>
<td>or GCH 450</td>
<td>Culture, Sexuality and the Global AIDS Epidemic</td>
</tr>
</tbody>
</table>

Total Credits 15

¹ GCH 426 is offered only in the fall. GCH 450 is offered only in the spring.
Global Health, MS

Banner Code: HH-MS-GLOH
Email: gch@gmu.edu
Website: https://publichealth.gmu.edu/

Graduates of this program will have the knowledge base and skills to work and conduct research within the global health environment. This degree incorporates epidemiology, biostatistics, sociocultural influences on health and behavior, global health systems, communicable and non-communicable diseases of global importance, and migrant health to prepare students to conduct global health-related research. Through coursework and thesis research, students will be prepared to work in the diverse cultural and multidisciplinary environments inherent in global health. Graduates will be prepared to work in international health organizations such as nongovernmental organizations (NGOs), governmental organizations, and multilateral organizations, or may choose to pursue a research pathway and continue toward a terminal degree.

Admissions & Policies

Admissions

Requirements
Admission to the program is competitive, and a variety of criteria are evaluated in the admission process, including:

- GRE scores
- undergraduate academic performance
- recent post-baccalaureate coursework
- work experience
- professional goals
- recommendations

Previous undergraduate coursework in statistics, anthropology, sociology, and natural sciences is helpful. Applicants must meet the admission standards and application requirements specified in the Admissions (p. 68) section of the catalog and apply using the online Schools of Public Health Application System (http://www.sophas.org) (SOPHAS). Applications are considered for the fall semester only. For application deadlines and detailed application requirements, please refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

Policies

Transfer of Credit
Transfer credit is governed by the AP.6.5.3 Graduate Transfer of Credit (p. 92) policy and the AP.6.9 Requirements for Master’s Degrees (p. 94) policy, and transfer credit must be approved by the program director and the dean. Students who enroll initially through non-degree studies should seek academic advising through the department prior to taking a course and plan to submit their application to the MS program in their first semester of study.

Requirements

Degree Requirements
Total credits: 42
A graduate course in which a grade of C or below is earned may be repeated only once. Graduate students may repeat no more than two courses. Students must achieve a 3.00 GPA to graduate from the master’s program.

Global Health Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 500</td>
<td>Foundations of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>GCH 543</td>
<td>Global Health</td>
<td>3</td>
</tr>
<tr>
<td>GCH 626</td>
<td>Migrant Health</td>
<td>3</td>
</tr>
<tr>
<td>GCH 640</td>
<td>Global Infectious Diseases</td>
<td>3</td>
</tr>
<tr>
<td>GCH 645</td>
<td>U.S. and Global Public Health Systems</td>
<td>3</td>
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<tr>
<td>GCH 650</td>
<td>Global Non-Communicable Diseases</td>
<td>3</td>
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</table>

Total Credits: 18

Research Core

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>GCH 604</td>
<td>Fundamentals of Epidemiology and Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>GCH 651</td>
<td>Behavioral Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>GCH 804</td>
<td>Biostatistics for Public Health I</td>
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</tr>
<tr>
<td>GCH 805</td>
<td>Biostatistics for Public Health II</td>
<td>3</td>
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</table>

Total Credits: 12

Thesis

Students must take six credits of Thesis Research

<table>
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<th>Credits</th>
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<tbody>
<tr>
<td>GCH 799</td>
<td>Thesis Research</td>
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Total Credits: 6

Electives

In consultation with advisor, select 6 credits from the following list:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ANTH 687</td>
<td>Medical Anthropology</td>
</tr>
<tr>
<td>BIOD 620</td>
<td>Global Health Security Policy</td>
</tr>
<tr>
<td>COMM 705</td>
<td>Intercultural Health and Risk Communication</td>
</tr>
<tr>
<td>EVPP 637</td>
<td>Human Dimensions of Climate Change</td>
</tr>
</tbody>
</table>

Total Credits: 6
Public Health Minor

Banner Code: PUBH

Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/global-and-community-health-advisors

This minor offers students the opportunity to study concepts and principles related to disease prevention, health promotion, and injury control. The minor provides students with a basic understanding of each of the core areas of public health, introduces students to career opportunities in the fields of global and community health, and prepares students for admission to graduate programs in public health.

Admissions & Policies

Policies

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18-19

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GCH 205</td>
<td>Global Health (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GCH 300</td>
<td>Introduction to Public Health</td>
<td>3</td>
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Total Credits 6

Public Health, MPH

Banner Code: HH-MPH-PUBH

Website: publichealth.gmu.edu

Accredited by the Council on Education for Public Health (CEPH), the 42 credit-hour Master of Public Health (MPH) degree program is designed to prepare students with the foundational public health knowledge and competencies to address the most pressing and emerging health problems and concerns nationally and globally. Graduates are prepared to work in a variety of employment sectors including local, state, and federal health and social service agencies, non-governmental and voluntary health organizations, health care, and private industry. Students may choose from seven highly specialized concentrations:

- Community Health Promotion
- Epidemiology
- Food Security and Nutrition
- Global Health
- Health Policy
- Public Health Communication
- Public Health Practice (offered 100% online only)

In accordance with the CEPH accreditation standards, students are required to complete coursework in the public health core and one concentration, as well as fieldwork for the applied practice experience.

Admissions

Admission decisions are based on a review of:

- applicant's undergraduate academic performance and recent post-baccalaureate coursework (transcripts);
- GRE scores;
- professional and volunteer experience;
- written statement of professional goals; and
- letters of recommendation.

Some background in statistics, biology, and the social sciences is preferred. Applicants must meet the admission standards and application requirements specified in Admissions (p. 68). Applications must be submitted using the online Schools of Public Health Application System (http://www.sophas.org) (SOPHAS). Applications are considered for the fall semester only. For more information about application requirements and deadlines, please visit the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

**Food Security and Nutrition Concentration**

To be admitted to the Food Security and Nutrition Concentration, students must have taken NUTR 295 Introduction to Nutrition (Mason Core) (p. 142) or a substitute approved by the Department of Nutrition and Food Studies.

**Public Health Practice Concentration**

To be admitted to the Public Health Practice Concentration, students must have at least two years’ work experience in a health-related field.

**Policies**

**Transfer of Credit**

Transfer credit is governed by the policies outlined in AP.6.5.3 Graduate Transfer Credit (p. 92) and AP.6.9 Requirements for Master’s Degrees (p. 94), and transfer credit must be approved by the program director and the dean. Students who enroll initially through non-degree studies should seek academic advising through the department before taking a course and should plan to submit their application to the MPH program in their first semester of study.

**Degree Requirements**

**Total credits: 42**

Students must complete 42 credits of graduate coursework with at least a 3.00 GPA in order to graduate. Each course listed below can be used to fulfill only one requirement toward the MPH degree. A graduate course in which a grade of C or below is earned may be repeated only once. Graduate students may repeat no more than two courses.

**Public Health Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 500</td>
<td>Foundations of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>GCH 604</td>
<td>Fundamentals of Epidemiology and Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>GCH 609</td>
<td>Community Assessment and Partnerships</td>
<td>3</td>
</tr>
<tr>
<td>GCH 611</td>
<td>Health Program Planning and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>GCH 645</td>
<td>U.S. and Global Public Health Systems</td>
<td>3</td>
</tr>
<tr>
<td>HAP 640</td>
<td>Current Issues in Health Policy</td>
<td>3</td>
</tr>
<tr>
<td>HAP 680</td>
<td>Applied Public Health Leadership and Management</td>
<td>3</td>
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</table>

**Practicum Requirements**

The required 200-hour practicum gives students the opportunity to apply and improve professional skills in a supervised practice setting and is completed in two parts. Students must have completed at least 21 credits toward the degree program in order to be eligible for their practicum. The first part is completed while enrolled in GCH 780 Practicum Seminar. This zero-credit course is designed to provide students an opportunity to identify and arrange their practicum placements in a structured environment. In the subsequent term, students perform work as interns at their selected placement sites for 200 contact hours and make final presentations of their experiences to the faculty and fellow students.

**Concentration**

Students must complete one concentration.

**Concentration in Community Health Promotion (CMHP)**

The Community Health Promotion concentration prepares health promotion specialists to work in local, state, and federal public health agencies, non-governmental health organizations, the healthcare sector, and private industry. Students in this concentration examine the social, behavioral, and environmental determinants associated with the most pressing health problems, and design, implement, and evaluate appropriate health promotion programs and preventive services to improve population health. The curriculum and practical experiences for this concentration are aligned with the core competencies for the social and behavioral sciences (Association of Schools and Programs for Public Health [ASPPH]) and the Areas of Responsibilities and Competencies for Health Education Specialists (National Commission for Health Education Credentialing, Inc., 2015) and prepare students for the Certified Public Health (CEPH) examination and both the Certified Health Education Specialist (CHES) and the Master Certified Health Education Specialist (MCHES) examinations.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMM 620</td>
<td>Health Communication</td>
<td>3</td>
</tr>
<tr>
<td>GCH 601</td>
<td>Introduction to Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>GCH 610</td>
<td>Health Behavior Theory</td>
<td>3</td>
</tr>
<tr>
<td>GCH 651</td>
<td>Behavioral Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>GCH 772</td>
<td>Social Epidemiology</td>
<td>3</td>
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</table>

**Electives**

Select three credits from the following:

- BIOL 666 Human Genetics Concepts for Health Care
- COMM 637 Risk Communication
- COMM 639 Science Communication
- COMM 660 Climate Change and Sustainability Communication Campaigns
- COMM 721 E-Health Communication
- EVPP 506 Science of the Environment I
- EVPP 641 Environmental Science and Public Policy

Total Credits: 21
Concentration in Epidemiology (EPID)
The Epidemiology concentration prepares students to investigate and analyze factors that influence the occurrence, distribution, prevention, and control of disease. Emphasis is placed on the development of such skills as study design, data collection and management, data analysis and interpretation, and communication of research findings.

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>GCH 712</td>
<td>Introduction to Epidemiology</td>
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<tr>
<td>GCH 726</td>
<td>Advanced Methods in Epidemiology I</td>
<td>3</td>
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<tr>
<td>GCH 762</td>
<td>Environmental Epidemiology</td>
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<tr>
<td>or GCH 722</td>
<td>Infectious Disease Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>or GCH 732</td>
<td>Chronic Disease Epidemiology</td>
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</tr>
<tr>
<td>or GCH 772</td>
<td>Social Epidemiology</td>
<td></td>
</tr>
<tr>
<td>GCH 804</td>
<td>Biostatistics for Public Health I</td>
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<td>GCH 805</td>
<td>Biostatistics for Public Health II</td>
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Electives
Select three credits from the following: 3

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<tbody>
<tr>
<td>BIOL 574</td>
<td>Population Genetics</td>
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</tr>
<tr>
<td>CSS 600</td>
<td>Introduction to Computational Social Science</td>
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</tbody>
</table>

Concentration in Food Security and Nutrition (FSN)
The Food Security and Nutrition concentration is designed to provide public health students the knowledge and skills necessary to implement food security and nutrition programs and policies within a global public health context. Students will explore and apply the definitions, means of measurement, and policy implications of food security and nutrition through a multidisciplinary approach. This concentration emphasizes the role of food security and nutrition in public health at the local, regional, and global levels.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>NUTR 608</td>
<td>Perspectives on Food Security</td>
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<tr>
<td>NUTR 610</td>
<td>Food Safety and Defense</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 626</td>
<td>Food Systems</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 630</td>
<td>Global Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 651</td>
<td>Nutrition Assessment, Monitoring and Surveillance</td>
<td>3</td>
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Electives
Select three credits from the following: 3

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<td>GCH 601</td>
<td>Introduction to Biostatistics</td>
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<tr>
<td>GCH 626</td>
<td>Migrant Health</td>
<td></td>
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<tr>
<td>GCH 732</td>
<td>Chronic Disease Epidemiology</td>
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<tr>
<td>GCH 752</td>
<td>Nutritional Epidemiology</td>
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<tr>
<td>NUTR 515</td>
<td>Fundamentals of Cooking</td>
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<tr>
<td>NUTR 522</td>
<td>Nutrition Across the Lifespan</td>
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<tr>
<td>NUTR 530</td>
<td>Introduction to Wine and Beer</td>
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<tr>
<td>NUTR 535</td>
<td>Urban Agriculture</td>
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<tr>
<td>NUTR 570</td>
<td>Food Science for Nutritionists</td>
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<tr>
<td>NUTR 583</td>
<td>Food and Culture</td>
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<tr>
<td>NUTR 620</td>
<td>Nutrition Education</td>
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<tr>
<td>NUTR 642</td>
<td>Macronutrients</td>
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<tr>
<td>NUTR 644</td>
<td>Micronutrients</td>
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<tr>
<td>NUTR 670</td>
<td>Nutrition Research Methods</td>
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<tr>
<td>NUTR 675</td>
<td>Nutrition Program Development, Interventions and Assessments</td>
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</tbody>
</table>
Concentration in Global Health (GLOH)

The Global Health concentration prepares students to apply the tools of public health to the promotion of health in communities, countries, regions, and the world. Concentration coursework emphasizes comparative global health metrics; the socioeconomic, environmental, and other risk factors associated with transnational health concerns; and ethical and effective strategies for preventing and controlling infectious and non-communicable diseases in diverse populations. Students gain professional communication skills and develop competencies in program planning, implementation, monitoring, and evaluation.

<table>
<thead>
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<td>GCH 543</td>
<td>Global Health</td>
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<td>GCH 626</td>
<td>Migrant Health</td>
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<tr>
<td>GCH 640</td>
<td>Global Infectious Diseases</td>
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<td>GCH 650</td>
<td>Global Non-Communicable Diseases</td>
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<td>GLOA 600</td>
<td>Global Competencies</td>
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Electives
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<tr>
<td>BIOL 685</td>
<td>Emerging Infectious Diseases</td>
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<tr>
<td>COMM 620</td>
<td>Health Communication</td>
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<tr>
<td>COMM 637</td>
<td>Risk Communication</td>
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<td>COMM 639</td>
<td>Science Communication</td>
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<tr>
<td>COMM 660</td>
<td>Climate Change and Sustainability</td>
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<tr>
<td>COMM 721</td>
<td>E-Health Communication</td>
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<tr>
<td>EVPP 506</td>
<td>Science of the Environment I</td>
<td></td>
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<tr>
<td>EVPP 641</td>
<td>Environmental Science and Public Policy</td>
<td></td>
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<tr>
<td>GCH 515</td>
<td>Lesbian, Gay, Bisexual, Transgender, and Queer Health</td>
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<tr>
<td>GCH 535</td>
<td>Public Health Preparedness and Response</td>
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<tr>
<td>GCH 571</td>
<td>HIV/AIDS: Concepts, Principles, and Interventions</td>
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<tr>
<td>GCH 591</td>
<td>Study Abroad in Public Health</td>
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<tr>
<td>GCH 600</td>
<td>Health Promotion Methods</td>
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</tr>
<tr>
<td>GCH 607</td>
<td>Evidence-Based Public Health Practice</td>
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<td>GCH 610</td>
<td>Health Behavior Theory</td>
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<td>GCH 612</td>
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<tr>
<td>GCH 632</td>
<td>SAS for Health Research</td>
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<tr>
<td>GCH 651</td>
<td>Behavioral Research Methods</td>
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<td>GCH 691</td>
<td>Project Management in Public Health</td>
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<tr>
<td>GCH 762</td>
<td>Environmental Epidemiology</td>
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<tr>
<td>GCH 772</td>
<td>Social Epidemiology</td>
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<tr>
<td>GGS 540</td>
<td>Health Geography</td>
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<td>GGS 553</td>
<td>Geographic Information Systems</td>
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<td>GGS 581</td>
<td>World Food and Population</td>
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<td>NUTR 583</td>
<td>Food and Culture</td>
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<tr>
<td>NUTR 630</td>
<td>Global Nutrition</td>
<td></td>
</tr>
<tr>
<td>NUTR 651</td>
<td>Nutrition Assessment, Monitoring and Surveillance</td>
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</tbody>
</table>

Concentration in Health Policy (HTHP)

The Health Policy concentration addresses the nature and importance of policy and policy-making in today’s public health system. Through coursework and opportunities for practical application, students are introduced to the context and process for policy-making in public health, including the current political, economic, and legal environment for health policy and the basic elements of the public policy-making process and government payment systems. Students graduate with the knowledge and abilities needed to engage with public health and advocacy organizations on policy issues and to analyze and support policy approaches in an era of scarce public resources and ever-changing priorities.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HAP 602</td>
<td>Statistics in Health Services Management</td>
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<tr>
<td>or HAP 719</td>
<td>Advanced Statistics in Health Services Research</td>
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</tr>
<tr>
<td>HAP 715</td>
<td>Health Economics</td>
<td>3</td>
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<tr>
<td>HAP 742</td>
<td>Health Policy Development and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>HAP 764</td>
<td>Health Policy and Government Payment</td>
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<tr>
<td>Systems for Health Care Services</td>
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<td>HAP 793</td>
<td>Final Project in Applied Health Policy</td>
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Electives
Select three credits from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>HAP 652</td>
<td>Essentials of Health Insurance and Managed Care</td>
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<tr>
<td>HAP 712</td>
<td>Topics in Public Policy</td>
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<tr>
<td>HAP 745</td>
<td>Health Care Security Policy</td>
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<tr>
<td>HAP 746</td>
<td>Health Policy Leadership</td>
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</tbody>
</table>

Concentration in Public Health Communication (PHCM)

The Public Health Communication concentration prepares students to effectively use communication strategies to inform and influence individual and community decisions that affect health. This highly-specialized concentration links the fields of communication and public health and is increasingly recognized as a necessary element of efforts to improve personal and public health. The public health communication concentration emphasizes designing, evaluating, and implementing effective communication strategies and messages to address the health needs of diverse audiences.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 620</td>
<td>Health Communication</td>
<td>3</td>
</tr>
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<td>COMM 637</td>
<td>Risk Communication</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>--------</td>
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</tr>
<tr>
<td>COMM 670</td>
<td>Social Marketing</td>
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<tr>
<td>COMM 721</td>
<td>E-Health Communication</td>
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<tr>
<td>COMM 820</td>
<td>Health Communication Campaigns</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>Select three credits from the following:</td>
<td></td>
</tr>
<tr>
<td>BIOL 685</td>
<td>Emerging Infectious Diseases</td>
<td></td>
</tr>
<tr>
<td>COMM 639</td>
<td>Science Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 660</td>
<td>Climate Change and Sustainability Communication Campaigns</td>
<td></td>
</tr>
<tr>
<td>EVPP 506</td>
<td>Science of the Environment I</td>
<td></td>
</tr>
<tr>
<td>EVPP 641</td>
<td>Environmental Science and Public Policy</td>
<td></td>
</tr>
<tr>
<td>GCH 515</td>
<td>Lesbian, Gay, Bisexual, Transgender, and Queer Health</td>
<td></td>
</tr>
<tr>
<td>GCH 571</td>
<td>HIV/AIDS: Concepts, Principles, and Interventions</td>
<td></td>
</tr>
<tr>
<td>GCH 612</td>
<td>Migrant Health</td>
<td></td>
</tr>
<tr>
<td>GCH 626</td>
<td>Global Infectious Diseases</td>
<td></td>
</tr>
<tr>
<td>GCH 640</td>
<td>Global Non-Communicable Diseases</td>
<td></td>
</tr>
<tr>
<td>GCH 691</td>
<td>Project Management in Public Health</td>
<td></td>
</tr>
<tr>
<td>GCH 762</td>
<td>Environmental Epidemiology</td>
<td></td>
</tr>
<tr>
<td>GCH 772</td>
<td>Social Epidemiology</td>
<td></td>
</tr>
<tr>
<td>GCH 804</td>
<td>Biostatistics for Public Health I</td>
<td></td>
</tr>
<tr>
<td>GGS 540</td>
<td>Health Geography</td>
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<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td></td>
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<tr>
<td>GGS 581</td>
<td>World Food and Population</td>
<td></td>
</tr>
<tr>
<td>NUTR 583</td>
<td>Food and Culture</td>
<td></td>
</tr>
<tr>
<td>NUTR 651</td>
<td>Nutrition Assessment, Monitoring and Surveillance</td>
<td></td>
</tr>
<tr>
<td>NUTR 630</td>
<td>Global Nutrition</td>
<td></td>
</tr>
<tr>
<td>PUAD 502</td>
<td>Administration in Public and Nonprofit Organizations</td>
<td></td>
</tr>
<tr>
<td>PUAD 505</td>
<td>Introduction to Management of Nonprofits</td>
<td></td>
</tr>
<tr>
<td>PUAD 630</td>
<td>Emergency Planning and Preparedness</td>
<td></td>
</tr>
<tr>
<td>PUAD 631</td>
<td>Disaster Response Operations and Recovery</td>
<td></td>
</tr>
<tr>
<td>SOCI 635</td>
<td>Environment and Society</td>
<td></td>
</tr>
<tr>
<td>Advisor-approved elective course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

### Accelerated Master’s Bachelor’s Degree (any)/Public Health, Accelerated MPH

#### Overview

Highly-qualified undergraduates in any major may apply to the accelerated Master of Public Health (MPH). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and the Master of Public Health after successfully completing 156 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93) for policies related to this option.

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see the AP.6 Graduate Policies (p. 90) section of the catalog.

#### Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Admissions (p. 68). For information specific to the accelerated MPH, review the departmental web site (https://publichealth.gmu.edu/program/view/495566).

Applicants to the accelerated MPH program must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits completed at Mason) and no more than 90 credits. Students must submit:

- a completed application form (available at the admissions website (https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters))
Public Health Graduate Certificate

Banner Code: HH-CERG-PUBH

Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#gch

The Graduate Certificate in Public Health provides working professionals and graduate students an opportunity to advance their career and education in public health at their own pace on either a full- or part-time basis in two areas of concentration:

Generalist Concentration

This certificate program provides students with the fundamental knowledge and skills central to the traditional five core areas of public health: social and behavioral health, epidemiology, biostatistics, environmental health, and health systems. This program is ideally suited for those with public health-related experience or for students seeking to enhance a graduate degree program. For students planning to apply to the MPH degree program (p. 251), the GRE will be waived for those completing the Public Health Generalist program if they have earned a grade of “B” or better in all coursework.

Leadership and Management Concentration

This certificate program prepares students to apply the principles of public health leadership, stewardship and policy implementation to manage state and local health departments and various non-profit organizational and community health program initiatives. Students learn leadership strategies, public health regulatory requirements, public program management tools and policy development skills necessary to function in public health systems in the United States.

Admissions & Policies

Admissions

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Schools of Public Health Application System (http://www.sophas.org) (SOPHAS). To be eligible for admission to this certificate program, applicants must have two years of full-time work experience and currently be working in a health-related field. Applications are considered for the fall and spring semesters. For more information about the application requirements and deadlines, visit the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements

Total credits: 18

This certificate may be pursued on a full-or part-time basis.
Students must complete all requirements listed within a concentration. Minimum GPA of 3.0 is required in all courses applied to the Certificate in Public Health.

**Generalist Concentration (GLST)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 500</td>
<td>Foundations of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>GCH 604</td>
<td>Fundamentals of Epidemiology and Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>GCH 609</td>
<td>Community Assessment and Partnerships</td>
<td>3</td>
</tr>
<tr>
<td>GCH 645</td>
<td>U.S. and Global Public Health Systems</td>
<td>3</td>
</tr>
<tr>
<td>HAP 640</td>
<td>Current Issues in Health Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective**

Select three credits from the following:

- COMM 637 Risk Communication
- GCH 535 Public Health Preparedness and Response
- GCH 543 Global Health
- GCH 560 Environmental Health
- GCH 600 Health Promotion Methods
- GCH 601 Introduction to Biostatistics
- GCH 607 Evidence-Based Public Health Practice
- GCH 610 Health Behavior Theory
- GCH 611 Health Program Planning and Evaluation
- GCH 632 SAS for Health Research
- GCH 691 Project Management in Public Health
- GCH 712 Introduction to Epidemiology
- GCH 772 Social Epidemiology
- HAP 715 Health Economics
- NUTR 626 Food Systems
- NUTR 630 Global Nutrition

**Total Credits:** 18

**Leadership and Management Concentration (LM)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 712</td>
<td>Introduction to Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>HAP 680</td>
<td>Applied Public Health Leadership and Management</td>
<td>3</td>
</tr>
<tr>
<td>HAP 715</td>
<td>Health Economics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 742</td>
<td>Health Policy Development and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 661</td>
<td>Public Budgeting Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective**

Select three credits from the following:

- HAP 609 Comparative International Health Systems
- HAP 661 Policy Development and Analysis for Community Health Programs
- HAP 705 Strategic Management and Marketing in Health Care
- HAP 740 Management of Health Information Systems

**Total Credits:** 18

---

**Department of Health Administration and Policy**

Phone: 703-993-1929
Website: hap.gmu.edu/

**Administration**

- P. J. Maddox, Chair

The mission of the Department of Health Administration and Policy (HAP) is to provide innovative education, service, and research that contribute to improving the quality of care and delivery of healthcare services. The department accomplishes this mission by preparing professionals for careers as executives and managers in acute and ambulatory care and senior housing/assisted living organizations, as well as specialists in health informatics, healthcare risk management, and health policy.

The research and scholarly activities of the department contribute to basic and applied knowledge about the organization, management, financing, and performance of U.S. health systems and public health services; the development and management of health information systems; and the development and analysis of evidence-based U.S. health policy to foster innovation and public accountability and contribute to ensuring access to cost-effective, high-quality health services. The department works with consumers, stakeholders, students, faculty, alumni, research funders, and the community to ensure rigorous, relevant educational programs (including post-graduate professional development), service activities, and the development and timely dissemination of research. Part-time students are encouraged to take at least 6 credits per semester to promote timely completion of the program.

---

**Faculty**

**Department Faculty**

**Professors**
Alemi, Cuellar, Gerber, Kitsantas, Maddox (chair), Nichols (Center for Health Policy Research and Ethics, director)

**Associate Professors**
Anand, Cantiello, Eckenwiler, Gimm, Goldberg, Min, Wojtusiak (Center for Discovery Science and Health Informatics, director)

**Assistant Professors**
Avramovic, Blair, Brown, Green-Lawson, Madison, Osborn-Harrison, Shiver

**Instructors**
Henderson
Requirements & Policies

Requirements

Academic Advising

Each student is assigned an academic advisor who is a faculty member within their academic department or a professional academic advisor within the Office of Student Affairs (OSA). Academic advisor assignments are listed on the CHHS website (https://chhs.gmu.edu/students/academic-advising), and students are expected to meet with their advisor regularly (at least once each semester) to seek advice about academic schedules and program plans, internships, and career guidance. Students also should meet with their advisor if they are experiencing academic difficulty or personal challenges or if they are feeling overwhelmed.

All students are responsible for knowing the requirements of their major as specified in the university catalog for their catalog year; academic deadlines outlined in the semester academic calendar (http://registrar.gmu.edu/calendars); and university policies and procedures as stated in the catalog.

Students also should run their own degree-evaluation (http://registrar.gmu.edu/students/degree-evaluation) to identify graduation requirements and progress towards their degree. While academic advisors can give advice to students, students are responsible for the academic planning decisions they make. Academic advisors cannot be held responsible for mistakes made by students in selecting courses that may not count toward their degree and thus delay a desired graduation date.

Programs

- Health Administration, BS
- Health Informatics and Data Analytics Graduate Certificate
- Health Informatics, MS
- Health Information Technology Minor
- Health Policy, MS (title change pending SCHEV approval)
- Health Services Research, PhD
- Health Systems Management, MHA
- Health and Social Policy Minor
- Senior Housing Administration Minor

Health Administration, BS

Banner Code: HH-BS-HADM

Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/health-administration-and-policy-advisors

The BS in Health Administration prepares students to work in a variety of settings, including hospitals; clinics; community health, home care, long-term care, and managed care organizations; physician practices; information technology, medical technology and supply organizations; advocacy organizations and professional associations; the insurance industry; and consulting firms.

The program may be completed on a full- or part-time basis leading to completion of the objectives of the undergraduate BS program.

Concentrations are offered in health systems management, assisted living/senior housing administration, and health informatics.

Health Systems Management Concentration

The concentration in health systems management prepares graduates to serve in entry-level management, administrative and support positions in a variety of health-related organizations and settings.

Assisted Living/Senior Housing Administration Concentration

The concentration in assisted living/senior housing administration prepares graduates to serve in entry-level administrative and support positions within independent living, assisted living, and continuing care retirement communities.

Health Informatics Concentration

The concentration in health informatics prepares graduates in theory and methods for using information processing methods in healthcare organizations.

Admissions & Policies

Policies

Program Requirements

- A criminal background check is generally required of all students prior to beginning their internship.
- Students must fulfill all requirements for bachelor's degrees, including the Mason Core (p. 142) requirements. For all policies governing bachelor's degrees, see A.5.3.2 Requirements for Bachelor's Degrees (p. 89).
- Students should enroll in HAP 201 Health Professions Careers and HAP 301 Health Care Delivery in the United States during their first semester in the program.
- HAP 498 Health Administration Internship (Mason Core) (p. 142) and HAP 465 Integration of Professional Skills and Issues (Mason Core) (p. 142) are to be completed during the student’s final semester. The final semester is defined as the final 15 academic credits of the academic schedule.
- Students must check with their advisor to ensure that all requirements have been met prior to graduation.

Minimum Grade Requirements

A minimum grade of C must be obtained in all major requirements (58 - 64 credits). A minimum grade of C must also be obtained in ECON 103 in order for a student to enroll in HAP 425. In the health informatics concentration, a maximum of 6 credits of C grades in major requirements (64 credits) is permitted. Students in the health informatics concentration who earn more than 6 credits of C grades in the major requirements courses must either repeat one of the courses in which they earned a C and earn a C+ or higher or change programs or concentrations.
Requirements

Degree Requirements
Total credits: 120

Students must fulfill all requirements for bachelor's degrees, including the Mason Core (p. 142) requirements.

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core)</td>
<td>3</td>
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Oral Communication

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Quantitative Reasoning

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
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Information Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 104</td>
<td>Introduction to Computing (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Literature

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Mason Core Literature course (p. 147)</td>
<td></td>
<td>3</td>
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</tbody>
</table>

Arts

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Mason Core Arts course (p. 144)</td>
<td></td>
<td>3</td>
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</tbody>
</table>

Natural Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Select one group from the following:</td>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>

- BIOL 103 & BIOL 106 & BIOL 107 | Introductory Biology I (Mason Core) and Introductory Biology II Laboratory (Mason Core) and Intro Biology II Lecture (Mason Core) | 3       |

- BIOL 124 & BIOL 125 | Human Anatomy and Physiology and Human Anatomy and Physiology | 3       |

Western Civilization/World History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 100</td>
<td>History of Western Civilization (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 125</td>
<td>Introduction to World History (Mason Core)</td>
<td>3</td>
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</tbody>
</table>

Global Understanding

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Mason Core Global Understanding course (p. 146)</td>
<td></td>
<td>3</td>
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Social and Behavioral Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 38

1. Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 for ENGH 101. Students must attain a minimum grade of C in ENGH 100 or ENGH 101, as well as in ENGH 302, to fulfill degree requirements.

2. Business-designated sections of ENGH 302 Advanced Composition (Mason Core) (p. 142) are recommended.

3. Health Informatics concentration students must attain a minimum grade of B in IT 104 to fulfill degree requirements. Students in the Assisted Living/Senior Housing Administration concentration or Health Systems Management concentration must attain a minimum grade of C to fulfill degree requirements. Transfer students may substitute IT 103.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HAP 201</td>
<td>Health Professions Careers</td>
<td>3</td>
</tr>
<tr>
<td>HAP 202</td>
<td>Medical Terminology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HAP 290</td>
<td>Lifestyle Management</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

1. HAP 201 is to be taken during the student’s first semester in the program.

Concentration in Assisted Living/Senior Housing Administration (ASHA)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td>3</td>
</tr>
<tr>
<td>GCH 300</td>
<td>Introduction to Public Health</td>
<td>3</td>
</tr>
<tr>
<td>HAP 309</td>
<td>Healthcare Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HAP 310</td>
<td>Healthcare Ethics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 312</td>
<td>Healthcare Law</td>
<td>3</td>
</tr>
<tr>
<td>HAP 360</td>
<td>Introduction to Health Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>HAP 392</td>
<td>Human Resources Management in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HAP 395</td>
<td>Health Care Finance</td>
<td>3</td>
</tr>
<tr>
<td>HAP 396</td>
<td>Strategic Health Management and Planning</td>
<td>3</td>
</tr>
<tr>
<td>HAP 403</td>
<td>Assisted Living/Senior Housing Management and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>HAP 404</td>
<td>Senior Housing Sales and Marketing</td>
<td>3</td>
</tr>
<tr>
<td>HAP 416</td>
<td>Leadership and Management of Health Systems I</td>
<td>3</td>
</tr>
<tr>
<td>HAP 417</td>
<td>Leadership and Management of Health Systems II</td>
<td>3</td>
</tr>
<tr>
<td>HAP 425</td>
<td>Health Economics and Policy</td>
<td>3</td>
</tr>
<tr>
<td>HAP 465</td>
<td>Integration of Professional Skills and Issues (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HAP 489</td>
<td>Pre-Internship Seminar (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HAP 308</td>
<td>Public Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 309</td>
<td>Healthcare Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HAP 312</td>
<td>Healthcare Law</td>
<td>3</td>
</tr>
<tr>
<td>HAP 318</td>
<td>Introduction to IT Methods for Healthcare</td>
<td>3</td>
</tr>
</tbody>
</table>

**Concentration in Health Informatics (HINF)**

A maximum of 6 credits of C grades earned in the major requirements courses (64 credits) may be applied to the health informatics concentration. Students who earn more than 6 credits of C grades must either repeat one of the courses in which they earned a C and earn a C+ or higher or change programs or concentrations.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HAP 308</td>
<td>Public Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 309</td>
<td>Healthcare Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HAP 312</td>
<td>Healthcare Law</td>
<td>3</td>
</tr>
<tr>
<td>HAP 318</td>
<td>Introduction to IT Methods for Healthcare</td>
<td>3</td>
</tr>
</tbody>
</table>

**General Electives**

Electives must be approved by student’s advisor

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HAP 308</td>
<td>Public Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 309</td>
<td>Healthcare Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HAP 312</td>
<td>Healthcare Law</td>
<td>3</td>
</tr>
<tr>
<td>HAP 318</td>
<td>Introduction to IT Methods for Healthcare</td>
<td>3</td>
</tr>
</tbody>
</table>
## Concentration in Health Systems Management (HSMG)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 300</td>
<td>Introduction to Public Health</td>
<td>3</td>
</tr>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HAP 309</td>
<td>Healthcare Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HAP 310</td>
<td>Healthcare Ethics</td>
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<tr>
<td>HAP 312</td>
<td>Healthcare Law</td>
<td>3</td>
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<tr>
<td>HAP 360</td>
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<tr>
<td>HAP 392</td>
<td>Human Resources Management in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HAP 395</td>
<td>Health Care Finance</td>
<td>3</td>
</tr>
<tr>
<td>HAP 396</td>
<td>Strategic Health Management and Planning</td>
<td>3</td>
</tr>
<tr>
<td>HAP 410</td>
<td>Introduction to Health/Medical Practice Management</td>
<td>3</td>
</tr>
<tr>
<td>HAP 416</td>
<td>Leadership and Management of Health Systems I</td>
<td>3</td>
</tr>
<tr>
<td>HAP 417</td>
<td>Leadership and Management of Health Systems II</td>
<td>3</td>
</tr>
<tr>
<td>HAP 425</td>
<td>Health Economics and Policy</td>
<td>3</td>
</tr>
<tr>
<td>HAP 430</td>
<td>Process Improvement in Healthcare Organizations</td>
<td>3</td>
</tr>
<tr>
<td>HAP 442</td>
<td>Introduction to Health Care Politics and Policy</td>
<td>3</td>
</tr>
<tr>
<td>HAP 445</td>
<td>Introduction to Health Services Research</td>
<td>3</td>
</tr>
<tr>
<td>HAP 465</td>
<td>Integration of Professional Skills and Issues (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(fulfills synthesis and writing intensive requirements) 2</td>
<td></td>
</tr>
<tr>
<td>HAP 489</td>
<td>Pre-Internship Seminar (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HAP 498</td>
<td>Health Administration Internship (Mason Core)</td>
<td>4</td>
</tr>
</tbody>
</table>

### CHHS Electives

6 credits must include 200-level or above courses from the following:

- GCH courses (p. 1762)
- HAP courses (p. 1796)
- HHS courses (p. 1811)
- NURS courses (p. 1994)
- NUTR courses (p. 2014)
- RHBS courses (p. 2137)
- SOCW courses (p. 2157)
- Non-CHHS courses pre-approved for substitution by the concentration coordinator

### General Electives

Electives are at the student’s discretion. 9

Total Credits 73

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1. HAP 301 is to be taken during the student’s first semester in the program.
2. HAP 465 may only be taken within the final 15 credits of the curriculum.
3. HAP 489 may only be taken in the semester immediately prior to HAP 498.
4. HAP 498 may only be taken within the final 15 credits of the curriculum. Students in HAP 498 complete an internship as identified and approved by the concentration coordinator during HAP 489. Under special circumstances and upon recommendation by the course instructors and the student’s advisor, students may be excused by the department chair from taking HAP 489 and HAP 498. Such students are required to take alternative courses that are pre-approved by the student’s advisor and worth at least 7 credits.

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### Accelerated Master's

#### Health Administration, BS/Health Informatics, Accelerated MS

**Overview**

Highly qualified undergraduates may be admitted to the bachelor’s/accelerated master’s program and obtain both a BS in Health Administration (Health Informatics Concentration) and an MS in Health Informatics in an accelerated time frame after satisfactory completion of 147-159 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93) for policies related to this option.

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see the AP.6 Graduate Policies (p. 90) section of the catalog.

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Admissions (p. 68). For additional application requirements and information specific to the accelerated MS in Health Informatics, see Eligibility, Policies, and Deadlines on the departmental website.

Applicants must be enrolled in the BS in Health Administration, Health Informatics Concentration with an overall GPA of 3.25 and minimum GPA 3.5 in courses in the major. Applicants must have recommendations from two health informatics faculty.

**Accelerated Option Requirements**

Students complete six credits of graduate level courses in their senior year which may be applied towards BS degree. While undergraduate students, accelerated master’s students are able to apply two courses (6 credits) to both the Bachelor’s and Master’s degrees. These courses are considered advanced standing for the MS in Health Informatics. A minimum grade of B must be earned to be eligible to count as advanced standing. The courses are selected by an MS program adviser.

After completion of the BS portion of the curriculum, students in the accelerated program have also the option to replace selected core courses in the MS program with more advanced graduate level courses. This is allowed if the student received at least B+ in corresponding undergraduate courses and if approved by the adviser.
Health Informatics and Data Analytics Graduate Certificate

Banner Code: HH-CERG-HIDA

Academic Advising
Website: https://hap.gmu.edu/program/view/19933

This certificate prepares clinicians, health care managers, statisticians, epidemiologists, computer programmers, data analysts, and other professionals in analysis of complex health care data, including data extracted from electronic health records, claims data, and consumer generated data. Since electronic health records and related data repositories are becoming increasingly more massive, the certificate emphasizes topics related to big data analysis. Data mining, propensity scoring, and other advanced analytic techniques covered in the certificate can handle complex problems typically found in observational data: large, multidimensional and multi-type data sets, with many confounding issues and noise. These techniques can be computationally efficient on large scale analysis and intelligent in predicting an outcome.

This certificate qualifies for Title IV Federal Financial Aid. For more information about the educational debt, earnings, and completion rates of students who completed the program, and other important information, please visit the Gainful Employment Disclosure Template (https://irr2.gmu.edu/gedt/Health_Informatics_and_Data_Analytics/Gedt.html).

Admissions & Policies

Admissions

Applicants must hold a bachelor's degree from a regionally-accredited institution and must have a minimum of a 3.0 GPA to be considered. Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). The application process is competitive, and applications are considered for the fall and spring semesters. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements

Total credits: 18

This certificate may be pursued on a full- or part-time basis.

Students must complete at least 18 credits of required courses with a grade of B or better. The course content and syllabi are also available at the program website (http://chhs.gmu.edu/hap/health-informatics/certificate-health-informatics-and-data-analytics.cfm) and by contacting hap@gmu.edu.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 618</td>
<td>Computational Tools in Health Informatics</td>
<td>18</td>
</tr>
<tr>
<td>HAP 671</td>
<td>Health Care Databases</td>
<td></td>
</tr>
<tr>
<td>HAP 719</td>
<td>Advanced Statistics in Health Services Research I</td>
<td></td>
</tr>
<tr>
<td>HAP 720</td>
<td>Health Data Integration</td>
<td></td>
</tr>
<tr>
<td>HAP 725</td>
<td>Statistical Process Control in Healthcare</td>
<td></td>
</tr>
<tr>
<td>HAP 777</td>
<td>Health Data Visualization</td>
<td></td>
</tr>
<tr>
<td>HAP 780</td>
<td>Data Mining in Health Care</td>
<td></td>
</tr>
<tr>
<td>HAP 823</td>
<td>Comparative Effectiveness Analysis using Observational Data</td>
<td></td>
</tr>
<tr>
<td>HAP 880</td>
<td>Advanced Health Data Mining</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

Health Informatics, MS

Banner Code: HH-MS-HINF

Academic Advising
Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#hap

The purpose of the degree is to provide students with a graduate education to advance careers as leaders and innovators in health informatics. The program combines healthcare, medical and information technology domains, and places particular emphasis on the interdisciplinary collaboration between these fields. We prepare health informatics professionals with knowledge of healthcare industry and technology solutions, in conjunction with practical skills needed in this dynamically evolving field. The program's goal is to prepare graduates to be able to effectively analyze complex health data, manage evolving health information systems (ranging from evaluation of information needs to design, development, acquisition, implementation, operation and improvement) and support the increased adoption and use of electronic health records.

This 33-39 credit graduate degree program prepares students to become health information systems specialists, health data analysts, health care managers and consultants. Graduates of the program may be employed in health information technology firms, health care/service organizations and their business partners, as well as public health entities. Students learn about emerging technologies likely to impact delivery of health services in the future. The program provides a basis for students who wish to continue their education toward a doctoral degree in health informatics or a related field. The program consists of three concentrations: Health Data Analytics, Health Informatics Management and Population Health Informatics.

The MS in Health Informatics degree is offered via a regular on-campus or premium priced all-online delivery format. The curriculum in both programs is the same, but students must matriculate through only one pathway. Separate application processes are used for online and on-campus programs. Most courses in the on-campus program are taught in the evening at Mason's Fairfax Campus, with some courses available in hybrid or online formats. On-campus students can complete their degree at their own pace provided that they do so within six years of starting.
the program. The online premium-priced program is offered in a flexible, compressed schedule online format. In the all-online program, courses are taken one at a time, in an accelerated 8-week format, and follow a prescribed sequence.

Concentrations
Health Data Analytics Concentration
The Health Data Analytics Concentration provides students with deep understanding of health data, analytic methods, and data mining, as well as data science skills applied to clinical, administrative and consumer-generated health data.

Health Information Management Concentration
The Health Information Management Concentration provides students with knowledge and skills needed to manage evolving health information systems (ranging from evaluation of information needs to design, development, acquisition, implementation, operation and improvement) and support the increased adoption and use of electronic health records.

Population Health Informatics Concentration
The Population Health Informatics Concentration provides students with knowledge and skills needed to collect, analyze and manage population-level data, as well as understanding of electronic tools used in population health. Managing the health of populations requires the involvement of both organizations and individuals within a community and is viewed as a promising model to not only improve health outcomes but also reduce cost. The concentration content starts by addressing traditional public health information needs and then moves on to sophisticated business analytics and data governance to support the goals of accountable care organizations, integrated care networks, and value-based purchasing programs.

Admissions & Policies
Admissions
Requirements
Applicants must hold a BA or BS degree or equivalent from an accredited university or college. Although the field or major is not a criterion for admission, the applicants are expected to have taken basic-level computer science/technology, mathematics, and statistics, and be familiar with these fields. Students who do not meet these requirements may be required to take additional prerequisite courses. Clinicians are encouraged to apply. An undergraduate grade point average of 3.25 (on a 4.0 scale) or above is preferred.

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). The application process is competitive, and applications are considered for the fall and spring semesters. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

Furthermore, although experience is not required, applicants with at least 1 year of professional work experience in a medical or health-related organization OR 1 year of work experience in information technology in any sector are preferred.

Policies
For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Transfer of Credit
Students may transfer a maximum of 12 credits from graduate courses taken at other institutions or taken at Mason in non-degree status. Transfer credit is subject to university (p. 77) and college (p. 245) policies and must be approved by the program director and the dean. Students who enroll initially through non-degree studies should seek course advising through the department and should submit their application to the MS program in their first semester of study.

Students with Undergraduate Program in Health Informatics
Students coming from Health Informatics undergraduate programs may request substitution of selected courses with more advanced courses if they received at least B+ in equivalent undergraduate courses.

Requirements
Degree Requirements
Total credits: 33-39

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 618</td>
<td>Computational Tools in Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 678</td>
<td>Introduction to the U.S. Health System</td>
<td>3</td>
</tr>
<tr>
<td>HAP 670</td>
<td>Introduction to Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 671</td>
<td>Health Care Databases</td>
<td>3</td>
</tr>
<tr>
<td>HAP 672</td>
<td>Health Data: Vocabulary and Standards</td>
<td>3</td>
</tr>
<tr>
<td>HAP 752</td>
<td>Advanced Health Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 12-18

1 HAP 618 Computational Tools in Health Informatics may be waived for students with strong computing skills and/or a degree in computer science.

2 HAP 678 may be waived for students with strong health administration background.

Health Data Analytics Concentration (HDAN)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 719</td>
<td>Advanced Statistics in Health Services Research I</td>
<td>3</td>
</tr>
<tr>
<td>HAP 725</td>
<td>Statistical Process Control in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HAP 780</td>
<td>Data Mining in Health Care</td>
<td>3</td>
</tr>
<tr>
<td>HAP 823</td>
<td>Comparative Effectiveness Analysis using Observational Data</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective: 3

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 675</td>
<td>Project in Health Data Analysis</td>
</tr>
<tr>
<td>HAP 720</td>
<td>Health Data Integration</td>
</tr>
<tr>
<td>HAP 730</td>
<td>Health Care Decision Analysis</td>
</tr>
</tbody>
</table>
Health Information Technology Minor

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 770</td>
<td>Medical Decision Making and Decision Support Systems</td>
<td></td>
</tr>
<tr>
<td>HAP 777</td>
<td>Health Data Visualization</td>
<td></td>
</tr>
<tr>
<td>HAP 819</td>
<td>Advanced Statistics in Health Services Research II</td>
<td></td>
</tr>
<tr>
<td>HAP 880</td>
<td>Advanced Health Data Mining</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

1 HAP 675 is a variable-credit course. Three credits must be completed to fulfill the elective requirement.

Health Informatics Management Concentration (HINM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 602</td>
<td>Statistics in Health Services Management</td>
<td>3</td>
</tr>
<tr>
<td>HAP 622</td>
<td>Healthcare Information Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>HAP 713</td>
<td>Project Management in Health Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>or SWE 625</td>
<td>Software Project Management</td>
<td></td>
</tr>
<tr>
<td>HAP 745</td>
<td>Health Care Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- HAP 601 E-Commerce and On-line Marketing for Health Services
- HAP 621 Organization Behavior and Healthcare Leadership
- HAP 645 Introduction to Health Services Research
- HAP 647 Regulatory Requirements for Health Care Systems
- HAP 686 Quality Improvement in Health Services
- HAP 715 Health Economics
- HAP 750 Legal Issues in Health Administration
- HAP 770 Medical Decision Making and Decision Support Systems

Total Credits 15

Population Health Concentration (HIP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 717</td>
<td>Population Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 718</td>
<td>Consumer Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>GCH 712</td>
<td>Introduction to Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Select two of the following:

- GGS 650 Introduction to GIS Algorithms and Programming
- HAP 730 Health Care Decision Analysis
- HAP 780 Data Mining in Health Care

Total Credits 15

Practicum or Thesis

After completing coursework, and with permission of advisor, students choose between the Capstone Practicum and Master’s Thesis. Both options require two semesters to complete.

Code | Title                                               | Credits |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one option from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practicum Option</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAP 789 Pre-Capstone Professional Development Seminar</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HAP 790 Capstone Practicum in Health Systems Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Thesis Option</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAP 799 Master’s Thesis</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Accelerated Master’s

Health Administration, BS/Health Informatics, Accelerated MS

Overview

Highly qualified undergraduates may be admitted to the bachelor’s/accelerated master’s program and obtain both a BS in Health Administration (Health Informatics Concentration) and an MS in Health Informatics in an accelerated time frame after satisfactory completion of 147-159 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93) for policies related to this option.

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see the AP.6 Graduate Policies (p. 90) section of the catalog.

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Admissions (p. 68). For additional application requirements and information specific to the accelerated MS in Health Informatics, see Eligibility, Policies, and Deadlines on the departmental website.

Applicants must be enrolled in the BS in Health Administration, Health Informatics Concentration with an overall GPA of 3.25 and minimum GPA 3.5 in courses in the major. Applicants must have recommendations from two health informatics faculty.

Accelerated Option Requirements

Students complete six credits of graduate level courses in their senior year which may be applied towards BS degree. While undergraduate students, accelerated master’s students are able to apply two courses (6 credits) to both the Bachelor’s and Master’s degrees. These courses are considered advanced standing for the MS in Health Informatics. A minimum grade of B must be earned to be eligible to count as advanced standing. The courses are selected by an MS program adviser.

After completion of the BS portion of the curriculum, students in the accelerated program have also the option to replace selected core courses in the MS program with more advanced graduate level courses. This is allowed if the student received at least B+ in corresponding undergraduate courses and if approved by the adviser.

Health Information Technology Minor

Banner Code: HIT
The minor in Health Information Technology introduces students, in a non-technical context, to the utilization of health information management in the professional arena of health care management and policy. Students will examine the current and projected role of health information management in the delivery of health care and development of health policy and apply this information in a practical research endeavor.

### Admissions & Policies

#### Policies

At least 12 credits must be unique to the minor and cannot be used to fulfill the program of study requirements of the student's major, concentration, undergraduate certificate, or another minor. Students should be familiar with university-wide requirements for minors described in AP.5.3.4 Minors (p. 90).

#### Minor Requirements

Total credits: 18

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HAP 360</td>
<td>Introduction to Health Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>HAP 361</td>
<td>Health Databases</td>
<td>3</td>
</tr>
<tr>
<td>or IT 214</td>
<td>Database Fundamentals</td>
<td></td>
</tr>
<tr>
<td>HAP 459</td>
<td>Health Data Standards and Interoperability</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 12

**Electives**

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 308</td>
<td>Public Health Informatics</td>
<td></td>
</tr>
<tr>
<td>HAP 436</td>
<td>Electronic Health Data in Process Improvement</td>
<td></td>
</tr>
<tr>
<td>HAP 440</td>
<td>Mobile Health</td>
<td></td>
</tr>
<tr>
<td>HAP 460</td>
<td>Information Technology Project Management</td>
<td></td>
</tr>
<tr>
<td>HAP 461</td>
<td>Internet and Web Technology Applications for Healthcare</td>
<td></td>
</tr>
<tr>
<td>HAP 464</td>
<td>Electronic Health Record Configuration and Data Analysis</td>
<td></td>
</tr>
<tr>
<td>HAP 467</td>
<td>Advanced Information Technology Project Management</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

---

### Health Policy, MS (title change pending SCHEV approval)

Banner Code: HH-MS-HTHP

#### Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#hap

**Note:** As of catalog publication in April, the title for this program (formerly known as Health and Medical Policy, MS) has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia.

The master's program in health policy prepares students to become analysts and informed decision-makers at the local, state, and national levels, to be policy consultants, to support the work of foundations, or to engage with public health and advocacy organizations in the U.S. and abroad. Students are expected to graduate with the knowledge and skills needed to analyze health policy issues; examine health system approaches; formulate new policies; and support policy development in health care financing, healthcare delivery system innovations, and the allocation of scarce resources.

Students will learn how health care services in the U.S. are delivered and paid for, how well the U.S. health care system performs from an individual and societal perspective, and how various key stakeholders influence the formation and development of health policy.

#### Admissions & Policies

#### Admissions

**Requirements**

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). The application process is competitive, and applications are considered for the fall and spring semesters. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

#### Policies

For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

#### Transfer of Credit

Students may transfer a maximum of 12 credits from graduate courses taken at other institutions or taken at Mason in non-degree status. Transfer credit is subject to university (p. 77) and college (p. 245) policies and must be approved by the program director and the dean. Students who enroll initially through non-degree studies should seek course advising through the department and should submit their application to the MS program in their first semester of study.

#### Requirements

(formerly HH-MS-HMP)
Note: As of catalog publication in April, the title for this program (formerly known as Health and Medical Policy, MS) has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia.

Degree Requirements
Total credits: 42

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 640</td>
<td>Current Issues in Health Policy</td>
<td>3</td>
</tr>
<tr>
<td>HAP 652</td>
<td>Essentials of Health Insurance and Managed Care</td>
<td>3</td>
</tr>
<tr>
<td>HAP 715</td>
<td>Health Economics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 742</td>
<td>Health Policy Development and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>HAP 764</td>
<td>Health Policy and Government Payment Systems for Health Care Services</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 730</td>
<td>US Institutions and the Policy Process</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 615</td>
<td>Administrative Law</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 750</td>
<td>Federalism and Intergovernmental Relations</td>
<td>3</td>
</tr>
<tr>
<td>HAP 602</td>
<td>Statistics in Health Services Management</td>
<td>3</td>
</tr>
<tr>
<td>HAP 645</td>
<td>Introduction to Health Services Research</td>
<td>3</td>
</tr>
<tr>
<td>HAP 719</td>
<td>Advanced Statistics in Health Services Research I</td>
<td>3</td>
</tr>
<tr>
<td>POGO 646</td>
<td>Policy and Program Evaluation</td>
<td>3</td>
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</table>

Capstone

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 793</td>
<td>Final Project in Applied Health Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 39

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three credits from the following:</td>
<td></td>
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<tr>
<td>HAP 621</td>
<td>Organization Behavior and Healthcare Leadership</td>
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<tr>
<td>HAP 647</td>
<td>Regulatory Requirements for Health Care Systems</td>
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</tr>
<tr>
<td>HAP 661</td>
<td>Policy Development and Analysis for Community Health Programs</td>
<td></td>
</tr>
<tr>
<td>HAP 703</td>
<td>Financial Management in Health Systems</td>
<td></td>
</tr>
<tr>
<td>HAP 745</td>
<td>Health Care Security Policy</td>
<td></td>
</tr>
<tr>
<td>HAP 746</td>
<td>Health Policy Leadership</td>
<td></td>
</tr>
<tr>
<td>HAP 750</td>
<td>Legal Issues in Health Administration</td>
<td></td>
</tr>
<tr>
<td>GCH 600</td>
<td>Health Promotion Methods</td>
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</tr>
<tr>
<td>GCH 610</td>
<td>Health Behavior Theory</td>
<td></td>
</tr>
<tr>
<td>GCH 611</td>
<td>Health Program Planning and Evaluation</td>
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</tr>
<tr>
<td>GCH 651</td>
<td>Behavioral Research Methods</td>
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<tr>
<td>GCH 712</td>
<td>Introduction to Epidemiology</td>
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<tr>
<td>BIOD 609</td>
<td>Biodefense Strategy</td>
<td></td>
</tr>
<tr>
<td>BIOD 620</td>
<td>Global Health Security Policy</td>
<td></td>
</tr>
</tbody>
</table>

Health Services Research, PhD

Banner Code: HH-PHD-HSR

Alison Cuellar, PhD; Program Coordinator

Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#hap

The purpose of the PhD program in Health Services Research is to prepare graduates to be scholars, educators, researchers, and leaders in higher education, health care and service organizations, health care consulting firms, government and nonprofit organizations, and private businesses that support or regulate the health service industry. The degree has the following two specialized programs of study (concentrations):

- Knowledge Discovery and Health Informatics
- Health Systems and Policy

Admissions & Policies

Admissions Requirements

Students must have a master’s degree or other advanced degree (i.e., MD, JD, PhD or equivalent) from a regionally-accredited institution before being admitted to the 72-credit PhD program.

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).
Policies

Reduction of Credit
Students who enter with a master’s or other advanced degree may have the credit requirement reduced by up to 30 credits for previous coursework that closely corresponds with doctoral program requirements. The credit reduction decision will be made by the doctoral advisor and requires approval of the doctoral program director. Requests for reduction of credit are reviewed only after acceptance to the doctoral program.

Time Requirements
Students must complete all requirements for the PhD in Health Services Research within 9 calendar years from the time of first enrollment as a doctoral student in the program or with provisional status. PhD students are expected to progress steadily toward their degree and to complete all coursework and comprehensive and field exams in order to advance to candidacy within no more than 6 years.

Requirements

Degree Requirements
Total credits: 72

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Research and Computational Methods Domain</td>
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<tr>
<td>HAP 719</td>
<td>Advanced Statistics in Health Services</td>
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</tr>
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<td></td>
<td>Research I</td>
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<tr>
<td>HAP 760</td>
<td>Philosophy of Science in Health Services</td>
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<td></td>
<td>Research</td>
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<td>HAP 819</td>
<td>Advanced Statistics in Health Services</td>
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<td>Research II</td>
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</tr>
<tr>
<td>HAP 835</td>
<td>Causal Inference in Health Services</td>
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</tr>
<tr>
<td></td>
<td>Research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knowledge Discovery and Health Informatics Domain</td>
<td></td>
</tr>
<tr>
<td>HAP 671</td>
<td>Health Care Databases</td>
<td>3</td>
</tr>
<tr>
<td>HAP 720</td>
<td>Health Data Integration</td>
<td>3</td>
</tr>
<tr>
<td>HAP 780</td>
<td>Data Mining in Health Care</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Health Systems and Policy Domain</td>
<td></td>
</tr>
<tr>
<td>HAP 715</td>
<td>Health Economics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 742</td>
<td>Health Policy Development and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>HAP 868</td>
<td>Advanced Research Seminar in Health</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Policy Analysis</td>
<td></td>
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<tr>
<td></td>
<td>Total Credits</td>
<td>30</td>
</tr>
</tbody>
</table>

Concentration and Electives

Students take additional courses in one of two concentration domains: Knowledge Discovery and Health Informatics or Health Systems and Policy. Doctoral-level electives outside of CHHS or concentration-related content areas may be taken as approved by the student’s academic advisor. A maximum of 6 credits of 600-level courses may be applied to the degree.

Concentration in Knowledge Discovery and Health Informatics (KDHI)

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>HAP 618</td>
<td>Computational Tools in Health Informatics</td>
<td>30</td>
</tr>
<tr>
<td>HAP 672</td>
<td>Health Data: Vocabulary and Standards</td>
<td></td>
</tr>
<tr>
<td>HAP 730</td>
<td>Health Care Decision Analysis</td>
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</tr>
<tr>
<td>HAP 745</td>
<td>Health Care Security Policy</td>
<td></td>
</tr>
<tr>
<td>HAP 752</td>
<td>Advanced Health Information Systems</td>
<td></td>
</tr>
<tr>
<td>HAP 770</td>
<td>Medical Decision Making and Decision Support Systems</td>
<td></td>
</tr>
<tr>
<td>HAP 823</td>
<td>Comparative Effectiveness Analysis using Observational Data</td>
<td></td>
</tr>
<tr>
<td>HAP 925</td>
<td>Advanced Methods in Qualitative Research for Health Care</td>
<td></td>
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<tr>
<td>GCH 807</td>
<td>Measurement Theories and Applications in Public Health Research</td>
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<tr>
<td>RHBS 720</td>
<td>Principles of Clinical Trials</td>
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<tr>
<td>RHBS 816</td>
<td>Rehabilitation Efficacy and Effectiveness Research</td>
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</tr>
<tr>
<td>STAT 663</td>
<td>Statistical Graphics and Data Exploration</td>
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</tr>
<tr>
<td></td>
<td>Statistical Graphics and Data Exploration II</td>
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<tr>
<td></td>
<td>Computational Learning and Discovery</td>
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<tr>
<td>Other course(s) supporting the student’s subject matter or research methods, as approved by the advisor</td>
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<td></td>
<td>Total Credits</td>
<td>30</td>
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Concentration in Health Systems and Policy (HSYP)

<table>
<thead>
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</thead>
<tbody>
<tr>
<td></td>
<td>Thirty credits from the following:</td>
<td></td>
</tr>
<tr>
<td>HAP 645</td>
<td>Introduction to Health Services Research</td>
<td>30</td>
</tr>
<tr>
<td>HAP 661</td>
<td>Policy Development and Analysis for Community Health Programs</td>
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<tr>
<td>HAP 704</td>
<td>Contemporary Issues in Health Systems Management</td>
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<tr>
<td>HAP 745</td>
<td>Health Care Security Policy</td>
<td></td>
</tr>
<tr>
<td>HAP 746</td>
<td>Health Policy Leadership</td>
<td></td>
</tr>
<tr>
<td>HAP 823</td>
<td>Comparative Effectiveness Analysis using Observational Data</td>
<td></td>
</tr>
<tr>
<td>HAP 925</td>
<td>Advanced Methods in Qualitative Research for Health Care</td>
<td></td>
</tr>
<tr>
<td>GCH 807</td>
<td>Measurement Theories and Applications in Public Health Research</td>
<td></td>
</tr>
<tr>
<td>RHBS 816</td>
<td>Rehabilitation Efficacy and Effectiveness Research</td>
<td></td>
</tr>
<tr>
<td>Other course(s) supporting the student’s subject matter or research methods, as approved by the advisor</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>30</td>
</tr>
</tbody>
</table>

Comprehensive Exams

Two comprehensive examinations will determine whether the student has the necessary knowledge and skills to undertake dissertation work.
These examinations must be taken within one year of completion of all coursework (except for dissertation sequence courses).

**Advancement to Candidacy**

Students who complete all core and concentration course requirements, pass the comprehensive exams, and successfully defend the dissertation proposal advance to candidacy. A student must advance to candidacy status before taking the dissertation courses.

**Dissertation Sequence Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>HAP 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>12</td>
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<tr>
<td>HAP 999</td>
<td>Doctoral Dissertation (at least 6 credits)</td>
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</table>

**Total Credits**: 12

**Dissertation**

After advancement to candidacy, the HSR PhD student must complete an approved dissertation. The student must seek and obtain the approval of the HSR PhD Program Director on the selection of his/her Dissertation Chair and committee members. The committee must have at least three members, each of which must be a full-time member of the graduate faculty. The Chair must hold an appointment in the Department of Health Administration and Policy (HAP) and be approved by the Program Director. The second member of the dissertation committee must be a member of either the HAP Department or the College of Health and Human Services, and the third member of the committee must be from the College or other academic unit at George Mason University. A fourth member of the committee may be appointed, from another academic unit or from outside Mason, with the approval of the Program Director.

Within six months of passing the comprehensive examinations, the student must submit a draft dissertation proposal to the Dissertation Chair and committee. The proposal shall describe the proposed research as directed by the Chair and Committee. Failure to submit the proposal in a timely manner is grounds for academic probation. The proposal must provide a detailed literature review that provides the context and rationale for the research objectives, state the dissertation objective(s), and describe the proposed study design and analytic methods. An oral proposal defense must be scheduled with dissertation committee members who have agreed to serve. During the oral proposal defense, the student will describe their proposed research and address questions by the committee members. At the oral defense, the Dissertation Committee determines approval or disapproval of the proposal. Committee disapproval is accompanied by written recommendations for improving the proposed research with expectations for resubmission.

**Health Systems Management, MHA**

**Banner Code**: HH-MHA-HSMG

**Academic Advising**

Website: [https://chhs.gmu.edu/students/academic-advising/graduate-advising#hap](https://chhs.gmu.edu/students/academic-advising/graduate-advising#hap)

The master of health administration (MHA), health systems management program is accredited by the Commission on Accreditation of Healthcare Management Education (http://cahme.org) (CAHME). The United States Department of Education and Council on Higher Education Accreditation have granted formal recognition to CAHME as the only organization to accredit master’s level health care management programs in the United States and Canada. This master’s program prepares future executives to assume leadership positions in health care organizations. We prepare health care professionals with strategic, business, analytic, and decision-making skills needed to successfully navigate the evolving health care industry.

This 47-credit hour program prepares students to work as leaders and executive-level managers in evolving health systems, or as consultants and managers of health-related organizations. The curriculum was developed in response to the demand for advanced health management preparation for a variety of health care and allied health professionals to be employed in both the public and private sectors of health care.

**Admissions & Policies**

**Admissions Requirements**

Applicants must hold a bachelor’s degree from a regionally accredited institution (http://admissions.gmu.edu/grad/accreditation) and have a minimum of a 3.0 GPA to be considered. Admission to the program is competitive, and a variety of criteria are evaluated in the admission decision. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines). Applicants are evaluated based on past academic performance (including prior academic degrees and courses taken), letters of recommendation, personal professional goal statement and professional experience. Work experience in the healthcare industry is preferred, but not required for admission. The application materials are used to determine the applicant’s “match” with the program and potential for success in graduate studies. Applicants who are deemed to meet the above criteria are required to have a brief personal interview with faculty. Applicants who are unable to attend a personal interview will be interviewed through video conferencing technology.

**Policies**

For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Transfer of Credit**

Students may transfer a maximum of 12 credits from graduate courses taken at other institutions or taken at Mason in non-degree status. Transfer credit is subject to university (p. 77) and college (p. 245) policies and must be approved by the program director and the dean. Students who enroll initially through non-degree studies should seek course advising through the department and should submit their application to the MHA program in their first semester of study.

**Program Format**

The MHA in Health Systems Management is offered in both on-campus and online delivery formats. The curriculum is the same whether you are studying online or on campus, but students must apply to and matriculate through only one pathway.

Most courses in the on-campus program are taught in the evening at Mason’s Fairfax Campus. Additionally, some courses are offered on Saturdays, a few are offered at the Arlington Campus, and a small percentage can be taken online. Students can complete their degree at...
their own pace provided that they do so within six years of starting the program.

The online premium priced program is offered in a flexible, online format, which mirrors the CAHME-accredited on-campus program. Courses are taken one at a time in an accelerated 8 week format.

**English Language Test Score Thresholds**

International students whose scores on the English Language Tests are below the thresholds required by the program must take EAP 508 Graduate Communication in the Disciplines III (Credits: 4) in their first semester of study and earn a grade of B (3.0) or higher. This will add 4 credits to the 47 credit hour program for a total of 51 credits.

<table>
<thead>
<tr>
<th>Test</th>
<th>Overall</th>
<th>Listening</th>
<th>Reading</th>
<th>Writing</th>
<th>Speaking</th>
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<td>26</td>
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<tr>
<td>TOEFL PBT</td>
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<td>59</td>
<td>60</td>
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<tr>
<td>TOEFL CBT</td>
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<td>24</td>
<td>25</td>
<td>26</td>
<td>N/A</td>
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<tr>
<td>PTE</td>
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<td>Subsections</td>
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<td>68+</td>
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<td>IELTS</td>
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</table>

**Requirements**

**Degree Requirements**

Total credits: 47-51

The program of study comprises 47-51 credits grouped into two phases of study. International students whose scores on the English Language Tests are below the thresholds required by the program are required to take EAP 508 Graduate Communication in the Disciplines III (http://catalog.gmu.edu/preview_course_nopop.php?catoid=29&coid=308575) (Credits: 4) in their first semester of study and earn a grade of B (3.0) or higher. This will increase the degree requirements for these students from 47 to 51 credits.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>Phase I - Leadership in the Healthcare Delivery System</td>
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<tr>
<td>HAP 678</td>
<td>Introduction to the U.S. Health System</td>
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</tr>
<tr>
<td>HAP 621</td>
<td>Organization Behavior and Healthcare Leadership</td>
<td>3</td>
</tr>
<tr>
<td>HAP 715</td>
<td>Health Economics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 670</td>
<td>Introduction to Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>HAP 652</td>
<td>Essentials of Health Insurance and Managed Care</td>
<td>3</td>
</tr>
<tr>
<td>HAP 750</td>
<td>Legal Issues in Health Administration</td>
<td>3</td>
</tr>
<tr>
<td>HAP 707</td>
<td>Human Resource Management in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>Phase II - Problem Resolution and Decision Making</td>
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<td></td>
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<tr>
<td>HAP 602</td>
<td>Statistics in Health Services Management</td>
<td>3</td>
</tr>
<tr>
<td>HAP 708</td>
<td>Quantitative Methods in Health Care Management</td>
<td>3</td>
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<td>HAP 711</td>
<td>Quality Improvement in Health Services</td>
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<td>HAP 703</td>
<td>Financial Management in Health Systems</td>
<td>3</td>
</tr>
<tr>
<td>HAP 702</td>
<td>Managerial Accounting in Health Care</td>
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<tr>
<td>HAP 746</td>
<td>Health Policy Leadership</td>
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or HAP 742 | Health Policy Development and Analysis |

<table>
<thead>
<tr>
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<tr>
<td>HAP 705</td>
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<td>HAP 704</td>
<td>Contemporary Issues in Health Systems Management</td>
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</tr>
<tr>
<td>HAP 790</td>
<td>Capstone Practicum in Health Systems Management</td>
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Total Credits 47

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>EAP 508</td>
<td>Graduate Communication in the Disciplines III</td>
<td>4</td>
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</table>

**Health and Social Policy Minor**

Banner Code: HSP

**Academic Advising**

Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/health-administration-and-policy-advisors

The minor in Health and Social Policy introduces students to the context and process for public policymaking in health care and social services. Students will examine the current environment for health and social policy, learn the basic elements of the public policymaking process, and apply this knowledge in a practical research endeavor. This minor is a joint program offered by the Department of Health Administration and Policy (p. 257) and the Department of Social Work (p. 279).

**Admissions & Policies**

**Policies**

Students should be familiar with university-wide requirements for minors described in AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

Students will take five (5) core courses and one (1) elective course in an area of health and social policy interest.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HAP 301</td>
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</tr>
<tr>
<td>HAP 312</td>
<td>Healthcare Law</td>
<td>3</td>
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<tr>
<td>HAP 312 or SOCW 400</td>
<td>Legal and Ethical Issues in Human Services</td>
<td>3</td>
</tr>
<tr>
<td>HAP 442</td>
<td>Introduction to Health Care Politics and Policy</td>
<td>3</td>
</tr>
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</table>
Senior Housing Administration Minor

Banner Code: SHA

Academic Advising

Website: chhs.gmu.edu/students/academic-advising/undergraduate-advising/health-administration-and-policy-advisors

The minor introduces students to the context and foundational knowledge required for administrative or managerial work within residential communities for older adults - including independent living, assisted living, Alzheimer’s/memory care, and continuing care retirement communities. Students will examine the current U.S. health care and senior housing environment, best practices in day-to-day management and marketing of senior housing communities, and have the opportunity to gain additional understanding of ethical, legal, and gerontological issues applicable to aging populations. Health Administration majors may pursue either the concentration in Senior Housing Administration or complete senior housing coursework to fulfill elective requirements for other concentrations in the degree.

Admissions & Policies

Admissions

The minor is available only to students outside of the Health Administration (p. 258) major.

Policies

At least 12 credits must be unique to the minor and cannot be used to fulfill the program of study requirements of the student’s major, concentration, undergraduate certificate, or another minor. Students should be familiar with university-wide requirements for minors described in AP5.3.4 Minors (p. 90).

Department of Nutrition and Food Studies

Phone: 703-993-4628
Website: nutrition.gmu.edu

Administration

- Lawrence Cheskin, Chair

The overarching mission of the Department of Nutrition and Food Studies (NUTR) is to inform students and the public about the role of food and nutrition in improving health and well-being among local and global populations through the integration of education, research, and outreach. The educational mission is to provide undergraduate and graduate degrees and certificates in food and nutrition-related studies. The research mission is to promote, develop and support research programs that help define and address food and nutritional issues. The outreach mission is to increase the awareness of food and nutrition-related issues among local and global communities, support local and global food and nutrition initiatives, and enhance collaboration among individuals and organizations to improve nutrition and health-related outcomes. Part-time students are encouraged to take at least 6 credits per semester to promote timely completion of the program.
Requirements & Policies

Requirements

Academic Advising

Each student is assigned an academic advisor who is a faculty member within their academic department or a professional academic advisor within the Office of Student Affairs (OSA). Academic advisor assignments are listed on the CHHS website (https://chhs.gmu.edu/students/academic-advising), and students are expected to meet with their advisor regularly (at least once each semester) to seek advice about academic schedules and program plans, internships, and career guidance. Students also should meet with their advisor if they are experiencing academic difficulty or personal challenges or if they are feeling overwhelmed.

All students are responsible for knowing the requirements of their major as specified in the university catalog for their catalog year; academic deadlines outlined in the semester academic calendar (http://registrar.gmu.edu/calendars); and university policies and procedures as stated in the catalog.

Students also should run their own degree-evaluation (http://registrar.gmu.edu/students/degree-evaluation) to identify graduation requirements and progress towards their degree. While academic advisors can give advice to students, students are responsible for the academic planning decisions they make. Academic advisors cannot be held responsible for mistakes made by students in selecting courses that may not count toward their degree and thus delay a desired graduation date.

Programs

• Food Systems Minor
• Nutrition Graduate Certificate
• Nutrition Minor
• Nutrition, MS

Food Systems Minor

Banner Code: FOOD

Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/nutrition-and-food-studies-advisor

This minor is designed to provide students from a range of disciplines with the knowledge and skills to understand how factors of the food system affect the health of a community (e.g., nutrition, food security, inequity, agriculture, food safety). Using a systems approach, students will study the interrelating components, drivers, and outcomes in the national and global food systems, including the obesity epidemic, food security, and the environmental impact of agriculture.

Admissions & Policies

Policies

To complete the minor, students are required to pass at least 15 credits of undergraduate coursework. At least 6 credits must be completed at Mason, and no more than 3 credits of C- or D in the minor are accepted.

Students should be familiar with university-wide requirements for minors described in AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: minimum 15

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 318</td>
<td>Global Nutrition and Food Security</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 326</td>
<td>Food Systems</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 383</td>
<td>Taste and Place</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>NUTR 312</td>
<td>Experimental Foods</td>
<td></td>
</tr>
<tr>
<td>&amp; NUTR 313</td>
<td>and Experimental Foods Lab</td>
<td></td>
</tr>
<tr>
<td>NUTR 410</td>
<td>Introduction to Food Safety and Defense</td>
<td></td>
</tr>
<tr>
<td>NUTR 315</td>
<td>Fundamentals of Cooking</td>
<td></td>
</tr>
<tr>
<td>NUTR 430</td>
<td>Introduction to Wine and Beer</td>
<td></td>
</tr>
<tr>
<td>NUTR 435</td>
<td>Urban Agriculture</td>
<td></td>
</tr>
<tr>
<td>ANTH 366</td>
<td>Food and Human Evolution</td>
<td></td>
</tr>
<tr>
<td>BIOL 385</td>
<td>Biotechnology and Genetic Engineering</td>
<td></td>
</tr>
<tr>
<td>EVPP 442</td>
<td>Urban Ecosystems and Processes</td>
<td></td>
</tr>
<tr>
<td>INTS 371</td>
<td>Food Systems and Policy (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>INTS 338</td>
<td>Animal Rights and Humane Education</td>
<td></td>
</tr>
<tr>
<td>INTS 370</td>
<td>Sustainable Food Systems</td>
<td></td>
</tr>
<tr>
<td>INTS 470</td>
<td>Professional Pathways in Sustainable Food Systems</td>
<td></td>
</tr>
<tr>
<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
<td></td>
</tr>
<tr>
<td>MBUS 303</td>
<td>Marketing in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>PHIL 243</td>
<td>Global Environmental Ethics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or PHIL 343</td>
<td>Topics in Environmental Philosophy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or PHIL 358</td>
<td>Ethics and Economics</td>
<td></td>
</tr>
</tbody>
</table>
## Nutrition Minor

**Banner Code:** NUTR

**Academic Advising**

Website: [https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/nutrition-and-food-studies-advisor](https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/nutrition-and-food-studies-advisor)

This minor is intended to increase knowledge of nutrition issues for students from all disciplines. Students pursuing degrees related to nutrition, health, and education may be interested in completing this minor.

Note: This minor is **not** equivalent to the registered dietitian license and does not provide a license to practice therapeutic nutrition.

### Policies

To complete the minor, students are required to pass at least 15 credits of undergraduate coursework. At least 6 credits must be completed at Mason, and no more than 3 credits of C- or D in the minor are accepted.

Students should be familiar with university-wide requirements for minors described in AP5.3.4 Minors (p. 90).

### Requirements

**Minor Requirements**

Total credits: minimum 15

Students are required to take an introductory nutrition course such as NUTR 295 Introduction to Nutrition (Mason Core) (p. 142) before beginning coursework in this minor.

#### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 420</td>
<td>Strategies for Nutrition Education ¹</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 421</td>
<td>Community Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 422</td>
<td>Nutrition throughout the Life Cycle</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 423</td>
<td>Nutrition and Chronic Illnesses</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

¹ NUTR 466 Nutrition and Weight Management: Obesity, Anorexia, and Bulimia can be used to substitute for either NUTR 420 or NUTR 421.

#### Elective

Select at least three credits from the following list:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 102</td>
<td>Chemistry for Changing Times (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>CHEM 463</td>
<td>General Biochemistry I</td>
<td></td>
</tr>
</tbody>
</table>

## Nutrition, MS

**Banner Code:** HH-MS-NUTR

**Academic Advising**

Website: [https://chhs.gmu.edu/students/academic-advising/graduate-advising#nfs](https://chhs.gmu.edu/students/academic-advising/graduate-advising#nfs)

The master’s program in nutrition emphasizes a skill-set tailored to expanding nutrition-related needs. Through coursework, students learn to assess, evaluate, and intervene in the most current and relevant nutrition issues. The curriculum prepares graduates to work for agencies, businesses, and organizations that seek to improve nutrition at the local, national, and global level. This program also prepares students to engage in further study for research careers in nutrition.

### Admissions & Policies

#### Admissions

**Requirements**

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Application for Graduate Admission [https://www2.gmu.edu/admissions-aid](https://www2.gmu.edu/admissions-aid). For application deadlines and detailed application requirements, refer to the CHHS Admissions website [https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines](https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

#### Policies

For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

### Transfer of Credit

Transfer credit is governed by university transfer of credit policy (p. 91) and the university requirements for master’s degrees (p. 94), and transfer credit must be approved by the program director and the dean. Students who enroll initially through non-degree studies should seek course advising through the department prior to taking a course and plan to submit their application to the MS in Nutrition program in their first semester of study.
Requirements

Degree Requirements
Total credits: 39

Nutrition Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 651</td>
<td>Nutrition Assessment, Monitoring and Surveillance</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 620</td>
<td>Nutrition Education</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 522</td>
<td>Nutrition Across the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 515</td>
<td>Fundamentals of Cooking</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 642</td>
<td>Macronutrients</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 644</td>
<td>Micronutrients</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 670</td>
<td>Nutrition Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 675</td>
<td>Nutrition Program Development, Interventions and Assessments</td>
<td>3</td>
</tr>
<tr>
<td>GCH 601</td>
<td>Introduction to Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>or HAP 602</td>
<td>Statistics in Health Services Management</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 583</td>
<td>Food and Culture ¹</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits ³0³3

¹ Required only for students who will complete the Practicum Option

Elective

All electives must be approved by advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 530</td>
<td>Introduction to Wine and Beer</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 630</td>
<td>Global Nutrition</td>
<td></td>
</tr>
<tr>
<td>ANTH 699</td>
<td>Contemporary Issues in Sociocultural Anthropology ¹</td>
<td></td>
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</tbody>
</table>

Nutrition Intervention, Programs, and Policy:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 566</td>
<td>Nutrition and Weight Management</td>
<td></td>
</tr>
<tr>
<td>NUTR 608</td>
<td>Perspectives on Food Security</td>
<td></td>
</tr>
<tr>
<td>NUTR 610</td>
<td>Food Safety and Defense</td>
<td></td>
</tr>
<tr>
<td>NUTR 611</td>
<td>Food and Nutrition Security Policy</td>
<td></td>
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</tbody>
</table>

Nutrition Research:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 752</td>
<td>Nutritional Epidemiology</td>
<td></td>
</tr>
<tr>
<td>GCH 804</td>
<td>Biostatistics for Public Health I</td>
<td></td>
</tr>
<tr>
<td>GCH 805</td>
<td>Biostatistics for Public Health II</td>
<td></td>
</tr>
<tr>
<td>HAP 719</td>
<td>Advanced Statistics in Health Services Research I</td>
<td></td>
</tr>
<tr>
<td>RHBS 710</td>
<td>Applied Physiology I</td>
<td></td>
</tr>
<tr>
<td>RHBS 711</td>
<td>Applied Physiology II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits ³

¹ ANTH 699 may be selected only when topic is focused on food and human evolution.

Capstone Experience

Students must complete either the Practicum or Thesis option.

Practicum Option

The practicum option entails a supervised practical application of previously studied theory through fieldwork. Students will be required to engage for a minimum of 200 contact hours per practicum in a nutrition-related organization under the guidance of a preceptor and a faculty advisor. Students must attend one seminar course, complete a project while working in the agency, and produce a formal report and presentation during the practicum. Students will enroll in the Pre-Practicum course the semester prior to conducting the practicum. In their final semester, students will enroll in the Nutrition Practicum.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 788</td>
<td>Pre-Practicum Seminar</td>
<td>0</td>
</tr>
<tr>
<td>NUTR 790</td>
<td>Nutrition Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits ³

Thesis Option

The thesis option is a research project incorporating an original design to test a theory and resulting in a final written thesis. The topic must fall within one of the areas of faculty expertise within the department, including: food science, food studies, global nutrition, public health nutrition, nutrition policy, nutrition assessment, and chronic disease and nutrition. Students may register for the thesis only with approval from their advisor and after they have completed at least 18 credits of the program.

Students in the master's thesis option are required to work with a committee of three faculty members. It is the responsibility of the student to form a committee at least 9 months before the desired graduation. The thesis director and at least one of the committee members must be members of the Department of Nutrition and Food Studies faculty, but the third member may or may not be from the Department. Students must take two thesis classes (6 credits total) while working on their thesis. Students must develop a proposal and have it approved by their committee and by the appropriate University committees, such as the Human Subjects Review Board, before undertaking the project. The thesis must conform to the format stated within Mason's University Libraries guidelines.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 799</td>
<td>Thesis Research</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Nutrition Graduate Certificate

Banner Code: HH-CERG-NUTR

Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#nfs

Available Concentrations

Students pursuing this graduate certificate may choose from one of the following concentrations:
This certificate qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Nutrition_CERG/Gedt.html).

Concentration in Community Nutrition
This graduate certificate with a concentration in community nutrition prepares students to apply nutrition principles and the latest scientific evidence and methods of nutrition to health practice and research among different populations. The program emphasizes understanding the role of nutrition in population health and well-being and the development of skills required in the practice, analysis, and interpretation of nutrition-related information and data among individuals and populations. Students will acquire competencies in the following areas:

• public health nutrition framework
• nutritional assessment and monitoring
• research design and methodology
• planning and evaluation of nutrition programs

Concentration in Food Security
The graduate certificate with a concentration in food security provides knowledge and tools in the areas of nutrition, food studies, geography, and geoinformation science to prepare students for careers in food security and safety. The program includes courses in nutrition, food security, food safety, and GIS and remote sensing, and the program will give students insight into the determinants of food security in developing and industrialized countries, the roots of vulnerabilities of populations most at-risk, and programs involved in food security research and interventions worldwide.

Admissions & Policies

Admissions
Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). The application process is competitive, and applications are considered for the fall and spring semesters. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (http://chhs.gmu.edu/admissions/graduate/deadlines.cfm).

Concentration in Community Nutrition
Previous undergraduate coursework in natural sciences, nursing, health science, and sociology is helpful.

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Concentration in Community Nutrition
A maximum of 3 credits in equivalent coursework taken at another college or university can be applied toward the certificate.

Certificate Requirements
Total credits: 18

To earn the certificate, students must complete all requirements listed within a concentration and earn a minimum GPA of 3.00 in the 18 credits of graduate coursework, with no more than 3 credits with a grade of C.

Concentration in Community Nutrition (CMNT)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 630</td>
<td>Global Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 566</td>
<td>Nutrition and Weight Management</td>
<td>3</td>
</tr>
<tr>
<td>GCH 712</td>
<td>Introduction to Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 651</td>
<td>Nutrition Assessment, Monitoring and Surveillance</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives
Select two from the following:

GCH 610 Health Behavior Theory
GCH 611 Health Program Planning and Evaluation
GCH 752 Nutritional Epidemiology
NUTR 583 Food and Culture

Total Credits 18

Concentration in Food Security (FSEC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 608</td>
<td>Perspectives on Food Security</td>
<td>3</td>
</tr>
<tr>
<td>or BIOD 726</td>
<td>Food Security</td>
<td></td>
</tr>
<tr>
<td>NUTR 610</td>
<td>Food Safety and Defense</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 626</td>
<td>Food Systems</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 630</td>
<td>Global Nutrition</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective
Select six credits from the following:

GCH 560 Environmental Health
GGS 553 Geographic Information Systems
GGS 579 Remote Sensing
GGS 581 World Food and Population
NUTR 611 Food and Nutrition Security Policy
NUTR 651 Nutrition Assessment, Monitoring and Surveillance

or other approved elective course

Total Credits 18

Department of Rehabilitation Science
Phone: 703-993-1950
Website: rehabscience.gmu.edu
Rehabilitation Science is an interdisciplinary field of study that seeks to understand the relationships among chronic illness, function, and disability and to improve the quality of life for those individuals who live with a chronic condition. This field draws its body of knowledge from multiple disciplines spanning the physiological, health, and social sciences in order to approach the individual who lives with or is at risk of disability as a complete person with a full appreciation of the biopsychosocial environment in which that person functions.

The internationally recognized faculty mentor students through active involvement in their own funded research programs. Upon graduation, students are prepared for professional careers in academic, government, health care, and industrial environments. Part-time students within the PhD program are encouraged to take at least 6 credits per semester to promote timely completion of the program.

Rehabilitation Science is the field of study which integrates the knowledge related to restoring the functional capacity of a person to perform the activities of everyday life and the interaction of that person with the surrounding environment that either disables or enables the individual to participate fully in society. This knowledge is then translated into interventions aimed at improving human performance and quality of life.

This program, the first of its kind in the Commonwealth of Virginia, offers students a rigorous science-based educational foundation for rehabilitation-related careers upon graduation as well as a clear and distinctive pathway for admission to graduate programs that prepare rehabilitation clinicians and academic scientists.
Information Technology
Any Mason Core Information Technology course (p. 143) 3-7

Arts
Any Mason Core Arts course (p. 144) 3

Global Understanding
Any Mason Core Global Understanding course (p. 146) 3

Literature
Any Mason Core Literature course (p. 147) 3

Natural Science
CHEM 211 General Chemistry I (Mason Core) (p. 142) 3
CHEM 213 General Chemistry Laboratory I (Mason Core) (p. 142) 1
CHEM 212 General Chemistry II (Mason Core) (p. 142) 3
CHEM 214 General Chemistry Laboratory II (Mason Core) (p. 142) 1
PHYS 243 College Physics I (Mason Core) (p. 142) 3
PHYS 244 College Physics I Lab (Mason Core) (p. 142) 1
PHYS 245 College Physics II (Mason Core) (p. 142) 3
PHYS 246 College Physics II Lab (Mason Core) (p. 142) 1

Social and Behavioral Sciences
Any Mason Core Social and Behavioral Sciences course (p. 150) 3

Western Civilization/Western History
Any Mason Core Western Civilization course (p. 151) 3

Total Credits 46-50

1 Rehabilitation Science students must complete all 16 credits. The Mason Core Natural Science requirement will be fulfilled with 7 credits from the list.

Core Rehabilitation Science Requirements
Code Title Credits
RHBS 201 Introduction to Rehabilitation Science 3
RHBS 270 Applied Human Anatomy and Physiology I 4
RHBS 271 Applied Human Anatomy and Physiology II 4
RHBS 350 Clinical Physiology and Human Performance 3
RHBS 375 Gait and Functional Movement Analysis 3
RHBS 390 Clinical Assessment of Functional Capacity 3
RHBS 415 Clinical Movement Science I 3
RHBS 450 Psychosocial Adaptation in Rehabilitation 3
KINE 380 Exercise Prescription and Programming for Special Populations 3
RHBS 455 Research in Rehabilitation Science (Mason Core) (p. 142) 3

Total Credits 32

Restricted In-Major Electives
Code Title Credits
Complete 9 credits from the following: 9
RHBS 340 Health, Disease and Dysfunction
RHBS 345 Applied Biomechanics in Rehabilitation
RHBS 380 Neural Basis of Movement
RHBS 410 Physical Activity and Public Health
RHBS 416 Clinical Movement Science II
RHBS 418 Exercise Endocrinology
RHBS 420 Adult Health and Function
RHBS 430 Advanced Functional Clinical Assessments
RHBS 489 Introduction to Clinical Research
RHBS 490 RS: Clinical Research Internship
RHBS 491 Directed Research
Or advisor-approved elective course

Total Credits 9

General Electives
Code Title Credits
Complete 29-33 credits of General Electives 29-33

Rehabilitation Science Minor
Banner Code: RHBS

Academic Advising
Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/rehabilitation-science-advisors

This minor is an innovative sequence of courses designed to enhance the undergraduate student’s academic preparation for clinical and research graduate programs. Designed for students interested in graduate study in physical therapy, occupational therapy, physician assistant programs, exercise physiology, and biomechanics; the minor provides a foundation of knowledge on the science of human movement as it pertains to both health and human performance.

Admissions & Policies

Admissions
Students must have completed at least 30 credits of undergraduate coursework in order to enroll in the minor.

Policies
Students should be familiar with university-wide requirements for minors described in AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 17
Students must earn a C- or better in each course of the 17-credit curriculum to successfully complete the minor.

### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHBS 270</td>
<td>Applied Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>RHBS 271</td>
<td>Applied Human Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>RHBS 350</td>
<td>Clinical Physiology and Human Performance</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 415</td>
<td>Clinical Movement Science I</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RHBS 201</td>
<td>Introduction to Rehabilitation Science</td>
<td></td>
</tr>
<tr>
<td>RHBS 340</td>
<td>Health, Disease and Dysfunction</td>
<td></td>
</tr>
<tr>
<td>RHBS 345</td>
<td>Applied Biomechanics in Rehabilitation</td>
<td></td>
</tr>
<tr>
<td>RHBS 375</td>
<td>Gait and Functional Movement Analysis</td>
<td></td>
</tr>
<tr>
<td>RHBS 380</td>
<td>Neural Basis of Movement</td>
<td></td>
</tr>
<tr>
<td>RHBS 390</td>
<td>Clinical Assessment of Functional Capacity</td>
<td></td>
</tr>
<tr>
<td>RHBS 410</td>
<td>Physical Activity and Public Health</td>
<td></td>
</tr>
<tr>
<td>RHBS 416</td>
<td>Clinical Movement Science II</td>
<td></td>
</tr>
<tr>
<td>RHBS 418</td>
<td>Exercise Endocrinology</td>
<td></td>
</tr>
<tr>
<td>RHBS 420</td>
<td>Adult Health and Function</td>
<td></td>
</tr>
<tr>
<td>RHBS 430</td>
<td>Advanced Functional Clinical Assessments</td>
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</tr>
<tr>
<td>RHBS 450</td>
<td>Psychosocial Adaptation in Rehabilitation</td>
<td></td>
</tr>
<tr>
<td>RHBS 455</td>
<td>Research in Rehabilitation Science (Mason Core)</td>
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<td>RHBS 491</td>
<td>Directed Research</td>
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<tr>
<td>Total Credits</td>
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<td>17</td>
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</tbody>
</table>

### Rehabilitation Science Graduate Certificate

**Banner Code:** HH-CERG-RHBS

**Academic Advising**

Website: https://rehabscience.gmu.edu/program/view/19946

This graduate certificate prepares students to apply research and statistical techniques to the study of the enabling–disabling process. The Institute of Medicine defines rehabilitation science as a field of study that encompasses basic and applied aspects of the health sciences, social sciences, and engineering. It is the melding of knowledge from several disciplines to understand the fundamental nature of the enabling–disabling process.

Students will acquire competencies in the following areas:

- rehabilitation and recovery framework
- research design and methodology
- statistics
- conduct of applied rehabilitation research

The department hosts information sessions on a regular basis for those interested in our academic programs. Visit the College of Health and Human Services website (http://chhs.gmu.edu) for details.

### Admissions & Policies

#### Admissions

Admission to this certificate requires a bachelor’s degree in a discipline related to health sciences from an accredited institution of higher education with a minimum GPA of 3.00 in the last 60 credits. Such fields include, but are not limited to:

- health science
- biostatistics
- biology
- nursing
- medicine
- physical therapy
- occupational therapy
- physiatry
- engineering
- psychology

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). Applications are considered for the fall semester only. The application process is competitive. For application deadlines and detailed application requirements please refer to the CHHS Admissions website (http://chhs.gmu.edu/admissions/graduate/deadlines.cfm). Late applications will be considered on a space-available basis.

#### Policies

A maximum of 3 credits in equivalent coursework taken at another college or university may be applied toward the certificate.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

### Requirements

#### Certificate Requirements

Total credits: 15

This certificate may be pursued on a full-or part-time basis.

To earn the certificate, students must earn a minimum GPA of 3.00 in the 15 credits of coursework outlined below, with no more than 3 credits with a grade of C.

#### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHBS 650</td>
<td>Foundations of Rehabilitation Science</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 710</td>
<td>Applied Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 711</td>
<td>Applied Physiology II</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>
Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHBS 606</td>
<td>Clinical Exercise Physiology</td>
<td>6</td>
</tr>
<tr>
<td>RHBS 620</td>
<td>Psychosocial Aspects of Rehabilitation</td>
<td></td>
</tr>
<tr>
<td>RHBS 651</td>
<td>Research Design and Methods I</td>
<td></td>
</tr>
<tr>
<td>RHBS 652</td>
<td>Research Design and Methods II</td>
<td></td>
</tr>
<tr>
<td>RHBS 706</td>
<td>Clinical Assessment of Fatigability</td>
<td></td>
</tr>
<tr>
<td>RHBS 720</td>
<td>Principles of Clinical Trials</td>
<td></td>
</tr>
<tr>
<td>RHBS 740</td>
<td>Applied Physiology: Cardiorespiratory</td>
<td></td>
</tr>
<tr>
<td>RHBS 745</td>
<td>Metabolic Basis of Disability</td>
<td></td>
</tr>
<tr>
<td>RHBS 746</td>
<td>Movement Control and Learning</td>
<td></td>
</tr>
<tr>
<td>RHBS 750</td>
<td>Physiology of Clinical Exercise Interventions</td>
<td></td>
</tr>
<tr>
<td>RHBS 754</td>
<td>Movement Disorders: Etiology, Assessment, and Analyses</td>
<td></td>
</tr>
<tr>
<td>RHBS 816</td>
<td>Rehabilitation Efficacy and Effectiveness Research</td>
<td></td>
</tr>
</tbody>
</table>

Other courses taken with prior approval of the department

Total Credits 6

Rehabilitation Science, PhD

Banner Code: HH-PHD-RHBS

Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#rhbs

This interdisciplinary program educates students to understand the causes, course, and consequences of disability, and to perform integrated research on how to optimize human function and performance in daily life. This program prepares students in basic and translational science that address mechanisms, prevention and amelioration of disability. The objective of the program is to develop researchers and academics who, through their scholarship and original research, create new knowledge in rehabilitation science. Graduates of this program are prepared for professional careers in academic, governmental, and industrial research environments.

Admissions & Policies

Admissions

Admission Requirements

Applicants must hold a bachelor’s degree from a regionally accredited institution and have a minimum of a 3.0 GPA to be considered. Admission to the program is competitive, and a variety of criteria are evaluated in the admissions process, including the strength of the undergraduate record and any post-baccalaureate coursework, GRE scores, career goals statement, letters of recommendation, professional and/or volunteer experience, evidence of the ability to write and conduct research at the graduate level, and any additional evidence of potential success in the program. Applicants are encouraged to contact the department faculty prior to applying to discuss their interest. Preference will be given to full-time applicants, and interviews may be required by the faculty admissions committee. Information regarding CHHS application guidelines and requirements can be found online (https://chhs.gmu.edu/admissions/graduate-admissions). Meeting the minimum application criteria does not guarantee admission.

Applications are considered for the fall semester only. For application deadlines and detailed application requirements, please refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines). Late applications will be considered on a space-available basis. The online Application for Graduate Admissions can be found through the Office of Admissions (http://admissions.gmu.edu).

Policies

Transfer of Credit

Transfer credit is governed by AP.6.5.3 Transfer of Credit Policy (p. 92), AP.6.10 Requirements for Doctoral Degrees (p. 96), and must be approved by the program director and the dean. Students who enroll initially through non-degree studies should seek course advising through the department prior to taking a course and must submit their application to the PhD program in their first semester of study.

Reduction of Credit

Students must complete a minimum of 72 graduate credits. A maximum of 30 credits may be waived in the PhD program based on a previously earned graduate degree. Credit for prior graduate course work will be reviewed and awarded on a course-by-course basis.

Time Requirements

Students must complete all requirements for the PhD in Rehabilitation Science within 9 calendar years from the time of first enrollment as a doctoral student in the program or with provisional status. PhD students are expected to progress steadily toward their degree and to complete all course work and the written exam in order to advance to candidacy within no more than 6 years.

Program Requirements

To complete the PhD in Rehabilitation Science, students must:

- Complete the program of study outlined in the PhD curriculum.
- Pass the written comprehensive exam and the oral examination in the area of specialization. After successful completion of the written comprehensive examination and the oral examination in the area of specialization, the student will be advanced to candidacy and may seek approval of a dissertation proposal.
- Pass the final oral dissertation defense and submit a doctoral dissertation approved by the doctoral dissertation committee and the Chair of the Department of Rehabilitation Science (the dissertation must be submitted in the approved format of the doctoral program).
- Complete application material for graduation in accordance with prevailing university policies.

Requirements

Degree Requirements

Total credits: 72

The PhD in Rehabilitation Science program consists of the following categories of courses:
George Mason University

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Courses</strong></td>
<td>30</td>
</tr>
<tr>
<td></td>
<td><strong>Specialization Courses</strong></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td><strong>Electives</strong></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td><strong>Dissertation Preparation and Completion Courses</strong></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>72</td>
</tr>
</tbody>
</table>

**Foundational Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHBS 606</td>
<td>Clinical Exercise Physiology</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 620</td>
<td>Psychosocial Aspects of Rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 650</td>
<td>Foundations of Rehabilitation Science</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 651</td>
<td>Research Design and Methods I</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 652</td>
<td>Research Design and Methods II</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 710</td>
<td>Applied Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 711</td>
<td>Applied Physiology II</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 720</td>
<td>Principles of Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 746</td>
<td>Movement Control and Learning</td>
<td>3</td>
</tr>
<tr>
<td>RHBS 816</td>
<td>Rehabilitation Efficacy and Effectiveness Research</td>
<td>3</td>
</tr>
</tbody>
</table>

|        | **Total Credits**                                | 30      |

**Specialization Courses**

Specializations include:

- Human Movement and Function
- Clinical Exercise and Applied Physiology

Students select courses with the approval of their advisors. At least 9 credits must be taken in RHBS courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Complete 15 credits of specialization courses</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

Specialization courses offered through the department are:

- RHBS 706 Clinical Assessment of Fatigability
- RHBS 740 Applied Physiology: Cardiorespiratory
- RHBS 745 Metabolic Basis of Disability
- RHBS 750 Physiology of Clinical Exercise Interventions
- RHBS 754 Movement Disorders: Etiology, Assessment, and Analyses
- RHBS 772 Applied Biomechanics in Rehabilitation
- RHBS 776 Movement Analysis of Function
- RHBS 850 Teaching Practicum

**Electives**

Students will complete 15 hours of elective course work, in consultation with their advisors. Electives can be a combination of additional RHBS credits and approved courses from other programs.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

**Dissertation Preparation and Completion Courses**

Candidates must complete a minimum of 12 credits combined of doctoral proposal (RHBS 998) and doctoral dissertation research (RHBS 999). Initial enrollment in RHBS 998 requires three hours (afterwards only one hour is required until enrollment in RHBS 999) while three hours of RHBS 999 is required each semester until the minimum 12 hours of dissertation credit is completed.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Complete at least 12 credits of the following</strong></td>
<td>12</td>
</tr>
<tr>
<td>RHBS 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>RHBS 999</td>
<td>Dissertation Research</td>
<td></td>
</tr>
</tbody>
</table>

**Department of Social Work**

Phone: 703-993-4247
Website: socialwork.gmu.edu

**Administration**

- Emily Ihara, Interim Chair

**Undergraduate**

The mission of the BSW Program is to prepare entry-level generalist social work professionals who will demonstrate ethical leadership in innovative multidisciplinary practice, social reform, and research in diverse communities. Students are provided a range of opportunities to develop a broad knowledge and skills base consistent with the systems and strengths perspectives. They are expected to practice using core social work values and to examine and resolve ethical dilemmas. Classroom and field experiences prepare students to be competent in the use of relevant new technologies and in culturally sensitive, generalist social work practice.

**Graduate**

The MSW Program seeks to prepare social workers for advanced professional practice who are innovative leaders bringing superior management, interpersonal, technological, research, and communication skills to the human service delivery system. Through a specialization in either social change or clinical practice, graduates will be prepared to empower individuals, strengthen families and communities, stimulate positive change through advocacy and social and political action, and help meet local, national, and global challenges. The MSW Program builds upon a foundation of generalist social work knowledge and skills that integrates micro and macro theory and practice and emphasizes empowerment and systems transformation. This foundation equips students to enhance human well-being and to promote social and economic justice through ethical professional practice with culturally diverse individuals, families, groups, organizations, and communities.

**Field Placement**

The Department of Social Work will make reasonable efforts to work with a student to secure an appropriate field placement, but it does not guarantee a placement. A student with a criminal history may find it difficult to obtain a field placement or employment in a human service agency depending on the specific charge. It is possible that a student with a criminal background may not be able to be placed in a field practicum or complete their degree program. The Criminal Background Policy is available on the Social Work Department website. (https://socialwork.gmu.edu)
Program Completion
Part-time students are encouraged to take at least 6 credits per semester to promote timely completion of the program.

Faculty

Department Faculty

Professors
Ritchie, Rome, Rose, Wolf-Branigin

Associate Professors
Cleaveland, Davis, Delany, Ihara (interim chair), Kirsch, Lee, Matto, Tompkins (associate dean for faculty affairs)

Assistant Professors
Inoue, Waithaka

Instructors
Cuffee, Prudden

Administrative Faculty
Cornejo, Dugger

Emeriti
Raskin, Whittington

Requirements & Policies

Policies

Academic Advising
Each student is assigned an academic advisor who is a faculty member within their academic department or a professional academic advisor within the Office of Student Affairs (OSA). Academic advisor assignments are listed on the CHHS website (https://chhs.gmu.edu/students/academic-advising), and students are expected to meet with their advisor regularly (at least once each semester) to seek advice about academic schedules and program plans, internships, and career guidance. Students also should meet with their advisor if they are experiencing academic difficulty or personal challenges or if they are feeling overwhelmed.

All students are responsible for knowing the requirements of their major as specified in the university catalog for their catalog year; academic deadlines outlined in the semester academic calendar (http://registrar.gmu.edu/calendars); and university policies and procedures (p. 77).

Students also should run their own degree-evaluation (http://registrar.gmu.edu/students/degree-evaluation) to identify graduation requirements and progress towards their degree. While academic advisors can give advice to students, students are responsible for the academic planning decisions they make. Academic advisors cannot be held responsible for mistakes made by students in selecting courses that may not count toward their degree and thus delay a desired graduation date.

Programs

- Aging Studies Minor
- Gerontology Graduate Certificate
- Health and Social Policy Minor
- Social Work Minor
- Social Work, BSW
- Social Work, MSW

Aging Studies Minor

Banner Code: AGES

Academic Advising
Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/social-work-advisors

This minor combines theoretical and applied coursework in aging with the student’s undergraduate curriculum in any department of the university. Because aging studies is by definition multidisciplinary, students are required to take coursework outside their major field.

Admissions & Policies

Policies
Students should be familiar with university-wide requirements for minors described in AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 435</td>
<td>Introduction to Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>HHS 432</td>
<td>Healthy Aging</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td>3</td>
</tr>
<tr>
<td>HHS 480</td>
<td>Research Internship in Health and Human Services</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Elective

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCH 480</td>
<td>Health Maintenance and Health Aspects of Aging</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 418</td>
<td>Death, Dying, and Grieving</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other aging-related course as approved by the program coordinator</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3
Gerontology Graduate Certificate

Banner Code: HH-CERG-GERO

Academic Advising
Website: masononline.gmu.edu/programs/gerontology-graduate-certificate/

This graduate certificate combines theoretical and applied coursework in aging with the student's graduate curriculum in any department. Because gerontology is by definition multidisciplinary, students are required to take coursework outside their major field.

Admissions & Policies

Admissions
Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). The application process is competitive, and applications are considered for the fall and spring semesters. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (http://chhs.gmu.edu/admissions/graduate/graduate-deadlines.cfm).

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements
Total credits: 15

This certificate may be pursued on a full- or part-time basis.

To earn the certificate, students must earn a minimum GPA of 3.00 in the 15 credits of coursework outlined below, with no more than 3 credits with a grade of C.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHS 646</td>
<td>Social Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 689</td>
<td>Clinical Practice with Older Adults</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 655</td>
<td>Aging Programs and Policies</td>
<td>3</td>
</tr>
<tr>
<td>HHS 648</td>
<td>Aging and Health</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits
12

Elective

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOCW 655</td>
<td>Aging Programs and Policies</td>
<td></td>
</tr>
<tr>
<td>PSYC 614</td>
<td>The Psychology of Aging</td>
<td></td>
</tr>
</tbody>
</table>

Social Work, BSW

Banner Code: HH-BSW-SOCW

Academic Advising
Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/social-work-advisors

This program prepares students for beginning generalist professional practice in social work at the baccalaureate level and has been granted full accreditation by the Council on Social Work Education. All students are expected to abide by the Code of Ethics of the National Association of Social Workers.

No academic credit toward field experience or coursework is given based on previous work or life experience. Students are required to successfully complete 450 hours of supervised field practicum in agencies approved by the Department of Social Work. The Department of Social Work will make reasonable efforts to work with a student to secure an appropriate field placement, but it does not guarantee a placement. The social work program does not offer all of the required courses during the evening hours, so students should meet with their academic advisor to develop a plan to complete coursework for the degree. Field placements generally require availability during regular daytime hours.

Admissions & Policies

Admissions

Admission Requirements
To be admitted to the social work program, a student must have
1. completed at least 45 credits with a GPA of 2.50 or higher;
2. completed or been registered in:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 101</td>
<td>Introductory Sociology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

3. earned at least a C in:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 200</td>
<td>Introduction to Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 357</td>
<td>Methods of Social Work Intervention I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 361</td>
<td>Methods of Social Work Intervention I: Laboratory</td>
<td>3</td>
</tr>
</tbody>
</table>

And at least two of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 311</td>
<td>Building Professional Social Work Skills</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 312</td>
<td>Knowledge Building for Helping Professionals</td>
<td>3</td>
</tr>
</tbody>
</table>
4. be enrolled in all other required 300-level SOCW courses; and
5. submitted an application for the social work major and the senior field practicum by the deadline stated on the BSW admissions website (https://socialwork.gmu.edu/admissions/undergraduate-admissions).

The student's application for admission to the social work major is reviewed for action by social work faculty members. A personal interview may be required.

There is no admission to the social work program in the summer. Students who have not met all criteria for admission to the major will not be considered for admission until the next academic year.

**Policies**

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

**Program Requirements**

To earn a bachelor’s degree in social work, students must earn a grade of C or above in all Social Work classes applied to the major and must achieve a GPA of 2.50 overall. Class attendance is required in all Social Work courses. Before beginning SOCW 495 Field Practicum and Seminar I, students must successfully complete all required 200- and 300-level courses with a grade of C or above.

The Social Work faculty evaluates student performance periodically and may require students to withdraw from the program when, in their judgment, performance is not satisfactory. The decision is based on the quality of academic and field performance, as well as on personal fitness for the profession of social work. Students have the right to appeal.

A student with a criminal history may find it difficult to obtain a field placement or employment in a human service agency depending on the specific charge. It is possible that a student with a criminal background may not be able to be placed in a field practicum or complete their degree program. The Criminal Background Policy is available on the Social Work Department website (https://socialwork.gmu.edu).

**Immunization and Fees**

All students who are enrolled in a course that requires a field placement (SOCW 495 Field Practicum and Seminar I and SOCW 496 Field Practicum and Seminar II) must have an annual tuberculosis screening (PPD). In addition, students must complete the entire hepatitis B immunization series in accordance with current U.S. Public Health Service recommendations. The cost of immunizations is the responsibility of the student. The majority of agencies used for field placements require fingerprinting, a criminal background check (may be more extensive than the university requirement), and a child protective services check. Any cost related to these requirements is the responsibility of the student.

**Writing Intensive Requirement**

The university requires all students to complete at least one course designated “writing intensive” in the 300 level or above. Students majoring in social work fulfill this requirement by successfully completing SOCW 471 Research in Social Work.

**Degree Requirements**

Total credits: 120

### Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core)</td>
<td>3 (p. 142)</td>
</tr>
<tr>
<td></td>
<td>Oral Communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any Mason Core Oral Communication course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Any Mason Core Quantitative Reasoning course</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any Mason Core Information Technology course</td>
<td>3-7</td>
</tr>
<tr>
<td></td>
<td>Literature</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any Mason Core Literature course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Any Mason Core Arts course</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Natural Science</td>
<td></td>
</tr>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>One 3 or 4 credit approved Mason Core Natural Science course</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>Western Civilization</td>
<td></td>
</tr>
<tr>
<td>HIST 100</td>
<td>History of Western Civilization (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 125</td>
<td>Introduction to World History (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td></td>
<td>Global Understanding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any Mason Core Global Understanding course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>34-39</td>
</tr>
</tbody>
</table>

### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 101</td>
<td>Introductory Sociology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Statistics</td>
<td></td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>SOCI 313</td>
<td>Statistics for the Behavioral Sciences (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 300</td>
<td>Statistics in Psychology</td>
<td></td>
</tr>
</tbody>
</table>
This minor requires 15 credits and provides students with conceptual, theoretical, and practical knowledge related to the field of social work at the individual, family, group, community, and societal levels.

Note: Social work practice courses and internship experiences are only open to social work majors.

**Admissions & Policies**

**Policies**

Students should be familiar with university-wide requirements for minors described in AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 15

All courses for the minor must be completed with a minimum GPA of 2.00.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 200</td>
<td>Introduction to Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 375</td>
<td>Human Behavior and the Family Life Course (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 380</td>
<td>Changing Social Policies and Systems</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 471</td>
<td>Research in Social Work (fulfills writing intensive requirement)</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 472</td>
<td>RS: Integrative Methods in Social Action and Social Change (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 495</td>
<td>Field Practicum and Seminar I</td>
<td>5</td>
</tr>
<tr>
<td>SOCW 496</td>
<td>Field Practicum and Seminar II</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>43</strong></td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 32-34 credits of electives ¹</td>
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<td>32-34</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>32-34</strong></td>
</tr>
</tbody>
</table>

¹ Six credits must be in social work (p. 2157) at the 400- or 500-level, not including courses listed above; SOCW 499 Independent Study in Social Work may be used to satisfy an additional 1 to 3 credits toward general electives.

**Notes**

SOCW 357 Methods of Social Work Intervention I and SOCW 361 Methods of Social Work Intervention I: Laboratory (only offered in the fall semester) are prerequisites to SOCW 358 Methods of Social Work Intervention II and SOCW 362 Methods of Social Work Intervention II: Laboratory (only offered in the spring semester). Graduation may be delayed if courses are not taken in proper sequence.

Selected Social Work electives are offered each semester on a rotating basis.

**Social Work Minor**

**Banner Code: SOCW**

**Academic Advising**

Website: chhs.gmu.edu/students/academic-advising/undergraduate-advising/social-work-advisors

**Note:**

The following courses are not open to students enrolled in this minor. See an advisor in the social work program for more information.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 311</td>
<td>Building Professional Social Work Skills</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 357</td>
<td>Methods of Social Work Intervention I</td>
<td>3</td>
</tr>
</tbody>
</table>

This minor requires 15 credits and provides students with conceptual, theoretical, and practical knowledge related to the field of social work at the individual, family, group, community, and societal levels.

Note: Social work practice courses and internship experiences are only open to social work majors.

**Admissions & Policies**

**Policies**

Students should be familiar with university-wide requirements for minors described in AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 15

All courses for the minor must be completed with a minimum GPA of 2.00.

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<td></td>
<td><strong>43</strong></td>
</tr>
</tbody>
</table>

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<td></td>
<td><strong>32-34</strong></td>
</tr>
</tbody>
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**Notes**

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**Social Work Minor**

**Banner Code: SOCW**

**Academic Advising**

Website: chhs.gmu.edu/students/academic-advising/undergraduate-advising/social-work-advisors

**Note:**

The following courses are not open to students enrolled in this minor. See an advisor in the social work program for more information.

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<tr>
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</thead>
<tbody>
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</tr>
<tr>
<td>SOCW 357</td>
<td>Methods of Social Work Intervention I</td>
<td>3</td>
</tr>
</tbody>
</table>
SOCW 358 Methods of Social Work Intervention II 3
SOCW 361 Methods of Social Work Intervention I: Laboratory 2
SOCW 362 Methods of Social Work Intervention II: Laboratory 2
SOCW 471 Research in Social Work 3
SOCW 472 RS: Integrative Methods in Social Action and Social Change (Mason Core) (p. 142) 3
SOCW 495 Field Practicum and Seminar I 5
SOCW 496 Field Practicum and Seminar II 5

Social Work, MSW

Banner Code: HH-MSW-SOCW

Academic Advising
Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#sw

This program opened its doors in fall 2002 and was fully accredited by the Council on Social Work Education in spring 2006. The MSW program prepares students for advanced practice in social work. Following completion of a generalist year of study, students complete a specialized concentration in social change or clinical practice. All social work students are expected to abide by the Code of Ethics of the National Association of Social Workers. No academic credit toward field experience or coursework is given based on previous work or life experience.

The MSW degree is offered via a regular on-campus or premium priced all-online delivery format. The curriculum in both programs is the same, but students must matriculate through only one pathway. Separate application processes are used for online and on-campus programs. On-campus students can complete their degree in a two-, three-, or four-year plan of study. On-campus MSW courses are offered during the day and evening hours. Students must be available morning, afternoon, and evening two specific days a week to attend classes. All courses are sequenced and must be taken in the order designated. Students should meet with their academic advisor to ensure timely completion of all degree requirements. The online premium-priced program is offered in a flexible 8-week schedule format, and courses are taken in a prescribed sequence, one at a time, except during semesters when students are in their field practicum. In both program options, students are required to successfully complete 1,050 hours of supervised field practicum in agencies approved by the Department of Social Work: 450 hours during the generalist year and 600 hours during the specialized practice year. Field placements generally require availability during regular daytime hours. The Department of Social Work will make reasonable efforts to work with a student to secure an appropriate field placement, but it does not guarantee a placement.

Admissions & Policies

Admissions
Requirements
Applicants must meet the admission standards and application requirements specified in the Admissions (p. 68) and apply using the online Application for Graduate Admission (http://admissions.gmu.edu).

The application process is competitive, and applications are considered for the fall semester only. In addition to holding an undergraduate degree from a regionally accredited college or university, applicants must have a minimum of 30 undergraduate credits in the liberal arts to include at least 3 credits in each of the following: English composition, history or government, social sciences, and statistics. For application deadlines and detailed application requirements, please refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

Requirements for MSW students with Advanced Standing
Students with a BSW degree who demonstrate superior academic achievement and excellence in social work practice will be considered for advanced standing. Advanced standing students begin the MSW Program in the summer and upon successfully completing SOCW 600, move directly into the specialization year. Advanced standing students must successfully complete 600 hours of supervised field practicum in agencies approved by the Department of Social Work.

All other academic policies for the advanced standing program are identical to those for the regular MSW Program.

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). The application process is competitive, and applications are considered for the fall admissions cycle only, with advanced standing students beginning courses in the summer. In addition to holding a BSW in Social Work earned within the past five years from a program accredited by the Council on Social Work Education, applicants must have a minimum of 30 undergraduate credits in the liberal arts to include at least 3 credits in each of the following: English composition, history or government, social sciences, and statistics. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

To graduate with the MSW degree, advanced standing students must successfully complete the generalist course (SOCW 600) in the summer prior to beginning the specialization curriculum and complete the courses for one specialization.

Policies
Transfer of Credit
Students who began MSW programs at another CSWE-accredited MSW program may transfer a maximum of 29 graduate credits into the MSW program, with the exception of SOCW 600 Foundations of Social Work and Social Welfare (3 credits) and the specialization curriculum courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 630</td>
<td>Forensic Social Work Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 640</td>
<td>Advanced Clinical Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 645</td>
<td>Community-Centered Clinical Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 674</td>
<td>Psychopathology</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 684</td>
<td>Social Work and the Law</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 685</td>
<td>Organizational Leadership for Social Workers</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 687</td>
<td>Empowering Communities for Change</td>
<td>3</td>
</tr>
</tbody>
</table>
Transfer credit is subject to university and college policies and must be approved by the program director and the dean. Students must note on the MSW Departmental Form and MSW Application Checklist that they are applying as transfer students.

**Non-Degree Students**

Admission to the MSW program is offered once a year for the fall semester only. Non-degree students may apply through the Office of Admissions (http://admissions.gmu.edu/nonDegree) and be admitted in the fall and spring and, as space allows, enroll in classes as appropriate. Please contact the program director for more information.

**Program Requirements**

Students must earn a grade of B- or above in each course and must achieve a GPA of 3.0 over all courses applied to the degree. A prerequisite must be satisfied with a B- or better before registering for the next course in a sequence. A course in which the student earns a C may be repeated once. No more than 6 total credits of C may be repeated overall.

Social work faculty members evaluate each student’s performance periodically and may terminate the student from the program when, in their judgment, performance is not satisfactory. The decision is based on the quality of academic and field performance, as well as on personal fitness for the profession of social work. The student has the right to appeal.

A student with a criminal history may find it difficult to obtain a field placement or employment in a human service agency depending on the specific charge. It is possible that a student with a criminal background may not be placed in a field practicum or complete their degree program. The Criminal Background Policy is available on the Social Work Department website (https://socialwork.gmu.edu).

**Insurance Coverage**

Students engaged in internships are covered for liability under the Commonwealth of Virginia’s Self-Insured Liability Insurance Plan and covered for medical malpractice under the Medical Malpractice Insurance Plan, as established by the Department of General Services, Division of Risk Management. Only practicum activities that have been determined by the field instructor to be part of the course are covered. Students are encouraged to obtain professional liability coverage through the National Association of Social Workers, although this additional coverage is optional.

**Immunizations**

All students who are enrolled in a course that requires a field placement (SOCW 672, SOCW 673, SOCW 692, SOCW 693, SOCW 694, SOCW 695) must have an annual tuberculosis screening (PPD). In addition, students must complete the entire Hepatitis B immunization series in accordance with current U.S. Public Health Service recommendations. Any cost related to these requirements is the responsibility of the student. Students can register for field classes prior to the completion of the immunizations, but documentation of completion must be submitted to the MSW administrative assistant in the Social Work Department office no later than one month after the beginning of the semester. Immunizations are program requirements and must be completed by the student even if they are not required by the agency.

## Requirements

### Degree Requirements

**Total credits: 60**

In order to graduate with the MSW degree, students must successfully complete the generalist courses and the courses for one specialization. Before beginning Specialization Courses, students must complete all Generalist Courses.

### Generalist Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 600</td>
<td>Foundations of Social Work and Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 623</td>
<td>Human Behavior and Social Systems</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 624</td>
<td>Human Behavior and Social Systems II</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 651</td>
<td>Social Policies, Programs, and Services</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 652</td>
<td>Influencing Social Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 657</td>
<td>Direct Social Work Practice I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 658</td>
<td>Direct Social Work Practice II</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 671</td>
<td>Research Methods for Social Workers</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 672</td>
<td>Generalist Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 673</td>
<td>Generalist Field Practicum and Seminar II</td>
<td>3</td>
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</tbody>
</table>

**Total Credits** 30

### Specialization in Clinical Practice (CLNP)

#### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SOCW 640</td>
<td>Advanced Clinical Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 645</td>
<td>Community-Centered Clinical Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 674</td>
<td>Psychopathology</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 688</td>
<td>Program Evaluation for Social Workers</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 692</td>
<td>Specialist Clinical Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 693</td>
<td>Specialist Clinical Field Practicum and Seminar II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 18

### Advanced Clinical Practice Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 630</td>
<td>Forensic Social Work Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 664</td>
<td>Creative Arts in Social Work Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 675</td>
<td>Selected Topics in Clinical Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 677</td>
<td>Family Therapy</td>
<td></td>
</tr>
<tr>
<td>SOCW 678</td>
<td>Trauma and Recovery</td>
<td></td>
</tr>
<tr>
<td>SOCW 679</td>
<td>Military Social Work</td>
<td></td>
</tr>
<tr>
<td>SOCW 682</td>
<td>Substance Abuse Interventions</td>
<td></td>
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</tbody>
</table>
SOCW 689  Clinical Practice with Older Adults

### Advanced Policy Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one from the following:</td>
<td></td>
</tr>
<tr>
<td>SOCW 653</td>
<td>Immigration Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 654</td>
<td>Social Policy for Children and Youth</td>
<td></td>
</tr>
<tr>
<td>SOCW 655</td>
<td>Aging Programs and Policies</td>
<td></td>
</tr>
<tr>
<td>SOCW 663</td>
<td>Global Human Rights Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>3</td>
</tr>
</tbody>
</table>

### Elective

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one from either the list below or the Advanced Clinical Practice courses or the Advanced Policy courses listed previously.</td>
<td></td>
</tr>
<tr>
<td>SOCW 675</td>
<td>Selected Topics in Clinical Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td></td>
</tr>
<tr>
<td>SOCW 684</td>
<td>Social Work and the Law</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SOCW 687</td>
<td>Empowering Communities for Change</td>
<td></td>
</tr>
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</table>

### Specialization in Social Change (SOCC)

#### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SOCW 684</td>
<td>Social Work and the Law</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 685</td>
<td>Organizational Leadership for Social Workers</td>
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<td>SOCW 687</td>
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<td>SOCW 688</td>
<td>Program Evaluation for Social Workers</td>
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</tr>
<tr>
<td>SOCW 694</td>
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<td>3</td>
</tr>
<tr>
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<td>3</td>
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</table>

### Advanced Policy Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two from the following:</td>
<td></td>
</tr>
<tr>
<td>SOCW 653</td>
<td>Immigration Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 654</td>
<td>Social Policy for Children and Youth</td>
<td></td>
</tr>
<tr>
<td>SOCW 655</td>
<td>Aging Programs and Policies</td>
<td></td>
</tr>
<tr>
<td>SOCW 663</td>
<td>Global Human Rights Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>3</td>
</tr>
</tbody>
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### Specialization in Clinical Practice (CLNP)

#### Core Courses

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</tr>
<tr>
<td>SOCW 692</td>
<td>Specialist Clinical Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 693</td>
<td>Specialist Clinical Field Practicum and Seminar II</td>
<td>3</td>
</tr>
</tbody>
</table>

### MSW for Students with Advanced Standing

In order to graduate with the MSW degree, advanced standing students must successfully complete the generalist course (SOCW 600) in the summer prior to beginning the specialization curriculum and the courses for one specialization.

#### Generalist Course

<table>
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<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 600</td>
<td>Foundations of Social Work and Social Welfare</td>
<td>3</td>
</tr>
</tbody>
</table>

### Advanced Clinical Practice Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two of the following:</td>
<td></td>
</tr>
<tr>
<td>SOCW 630</td>
<td>Forensic Social Work Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 664</td>
<td>Creative Arts in Social Work Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 674</td>
<td>Psychopathology</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 675</td>
<td>Selected Topics in Clinical Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 677</td>
<td>Family Therapy</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 678</td>
<td>Trauma and Recovery</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 679</td>
<td>Military Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 682</td>
<td>Substance Abuse Interventions</td>
<td>3</td>
</tr>
</tbody>
</table>
George Mason University

Advanced Policy Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 653</td>
<td>Immigration Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 654</td>
<td>Social Policy for Children and Youth</td>
<td></td>
</tr>
<tr>
<td>SOCW 655</td>
<td>Aging Programs and Policies</td>
<td></td>
</tr>
<tr>
<td>SOCW 663</td>
<td>Global Human Rights Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3</td>
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</table>

Elective

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 675</td>
<td>Selected Topics in Clinical Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 684</td>
<td>Social Work and the Law</td>
<td></td>
</tr>
<tr>
<td>SOCW 685</td>
<td>Organizational Leadership for Social Workers</td>
<td></td>
</tr>
<tr>
<td>SOCW 687</td>
<td>Empowering Communities for Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3</td>
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</table>

Specialization in Social Change (SOCC)

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 684</td>
<td>Social Work and the Law</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 685</td>
<td>Organizational Leadership for Social Workers</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 687</td>
<td>Empowering Communities for Change</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 688</td>
<td>Program Evaluation for Social Workers</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 694</td>
<td>Specialist Social Change Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 695</td>
<td>Specialist Social Change Field Practicum and Seminar II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
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</tr>
</tbody>
</table>

Advanced Policy Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 653</td>
<td>Immigration Policy</td>
<td>6</td>
</tr>
<tr>
<td>SOCW 654</td>
<td>Social Policy for Children and Youth</td>
<td></td>
</tr>
<tr>
<td>SOCW 655</td>
<td>Aging Programs and Policies</td>
<td></td>
</tr>
<tr>
<td>SOCW 663</td>
<td>Global Human Rights Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives

Select two from either the list below or the Advanced Clinical Practice courses or the Advanced Policy courses listed previously:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 630</td>
<td>Forensic Social Work Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 664</td>
<td>Creative Arts in Social Work Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 674</td>
<td>Psychopathology</td>
<td></td>
</tr>
<tr>
<td>SOCW 675</td>
<td>Selected Topics in Clinical Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 677</td>
<td>Family Therapy</td>
<td></td>
</tr>
<tr>
<td>SOCW 678</td>
<td>Trauma and Recovery</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 679</td>
<td>Military Social Work</td>
<td></td>
</tr>
<tr>
<td>SOCW 682</td>
<td>Substance Abuse Interventions</td>
<td></td>
</tr>
<tr>
<td>SOCW 689</td>
<td>Clinical Practice with Older Adults</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Dual Degree Options

Conflict Analysis and Resolution, MS and Social Work, MSW Dual Degree

The Department of Social Work (p. 279) and the School for Conflict Analysis and Resolution (p. 936) have joined forces to offer a three year dual-degree program. Students can earn both an MSW (p. 284) and an MS in Conflict Analysis and Resolution (p. 951) while taking advantage of the diversity of the Washington, D.C., metropolitan area and the university’s proximity to the nation’s capital. This is the only dual-degree program of its kind.

Admission Requirements

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and apply using the online Application for Graduate Admission (http://admissions.gmu.edu). The application process is competitive, and applications are considered for the fall semester only.

Students interested in the 3-year dual degree program submit one online Application for Graduate Admission (http://admissions.gmu.edu), select the MSW in Social Work (p. 284) as a primary program, and submit all application support materials to the Office of Graduate Admission in the College of Health and Human Services. Applicants should communicate their interest in completing the dual degree program in their essays, and recommendations should address the dual program interest. Students must be admitted to both programs in the same semester (fall only) to be admitted to the dual degree program.

For application deadlines and detailed application requirements please refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines). Interested students should consult the MSW program website (https://socialwork.gmu.edu/program/view/19658), the MSW program (p. 284), and the MSW program director for additional information prior to applying.

Transfer of Credit

Transfer credit is governed AP.6.5.3 Transfer of Credit (p. 92) and AP.6 Graduate Policies (p. 90). Transfer credits must be approved by the
program director and the dean. Students who enroll initially through non-degree studies should seek course advising through the department prior to taking a course and plan to submit their application to the dual degree program as soon as possible.

Please refer to the Transfer of Credit policy for the MSW in Social Work (p. 284) for departmental policy governing courses taken at another institution and the maximum number of credits allowed.

### MSW-MS Degree Requirements

**Total credits: 78**

<table>
<thead>
<tr>
<th>Social Work Courses</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 600</td>
<td>SOCW 600</td>
<td>Foundations of Social Work and Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 623</td>
<td>SOCW 623</td>
<td>Human Behavior and Social Systems</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 624</td>
<td>SOCW 624</td>
<td>Human Behavior and Social Systems II</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 651</td>
<td>SOCW 651</td>
<td>Social Policies, Programs, and Services</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 652</td>
<td>SOCW 652</td>
<td>Influencing Social Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 657</td>
<td>SOCW 657</td>
<td>Direct Social Work Practice I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 658</td>
<td>SOCW 658</td>
<td>Direct Social Work Practice II</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 672</td>
<td>SOCW 672</td>
<td>Generalist Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 673</td>
<td>SOCW 673</td>
<td>Generalist Field Practicum and Seminar II</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 687</td>
<td>SOCW 687</td>
<td>Empowering Communities for Change</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 688</td>
<td>SOCW 688</td>
<td>Program Evaluation for Social Workers</td>
<td>3</td>
</tr>
<tr>
<td>or CONF 660</td>
<td>or CONF 660</td>
<td>Conflict Assessment and Program Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 30-33

1. Students complete only one of SOCW 688 or CONF 660.

<table>
<thead>
<tr>
<th>Social Change Specialization (SOCC)</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 684</td>
<td>SOCW 684</td>
<td>Social Work and the Law</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 685</td>
<td>SOCW 685</td>
<td>Organizational Leadership for Social Workers</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 694</td>
<td>SOCW 694</td>
<td>Specialist Social Change Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 695</td>
<td>SOCW 695</td>
<td>Specialist Social Change Field Practicum and Seminar II</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two courses from the following. At least one course must be an Advanced Policy Course.

**Advanced Policy**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 653</td>
<td>Immigration Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 654</td>
<td>Social Policy for Children and Youth</td>
<td></td>
</tr>
<tr>
<td>SOCW 655</td>
<td>Aging Programs and Policies</td>
<td></td>
</tr>
<tr>
<td>SOCW 663</td>
<td>Global Human Rights Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 665</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 18

<table>
<thead>
<tr>
<th>Conflict Analysis and Resolution Courses</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 600</td>
<td>CONF 600</td>
<td>Foundations of Conflict Analysis and Resolution</td>
<td>6</td>
</tr>
<tr>
<td>CONF 610</td>
<td>CONF 610</td>
<td>Conflict Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>CONF 657</td>
<td>CONF 657</td>
<td>Facilitation Skills</td>
<td>3</td>
</tr>
<tr>
<td>CONF 625</td>
<td>CONF 625</td>
<td>Engaging Conflict 1</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 15

1. CONF 657 Facilitation Skills should be completed before a student takes CONF 625 Engaging Conflict.
Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 12 credits of CONF Electives with approval from S-CAR</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits 12

School of Nursing

Phone: 703-993-1901 (Undergrad)
703-993-1947 (Master’s)
703-993-1961 (Doctoral)
Website: nursing.gmu.edu

Administration

- Cheryl Oetjen, Interim Director

The School of Nursing is a teaching/learning organization with a national and international academic reputation, grounded in sound general education. It develops and supports a diverse faculty who are visionary and competent practitioners, scholars, and researchers, excellent in teaching in academic and practice settings, and responsive to the needs of students and the community. Specifically, the nursing programs prepare graduates to function as providers, coordinators, and managers of care and for leadership, advanced practice, and nurse scholar roles, as well as members of the nursing profession. Graduates of the School of Nursing are prepared to function as interdisciplinary health professionals and citizens who provide leadership, care, and service to the community. The School promotes health and well-being through its programs and centers, engaging in scholarly activities and research with the aim of maximum health for all people. Part-time students are encouraged to take at least 6 credits per semester to promote timely completion of the program.

Faculty

School Faculty

Associate Professors
Douglas, Mallinson, Oh, Rodan, C. Sutter, R. Sutter, Urban (associate dean for practice and strategic initiatives)

Assistant Professors
Brewster, S. Chang, Garrison, Haas, Harman, Kelly, Middle, Oetjen (interim director), Scafide, Scully, Stacks, Stoehr, Thomas

Instructors
Brown-Rolle, K. Chang, Davidson, Fine, Goodknight, Lee

Administrative Faculty
Fersizidis, Westberg

Emeriti
Ailinger, Boland, Boyd, Brenkus, Carty, Chong, Jenkins, Langley, Moore, Moss, Normile, Parker-Smith, Redmond, Silva, Sorrell, Vail, Walker, Wu

Requirements & Policies

Policies

Academic Advising
Each student is assigned an academic advisor who is a faculty member within their academic department or a professional academic advisor within the Office of Student Affairs (OSA). Academic advisor assignments are listed on the CHHS website (https://chhs.gmu.edu/students/academic-advising), and students are expected to meet with their advisor regularly (at least once each semester) to seek advice about academic schedules and program plans, internships, and career guidance. Students also should meet with their advisor if they are experiencing academic difficulty or personal challenges or if they are feeling overwhelmed.

All students are responsible for knowing the requirements of their major as specified in the university catalog for their catalog year; academic deadlines outlined in the semester academic calendar (http://registrar.gmu.edu/calendars); and university policies and procedures as stated in the catalog.

Students also should run their own degree-evaluation (http://registrar.gmu.edu/students/degree-evaluation) to identify graduation requirements and progress towards their degree. While academic advisors can give advice to students, students are responsible for the academic planning decisions they make. Academic advisors cannot be held responsible for mistakes made by students in selecting courses that may not count toward their degree and thus delay a desired graduation date.

Programs

• Nursing Education Graduate Certificate
• Nursing, BSN
• Nursing, DNP
• Nursing, MSN
• Nursing, PhD
• Psychiatric Mental Health Nurse Practitioner Graduate Certificate

Nursing, BSN

Banner Code: HH-BSN-NURS

Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/undergraduate-advising/nursing-advisors

The Bachelor of Science in Nursing (BSN) Program is accredited by the Virginia State Board of Nursing and the Commission on Collegiate Nursing Education. The undergraduate nursing program prepares students to deliver superior nursing care and provide leadership in nursing in the increasingly complex and challenging field of modern health care. Graduates are in demand as professional nurses in hospitals, long-term care facilities, and community health and other health care agencies. The program emphasizes health promotion and disease prevention, capitalizing on early detection of potential health problems, health maintenance in ambulatory and acute-care agencies, and preparation for the managerial responsibilities of nursing.
The School of Nursing offers four pathways to complete the BSN, all of which lead to completion of the objectives of the undergraduate program. The traditional pathway is a two-year curriculum following the completion of the Mason Core and prerequisite requirements. An accelerated RN-to-BSN pathway for students holding current registered nurse (RN) licenses may be completed in one year (full-time) following completion of the Mason Core and prerequisite requirements. The accelerated, second degree pathway is a 12-month curriculum for students holding a baccalaureate degree outside of nursing. The traditional and accelerated pathways in nursing must be completed on a full-time basis. An accelerated Veteran LPN-to-BSN pathway is designed to build upon the skills and knowledge gained through an LPN program and previous military health training and must be completed on a full-time basis. Students can complete this pathway in 12 months following completion of the nursing prerequisite requirements.

### Traditional BSN Pathway Requirements

To be eligible to apply for the traditional BSN program, applicants must have achieved a minimum GPA of 3.00 in the designated nursing prerequisite coursework and must have earned a C or better in each of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Human Anatomy and Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 246</td>
<td>Introductory Microbiology</td>
<td></td>
</tr>
</tbody>
</table>

### Admissions & Policies

#### Admissions

**General Requirements**

To be admitted to the BSN program, students must complete a prenursing curriculum during their first two years and be admitted to junior standing. Students admitted in the traditional and accelerated, second degree pathways will enter the program in the fall of their junior year and at that point are considered nursing majors. Students admitted to the RN-to-BSN pathway may enter in the fall or spring semester. Students admitted to the Veteran LPN-to-BSN pathway may enter in the fall semester only.

Application to the BSN program is a process involving two applications: the George Mason University Undergraduate Application and the BSN Departmental Application. (Currently enrolled Mason students need only apply using the BSN Departmental Application.) Acceptance to the nursing program is contingent upon admission to the university, but admission to the university does not guarantee admission to the nursing program. Application to the BSN major is a competitive admission process. Prospective applicants are responsible to meet all BSN admission requirements at the time of application. Meeting the minimum requirements does not guarantee admission into the nursing program—it only allows an application to be considered. Students who are interested in pursuing a major in nursing are strongly encouraged to attend an information session provided by the CHHS Office of Student Affairs for advising prior to applying to the nursing major.

Attendance at the first meeting of all nursing courses (lectures, on-campus laboratories, and agency laboratories) is mandatory.

### Accelerated, Second Degree BSN Pathway Requirements

The Accelerated, Second Degree BSN Pathway is designed for applicants already holding a bachelor's degree who are interested in pursuing an undergraduate degree in nursing. This full-time accelerated program begins in the fall semester and is completed in 12 months.

Applicants must have a baccalaureate degree from an accredited college or university and must have earned a minimum cumulative GPA of 2.85 in their first degree. The non-nursing baccalaureate degree must be completed by the end of the spring semester of the year a student desires to be considered for fall admission.

Applicants to the second degree pathway must have achieved a minimum GPA of 3.00 in the designated nursing prerequisite coursework and must have earned a C or better in each of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Human Anatomy and Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 246</td>
<td>Introductory Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 306</td>
<td>Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

### Additional Eligibility Requirements

Applicants must have completed two of the three science prerequisite courses (anatomy and physiology I, anatomy and physiology II, and microbiology) by the submission date of the BSN Departmental Application. Coursework in anatomy and physiology and microbiology cannot be more than five years old by the time of BSN enrollment. Additional eligibility requirements include a grade of C or better in all Mason Core courses and electives. All nursing prerequisites, Mason Core, and electives must be complete by the end of Mason’s spring term before starting the program.

Application to the BSN program is a process involving two applications: the George Mason University Undergraduate Application and the BSN Departmental Application. (Currently enrolled Mason students need only apply using the BSN Departmental Application.) Acceptance to the nursing program is contingent upon admission to the university. Admission to the university does not guarantee admission to the nursing program. See the CHHS undergraduate admissions website (https://nursing.gmu.edu/admissions/bsn-admissions) for the latest information on applications and deadlines.

Application to the BSN major is a competitive admission process. Meeting the minimum requirements does not guarantee admission into the nursing program—it only allows an application to be considered in the review process.

The traditional BSN pathway is a full-time program beginning in the fall semester and is completed in two years (four semesters).
Students admitted with a prior bachelor's degree are required to complete at least 30 hours at Mason beyond the first degree. Students should meet with their academic advisor to review degree requirements.

Application to the BSN major is a competitive admission process. Meeting the minimum requirements does not guarantee admission into the nursing program - it only allows an application to be considered in the review process.

**Mason Veterans Program in Nursing and Co-enrollment in Nursing Program**

The Mason Veterans Program in Nursing and Co-enrollment in Nursing Program allow students to complete a Bachelor of Science in Nursing (BSN) degree online while concurrently enrolled in an Associate of Applied Science nursing degree (AAS Nursing) program at a partner community college. Nursing classes in the CEP are offered online in seven-week and full-semester formats.

Students take the NCLEX (National Council Licensure Examination) after completing their AAS in nursing while enrolled in Mason’s BSN program. After a student passes the NCLEX and upon successful completion of NURS 336, students are awarded 33 nursing transfer credits toward their BSN degree. Students complete Mason’s BSN program the semester following graduation with the AAS degree.

**Application Process**

Admission to the Mason Veterans Program in Nursing or Co-enrollment in Nursing Program involves two applications: the George Mason University Undergraduate Application (https://www2.gmu.edu/admissions-aid/apply-now) and the BSN Departmental Application. The BSN Departmental Application, instructions, and deadlines are available online (https://nursing.gmu.edu/admissions/bsn-admissions). Please use the Transfer Search Engine (http://admissions.gmu.edu/transfer/transferCreditSearch.asp) to check course equivalency.

**Eligibility Guidelines**

To be eligible to apply for the Co-enrollment in Nursing Program, applicants must:

- Receive admission to Mason
- Provide a copy of a letter of admission to a pre-licensure nursing program at a partner community college
- Provide proof of enrollment in a partner community college AAS-Nursing program (i.e., copy of an unofficial transcript)
- Have completed all Mason nursing prerequisite courses at any regionally accredited institution with a grade of C (not C-) or better in EACH course by the completion of the AAS Nursing program at the partner community college
- Mason Core and elective courses may be completed at any regionally accredited institution and can still be in progress at the time of admission. These courses must be completed with a grade of C (not C-) or better in EACH course prior to completing the CEP ENGHI 302 must be completed at Mason.
- Mason Core and elective courses may be completed at any regionally accredited institution and can still be in progress at the time of admission. These courses must be completed with a grade of C (not C-) or better in EACH course prior to completing the CEP ENGHI 302 must be completed at Mason.
- Mason Core and elective courses may be completed at any regionally accredited institution and can still be in progress at the time of admission. These courses must be completed with a grade of C (not C-) or better in EACH course prior to completing the CEP ENGHI 302 must be completed at Mason.
- Earn a cumulative GPA of 3.0 at partner community college institution
- Submit an online BSN departmental application and non-refundable fee through online payment system by the deadlines. See the CHHS undergraduate admissions website (https://nursing.gmu.edu/admissions/bsn-admissions) for the latest information on applications and deadlines.

In addition, to be eligible to apply for the Mason Veterans Nursing Program, applicants must be a veteran of the US military.
Veteran LPN-to-BSN Pathway Requirements

The accelerated Veteran LPN-to-BSN Pathway is for LPNs seeking to pursue a BSN and earn their RN license. The Veteran LPN-to-BSN program is designed to build upon the skills and knowledge gained through an LPN program and previous military health training. Students can complete this concentration in 12 months following completion of the prerequisite requirements. The program must be completed on a full-time basis.

To be eligible to apply for the Veteran LPN-to-BSN Pathway, applicants must be a veteran of the US military and have a current LPN license. Applicants must have achieved a minimum GPA of 3.00 in the designated nursing prerequisite coursework and must have earned a C or better in each of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Human Anatomy and Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 246</td>
<td>Introductory Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 306</td>
<td>Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core)</td>
<td>(p. 142)</td>
</tr>
</tbody>
</table>

Applicants must have completed two of the three science prerequisite courses (anatomy and physiology I, anatomy and physiology II, and microbiology) by the submission date of the BSN Departmental Application. Coursework in anatomy and physiology and microbiology cannot be more than five years old by the time of BSN enrollment. Additional eligibility requirements include a grade of C or better in all College of Science, Engineering, and Mathematics (CSE) and Mason Core courses. All science prerequisite courses must be complete by the end of Mason's spring term before starting the program.

Application to the BSN program is a process involving two applications: the George Mason University Undergraduate Application and the BSN Departmental Application. (Currently enrolled Mason students need only apply using the BSN Departmental Application.) Acceptance to the nursing program is contingent upon admission to the university. Admission to the university does not guarantee admission to the nursing program. See the CHHS undergraduate admissions website (https://nursing.gmu.edu/admissions/bsn-admissions) for the latest information on applications and deadlines.

Application to the BSN major is a competitive admission process. Meeting the minimum requirements does not guarantee admission into the nursing program - it only allows an application to be considered in the review process.

**Policies**

**Degree Requirements**

Students must fulfill all requirements for bachelor's degrees, including the Mason Core (p. 142) requirements. For policies governing all undergraduate degrees, see APSU Undergraduate Policies (p. 87).

**Writing Intensive Requirement**

Mason requires all students to complete at least one 300- or 400-level "writing intensive" course as designated by their department. Students majoring in nursing fulfill this requirement by successfully completing NURS 465.

**Academic Grade Standards**

The passing grade is a C+ or above in undergraduate nursing didactic courses in the School of Nursing. A grade of satisfactory (S) is the passing grade for NURS 310 and NURS 312. After admission to junior-year standing and to the nursing program, a student who earns a grade of C or below must repeat the course and earn a grade of a C+ or above in that course. This will alter or halt further progression in the nursing program and affect the expected graduation date. A student may repeat only one nursing course, one time. A student who fails to earn a grade of C+ or above in the repeated course is terminated from the BSN nursing program. In addition, earning a grade of C or below in a second nursing course results in termination from the BSN nursing program. Termination from any one of the nursing undergraduate pathways constitutes termination from the undergraduate (BSN) nursing major in the School of Nursing.

Because of the sequential nature of the nursing curriculum, students are not allowed to progress to the next semester of nursing course work while a grade of "IN" (incomplete) remains on their academic record. A passing grade must be recorded before beginning the next semester's courses. Academic dismissal is governed by university policy (p. 88).

**Professional Conduct Policy**

All students in the School of Nursing are expected to adhere to the Professional Conduct Policy (p. 245) of the College of Health and Human Services.

**Appeal Process**

Although faculty members in the nursing program are generally the best judges of a student's professional performance, there may be times when a student believes a grade is unfair. Students in the School of Nursing wishing to appeal a grade are expected to follow the Mason guidelines for grade appeals (p. 85).

**NCLEX Readiness Preparation and Testing**

Throughout the BSN program, all students, with the exception of RN-to-BSN students, participate in preparation for the NCLEX-RN licensing exam through opportunities provided during nursing courses. These opportunities are included as integrated components of select courses and include practice NCLEX-style exams and content-specific testing. A final cumulative assessment exam is given toward the end of the program to provide the student with guidance about their chance for success on the licensing exam. A final course in critical thinking and test-taking strategies is required in the senior year, and remediation in select content areas may be required as a component of this course.

**Special Requirements**

Fees and expenses related to the nursing program include: skills laboratory fee, standardized testing and course materials, uniforms, stethoscope, name pin, books, CPR certification, health forms, health insurance, immunizations, and criminal background check fees. The availability of personal transportation to and from clinical agencies is required of all students. For a summary of all current fees and estimated expenses, see the School of Nursing website (https://nursing.gmu.edu).
All BSN students are required to obtain a health clearance and complete the immunizations required by Mason as listed in the Student Health Services section of the Mason catalog. In addition, the BSN program has additional health and immunization requirements to meet the requirements of its clinical agency partners. See the Undergraduate Program, School of Nursing website for the most current information. Students are not allowed into any clinical setting without the completed immunization series as prescribed by Mason or the School of Nursing and may have an offer of admission withdrawn for inability to meet these requirements. The School of Nursing reviews health records and reserves the right to refuse admission or continued enrollment to any student who is unable to comply with these requirements.

All students must have CPR certification before entering the first clinical nursing course and maintain it through the remainder of the program. The American Heart Association Basic Life Support - Health Care Provider is required. On-line renewal of CPR certification is not accepted. Any cost incurred is the responsibility of the student.

All students must have current health insurance before entering the first clinical nursing course and maintain it through the remainder of the program. All students are required to have an active Mason e-mail account.

No student or faculty member will be discriminated against or denied admission to the nursing program for the sole reason that the student or faculty member has been exposed to, infected with, or diagnosed with HIV or HBV. All students are expected to practice Universal Precautions with all clients, and failure to do so will result in termination from the nursing major. In the event that a student is exposed to body fluids of a client during a clinical experience or practicum, procedures and appropriate reports are completed according to institutional and nursing policies. Information related to exposure or infection is confidential, and dissemination of such information is based on the need-to-know criteria that apply in health care situations. HIPAA and FERPA regulations apply. A complete and detailed HIV/HBV policy is available in the CHHS Office of Student Affairs.

RN-licensed students enrolled in the RN-to-BSN pathway and LPN-licensed students enrolled in the Veteran LPN-to-BSN pathway are required to submit a copy of their current license prior to the first day of class. RN-licensed students and LPN-licensed students enrolled in the Veteran LPN-to-BSN pathway are required to submit a copy of their current license prior to the first day of class. RN-licensed students and LPN-licensed students must maintain current licensure throughout the academic program.

Designated Nursing Prerequisites

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 246</td>
<td>Introductory Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 305</td>
<td>Biology of Microorganisms</td>
<td></td>
</tr>
<tr>
<td>BIOL 306</td>
<td>Biology of Microorganisms Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHIL 309</td>
<td>Bioethics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 24

1 Non-native speakers of English with limited proficiency in the language may substitute ENGH 100 for ENGH 101. Students must attain a minimum grade of C in ENGH 100 or ENGH 101, as well as in ENGH 302, to fulfill degree requirements.

Degree Requirements

Total credits: 120

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oral Communication</td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Oral Communication course. (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Technology</td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Information Technology course (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Literature</td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Literature course (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts</td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Arts course (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Western Civilization</td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Western Civilization course (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global Understanding</td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Global Understanding course (p. 146)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The recommended course is GCH 205 Global Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences</td>
<td></td>
</tr>
<tr>
<td>Any Mason Core Social and Behavioral Sciences course (p. 150)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The recommended course is PSYC 100 Basic Concepts in Psychology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 27

1 Fuills Mason Core Natural Science (p. 148) requirement for students in this degree program.
2 Students in the Accelerated, Second Degree BSN Pathway (SEC) complete any statistics course.
3 Or a statistics course in another discipline with the approval of the advisor. STAT 250 fulfills the quantitative reasoning Mason Core requirement. If STAT 250 is not taken, an approved Mason Core Quantitative Reasoning (p. 143) course is required.
4 Or equivalent as approved by advisor (PSYC 211 Developmental Psychology (Mason Core) (p. 142) is recommended)
5 Other nutrition transfer courses may meet this requirement as approved by the advisor.
Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select seven credits of electives. ¹</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>7</td>
</tr>
</tbody>
</table>

¹ A course in sociology or anthropology is recommended.

Traditional BSN Major, Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 312</td>
<td>Basic Nursing Care of Adults</td>
<td>4</td>
</tr>
<tr>
<td>NURS 330</td>
<td>Nursing Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>NURS 334</td>
<td>Nursing as a Health Profession and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>NURS 337</td>
<td>Application of Nursing Fundamental Technologies</td>
<td>1</td>
</tr>
<tr>
<td>NURS 343</td>
<td>Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>NURS 344</td>
<td>Intermediate Nursing Technologies</td>
<td>1</td>
</tr>
<tr>
<td>NURS 347</td>
<td>Adult Pathophysiology and Nursing Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 348</td>
<td>Maternal-Newborn Physiology, Pathophysiology, and Nursing Care</td>
<td>2</td>
</tr>
<tr>
<td>NURS 349</td>
<td>Pediatric Pathophysiology and Nursing Care</td>
<td>2</td>
</tr>
<tr>
<td>NURS 358</td>
<td>Health Promotion and Disease Prevention in Maternal/Infant Nursing</td>
<td>2</td>
</tr>
<tr>
<td>NURS 359</td>
<td>Health Promotion and Disease Prevention in Pediatric Nursing</td>
<td>2</td>
</tr>
<tr>
<td>NURS 388</td>
<td>Problem-Based Clinical Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>NURS 410</td>
<td>Nursing Care of Clients with Pathological Conditions</td>
<td>3</td>
</tr>
<tr>
<td>NURS 425</td>
<td>Comprehensive Health Assessment</td>
<td>3</td>
</tr>
<tr>
<td>NURS 436</td>
<td>Leadership and Management of Health Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 451</td>
<td>Advanced Clinical Preceptorship</td>
<td>5</td>
</tr>
<tr>
<td>NURS 453</td>
<td>Research in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 455</td>
<td>Advanced Technologies in Nursing</td>
<td>1</td>
</tr>
<tr>
<td>NURS 465</td>
<td>Examination and Integration of Professional and Health Care Issues (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>NURS 466</td>
<td>Community Health Nursing</td>
<td>2</td>
</tr>
<tr>
<td>NURS 467</td>
<td>Clinical in Community Health Nursing</td>
<td>2</td>
</tr>
<tr>
<td>NURS 468</td>
<td>Psychiatric and Mental Health Nursing</td>
<td>2</td>
</tr>
<tr>
<td>NURS 469</td>
<td>Clinical in Psychiatric and Mental Health Nursing</td>
<td>2</td>
</tr>
<tr>
<td>NURS 488</td>
<td>Inquiry-Based Clinical Seminar</td>
<td>2</td>
</tr>
<tr>
<td>NURS 491</td>
<td>Critical Thinking and Analysis of Test Taking Strategies</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 62

Accelerated, Second Degree BSN Pathway (SEC)

Students who are eligible for an alternative pathway to the BSN must meet the nursing course requirements for the pathway to which they have been admitted rather than those for the traditional BSN pathway. Candidates for the degree must present at least 120 credits via:

• Mason Core (p. 142) requirements, to be satisfied by the initial degree and fulfilled through transfer credit.

Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 305</td>
<td>Application of Basic Nursing Techniques</td>
<td>1</td>
</tr>
<tr>
<td>NURS 309</td>
<td>Introduction to Basic Nursing Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 310</td>
<td>Application of Basic Nursing Care</td>
<td>4</td>
</tr>
<tr>
<td>NURS 319</td>
<td>Pathophysiological Basis for Nursing Care of Individuals and Small Groups</td>
<td>4</td>
</tr>
<tr>
<td>NURS 334</td>
<td>Nursing as a Health Profession and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>NURS 343</td>
<td>Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>NURS 350</td>
<td>Application of Nursing Care for Individuals and Small Groups</td>
<td>4</td>
</tr>
<tr>
<td>NURS 351</td>
<td>Application of Intermediate Nursing Technologies</td>
<td>1</td>
</tr>
<tr>
<td>NURS 419</td>
<td>Pathophysiological Basis for Nursing Care of Individuals and Small Groups II</td>
<td>4</td>
</tr>
<tr>
<td>NURS 425</td>
<td>Comprehensive Health Assessment</td>
<td>3</td>
</tr>
<tr>
<td>NURS 427</td>
<td>Advanced Technologies for the Accelerated Pathway</td>
<td>1</td>
</tr>
<tr>
<td>NURS 428</td>
<td>Community Health Clinical for the Accelerated Pathway</td>
<td>2</td>
</tr>
<tr>
<td>NURS 429</td>
<td>Preceptorship for the Accelerated Pathway</td>
<td>3</td>
</tr>
<tr>
<td>NURS 436</td>
<td>Leadership and Management of Health Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 440</td>
<td>Community Health and Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>NURS 453</td>
<td>Research in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 465</td>
<td>Examination and Integration of Professional and Health Care Issues (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 47

Accelerated RN-to-BSN Pathway (RN)

Candidates for the degree must present at least 120 credits. A minimum of 30 credits must be earned at Mason to fulfill requirements for graduation. These include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mason Core and general electives</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Concentration-specific requirements</td>
<td>24</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives earned at Mason 3

Total Credits 120

For some students, the Mason Core requirements (except ENGH 302 Advanced Composition (Mason Core) (p. 142)) may be met by completing the Associate’s degree (i.e., AA – Associate of Arts, AS – Associate of Science, or AA&S – Associate of Arts and Science) from an approved Virginia community college with a qualifying GPA and specific admissions criteria. The Associate of Applied Science (AAS degree) does not waive the Mason Core requirements. Contact Mason’s general Office
of Admissions for more information and see the Guaranteed Admission Agreement (http://admissions.gmu.edu/transfer/gaa.asp) for details.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>NURS 336</td>
<td>Concepts in Professional Nursing as a Discipline</td>
<td>3</td>
</tr>
<tr>
<td>NURS 425</td>
<td>Comprehensive Health Assessment</td>
<td>3</td>
</tr>
<tr>
<td>NURS 436</td>
<td>Leadership and Management of Health Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 440</td>
<td>Community Health and Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>NURS 434</td>
<td>Vulnerable Populations</td>
<td>3</td>
</tr>
<tr>
<td>NURS 453</td>
<td>Research in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 457</td>
<td>Introduction to Nursing Informatics</td>
<td>3</td>
</tr>
<tr>
<td>NURS 465</td>
<td>Examination and Integration of Professional and Health Care Issues (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

1. Students must complete ENGH 302 Advanced Composition (Mason Core) (p. 142), listed above under Mason Core requirements. Only students holding a previous baccalaureate degree are not required to take ENGH 302 Advanced Composition (Mason Core) (p. 142).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 334</td>
<td>Concepts in Professional Nursing as a Discipline</td>
<td>33</td>
</tr>
<tr>
<td>Credit by Exam</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>33</td>
</tr>
</tbody>
</table>

1. RN students will be awarded 33 nursing credits upon completion of NURS 336 Concepts in Professional Nursing as a Discipline.

### Accelerated Veteran LPN-to-BSN Pathway (VLB)

Students who are eligible for an alternative pathway to the BSN must meet the nursing course requirements for the pathway to which they have been admitted rather than those for the traditional BSN pathway. Candidates for the degree must present at least 120 credits. These include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mason Core and General Electives</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Designated Nursing Prerequisites</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Concentration-specific requirements</td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Credit by Exam</td>
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<td>26</td>
</tr>
<tr>
<td>Total Credits</td>
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<td>120</td>
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</table>

### Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 319</td>
<td>Pathophysiological Basis for Nursing Care of Individuals and Small Groups</td>
<td>4</td>
</tr>
<tr>
<td>NURS 334</td>
<td>Nursing as a Health Profession and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>NURS 343</td>
<td>Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>NURS 345</td>
<td>Community Health Clinical for the Accelerated Pathway</td>
<td>2</td>
</tr>
<tr>
<td>NURS 346</td>
<td>Leadership and Management of Health Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 347</td>
<td>Vulnerable Populations</td>
<td>3</td>
</tr>
<tr>
<td>NURS 348</td>
<td>Pathophysiological Basis for Nursing Care of Individuals and Small Groups II</td>
<td>4</td>
</tr>
<tr>
<td>NURS 349</td>
<td>Research in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 350</td>
<td>Examination and Integration of Professional and Health Care Issues (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

1. LPN students will be awarded 26 upper-division nursing credits upon completion of NURS 334 Nursing as a Health Profession and Discipline.

### Nursing, MSN

**Banner Code: HH-MSN-NURS**

**Academic Advising**

Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#nurs

The Master of Science in Nursing (MSN) program is approved by the Virginia State Board of Nursing and accredited by the Commission on Collegiate Nursing Education. The program prepares nurses for a variety of leadership and practice roles in the health care system. The adult gerontology and family nurse practitioner primary care concentrations have been approved by the state boards of nursing and medicine in Virginia. The nursing administration concentration prepares nurses to be leaders in health care organizations. The nurse educator concentration prepares graduates for educational positions in health care organizations.

### Admissions & Policies

**Admissions Requirements**

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must
apply using the online Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). Applicants must be graduates of an accredited baccalaureate (BSN) program in nursing, except for the applicants to the RN-to-MSN program. In addition, applicants must have an active state-based/US license as a registered nurse (RN), a current CPR card, and documented work experience as an RN. The application process is competitive, and applications are considered for the fall and spring semesters. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

**Policies**

**Transfers Between Concentrations**

Approval from the school and college is required for students who wish to transfer between concentrations of the MSN. Students must meet the residency requirements stated in AP 6.9 Requirements for Master's Degrees (p. 94).

**Transfer of Credit**

Students may transfer a maximum of 9 credits into the MSN program from other institutions or taken at Mason in non-degree status, including graduate courses offered through the CHHS Academic Outreach program. Transfer credit is subject to university policies found in AP 6.5.3 Transfer of Credit (p. 92) and college policies and must be approved by the program director and the dean/director of the School of Nursing. Students who enroll initially through non-degree studies or the Academic Outreach program should seek course advising through the School of Nursing and should submit their application to the MSN program in their first semester of study.

**Special Requirements**

Additional fees and expenses related to the nursing graduate program may include: laboratory fee, standardized testing and course materials, name pin, books, CPR certification, health forms, health insurance, immunizations, and criminal background check fees. All students must provide their own personal transportation to and from clinical agencies. For a summary of all current fees and estimated expenses, see the School of Nursing website.

All MSN students are required to obtain a health clearance and complete the immunizations required by George Mason University as listed in the Student Health Services (p. 114) section of the catalog. Additional health and immunization requirements are imposed by clinical agency partners. The additional health requirements are included in the School of Nursing welcome letter. See the Graduate Program, School of Nursing website (https://nursing.gmu.edu) for the most current information. Students are not allowed into any clinical setting without the completed immunization series as prescribed by Mason's School of Nursing. The School of Nursing will refuse admission or continued enrollment to any student who is unable to comply with these requirements. No student will attend practicum courses unless all the requirements for CPR, health exams, immunizations, and criminal background checks are met. Students must be in the process of completing a hepatitis B immunization series when they enroll for their first practicum course.

All students must have CPR certification before entering their first course and maintain it through the remainder of the program. The American Heart Association Basic Life Support - Health Care Provider is required. Any cost incurred is the responsibility of the student.

All students must have current health insurance before entering the first practicum nursing course and maintain it through the remainder of the program. All students are required to have an active Mason e-mail account.

No student or faculty member will be discriminated against or denied admission to the nursing program for the sole reason that the student or faculty member has been exposed to, infected with, or diagnosed with HIV or HBV. All students are expected to practice Universal Precautions with all clients, and failure to do so will result in termination from the nursing major. In the event that a student is exposed to body fluids of a client during a clinical experience or practicum, procedures and appropriate reports are completed according to institutional and nursing policies. Information related to exposure or infection is confidential, and dissemination of such information is based on the need-to-know criteria that apply in health care situations. HIPAA and FERPA regulations apply.

A complete and detailed HIV/HBV policy is available in the CHHS Office of Student Affairs.

MSN students are required to submit a copy of their current RN license prior to the first day of class and must maintain licensure throughout the academic program.

**Professional Conduct**

All students in the School of Nursing are expected to adhere to the Professional Conduct Policy (p. 245) of the College of Health and Human Services.

**Appeal Process**

Although faculty members in the nursing program are generally the best judges of a student’s professional performance, some students may feel that the faculty member’s judgment is unfair. Students in the School of Nursing wishing to appeal a grade are expected to follow the Mason guidelines for grade appeals, found in AP 3.9 Grade Appeals (p. 85).

**Honor System and Code**

The School of Nursing supports academic integrity and follows the standards and procedures as described in the University catalog and available online (http://oai.gmu.edu).

**Academic Termination**

Academic termination is governed by university policy described in AP 6.6.2 Academic Termination (p. 92). Additionally, a failing grade of “F” in a practicum course may result in termination from the program. Any graduate course in which a student earns a C grade or below must be repeated to earn a grade of B or better in order to progress. A course may be repeated only once. A student may also be terminated from the program due to a finding of violation of the university Honor Code or after demonstrating a significant lack of progress.

**Grading**

Throughout the semester, students are assessed on how well they have met curricular outcomes. Consistent with the university, the MSN in Nursing program does not provide a D grade. Final grades for all MSN in Nursing courses are submitted to the university as letter grades.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
<th>Graduate Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (90-100%)</td>
<td>4.00</td>
<td>Passing</td>
</tr>
<tr>
<td>B (80-89%)</td>
<td>3.00</td>
<td>Passing</td>
</tr>
</tbody>
</table>
A graduate course in which a grade of C or below is earned must be repeated to earn a grade of B or better in order to progress, and a course may be repeated only once. Graduate students (both master’s and doctoral) may repeat no more than two courses in their total program of study.

Curriculum

The master’s program in nursing requires 39 to 49 graduate credits. Of these, a 15-credit core consists of coursework in the theoretical and ethical foundations of nursing, nursing research and biostatistics, nursing informatics, and the organization of nursing and health care delivery systems. The remaining 24-34 credits are satisfied by completing one of the concentrations:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 665</td>
<td>Theoretical and Ethical Foundations Related to Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 715</td>
<td>Nursing Informatics Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>NURS 757</td>
<td>Nursing Research and Biostatistics I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 758</td>
<td>Nursing Research and Biostatistics II</td>
<td>3</td>
</tr>
<tr>
<td>NURS 688</td>
<td>Organization of Nursing and Health Care Delivery Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Actual practicum course hours may exceed those listed in the catalog. Actual practicum hours will meet the requirements for certification purposes. Requirements in the catalog reflect the minimum number of credits or practicum hours.

Requirements

Degree Requirements

Total credits: 39-49

Students must complete all Level I courses and the requirements for one concentration.

MSN Level I Core Courses (Required of all students)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 665</td>
<td>Theoretical and Ethical Foundations Related to Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 715</td>
<td>Nursing Informatics Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>NURS 757</td>
<td>Nursing Research and Biostatistics I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 758</td>
<td>Nursing Research and Biostatistics II</td>
<td>3</td>
</tr>
<tr>
<td>NURS 688</td>
<td>Organization of Nursing and Health Care Delivery Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Concentration in Adult Gerontology Nurse Practitioner in Primary Care (AGNP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 643</td>
<td>Community-Oriented Primary Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 713</td>
<td>Decision Making and Pharmacologic Management in Practice</td>
<td>3</td>
</tr>
<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
<td>2</td>
</tr>
<tr>
<td>NURS 724</td>
<td>Health Assessment Practicum</td>
<td>1</td>
</tr>
</tbody>
</table>

Concentration in Advanced Clinical Nursing (NUAC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
<td>2</td>
</tr>
<tr>
<td>NURS 724</td>
<td>Health Assessment Practicum</td>
<td>1</td>
</tr>
<tr>
<td>NURS 761</td>
<td>Pharmacotherapeutics</td>
<td>3</td>
</tr>
<tr>
<td>NURS 769</td>
<td>Physiology and Pathophysiology in Advanced Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 786</td>
<td>Adult Gerontology Primary Care Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>NURS 789</td>
<td>Adult Gerontology Primary Care Practicum II</td>
<td>3</td>
</tr>
<tr>
<td>NURS 791</td>
<td>Adult Gerontology Primary Care Practicum III</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 34

Concentration in Family Nurse Practitioner in Primary Care (FNUP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 643</td>
<td>Community-Oriented Primary Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 713</td>
<td>Decision Making and Pharmacologic Management in Practice</td>
<td>3</td>
</tr>
<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
<td>2</td>
</tr>
<tr>
<td>NURS 724</td>
<td>Health Assessment Practicum</td>
<td>1</td>
</tr>
<tr>
<td>NURS 761</td>
<td>Pharmacotherapeutics</td>
<td>3</td>
</tr>
</tbody>
</table>

Clinical Nurse Specialist Emphasis

Students in the advanced clinical nursing concentration who opt for the clinical nurse specialist emphasis must accrue 500 clinical hours by completing NURS 740. The course may be repeated once if necessary to accrue 500 hours (for a total of 6 credits).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 740</td>
<td>Clinical Nurse Specialist Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective Courses

Select six credits of cognates in area of expertise 1 6

Total Credits 27

1 Students may take NURS 740 Clinical Nurse Specialist Internship for 3 elective credits.
NURS 769 Physiology and Pathophysiology in Advanced Practice 3

Required Courses
NURS 738 Family Primary Care I 2
NURS 742 Family Primary Care Practicum I 2
NURS 739 Family Primary Care II 4
NURS 744 Family Primary Care Practicum II 4
NURS 741 Family Primary Care III 3
NURS 749 Family Primary Care Practicum III 4

Total Credits 34

Concentration in Nursing Administration (NUAD)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 763</td>
<td>Administrative Theory in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 765</td>
<td>Practicum in Nursing Administration I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 766</td>
<td>Administrative Strategies in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 768</td>
<td>Practicum in Nursing Administration II</td>
<td>3</td>
</tr>
</tbody>
</table>

Nursing Administration Support Courses

Financial Management:
NURS 654 Nursing Administration Financial Management 3
or HAP 703 Financial Management in Health Systems
Management/Organizational Theory:
HAP 621 Organization Behavior and Healthcare Leadership 3
Select six credits from Nursing or related discipline electives 6

Total Credits 24

Nurse Educator Concentration (NURE)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
<td>2</td>
</tr>
<tr>
<td>NURS 716</td>
<td>Principles of Assessment and Evaluation in Nursing Education</td>
<td>3</td>
</tr>
<tr>
<td>NURS 761</td>
<td>Pharmacotherapeutics</td>
<td>3</td>
</tr>
<tr>
<td>NURS 769</td>
<td>Physiology and Pathophysiology in Advanced Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Required Courses
NURS 726 Perspectives in Nursing Education 3
NURS 727 Application of Nursing Education Principles to Curriculum and Program Development 3
NURS 728 Practicum and Seminar in Nursing Education I 3
NURS 729 Practicum and Seminar in Nursing Education II 3

Elective Courses
Select three credits in Nursing or related disciplines. 3

Total Credits 26

RN-to-MSN Pathway
This pathway allows RNs who have completed the Mason Core requirements (as listed in the undergraduate RN-to-MSN Pathway described in the Nursing, BSN program) and have demonstrated substantial involvement in professional nursing within the past two years to earn the MSN degree. Students entering a concentration through this pathway must meet all the requirements for admission to that concentration.

In addition to fulfilling admission requirements for degree status at Mason, applicants must:
1. Hold a current state-based/US license to practice nursing.
2. Be graduates of an accredited nursing program.
3. Have earned a 3.00 GPA in
   a. the nursing prerequisites,
   b. the nursing curriculum from the graduating institution, and
   c. Mason Core/general education courses at an accredited institution.
4. Demonstrate involvement in professional nursing within the past two years as an RN in clinical practice.

Students in the RN-to-MSN pathway are required to take the following bridge course:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 440</td>
<td>Community Health and Epidemiology</td>
<td>3</td>
</tr>
</tbody>
</table>

After completion of the bridge course, students choose one of the concentrations and meet all requirements of the graduate program.

Nursing, DNP

Banner Code: HH-DNP-NURS

Academic Advising

Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#nurs

The Doctor of Nursing Practice (DNP) is the terminal practice degree in the profession. The objective of the program is to prepare graduates for the highest level of nursing practice. Emphasis will be placed on evaluating and applying the evidence that supports practice, understanding and creating practice delivery systems based on patient outcomes, and assuming leadership roles in practice settings. The curriculum will allow students with diverse nursing academic and clinical backgrounds the flexibility to enter a program of study tailored to their future professional goals. In the curriculum, five concentrations are available. The concentrations are configured into two foci as recommended by the American Academy of Colleges of Nursing (AACN) Essentials of Doctoral Education for Advanced Nursing Practice (2006), the guidance document for DNP programs. The two foci are:

1. care of individuals with three concentrations, Family Nurse Practitioner, Adult-Gerontology Nurse Practitioner, and Psychiatric Mental Health Nurse Practitioner; and
2. care of aggregates with Advanced Clinical Nursing and Administration in Nursing concentrations.

The DNP program is approved by the Virginia State Board of Nursing and accredited by the Commission on Collegiate Nursing Education. The nurse practitioner concentrations have been approved by the state boards of nursing and medicine in Virginia.
Admissions & Policies

Admissions
Requirements
Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). Applicants must be graduates of accredited baccalaureate (BSN) programs in nursing. Applicants for the master’s to DNP curriculum must also have a master’s degree in nursing or a related field. All applicants must submit a copy of their current state-based/US nursing license and show evidence of at least one year of experience as an RN prior to admission. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

Policies
Transfers Between Programs or Concentrations
Approval from the school and college is required for students who wish to transfer between concentrations of the DNP or who wish to resign from the DNP and transfer to the MSN program.

Students must meet the residency requirements stated in AP.6 Graduate Policies. (p. 90)

Transfer of Credit
Students may transfer a maximum of 9 credits into the DNP program from graduate courses taken at other institutions or taken at Mason in non-degree status, including courses offered through the college’s Academic Outreach program. Transfer credit is governed by university transfer of graduate credit policy and the university requirements for doctoral degrees, and transfer credit must be approved by the program director and the dean. Students who enroll initially through non-degree studies or the Academic Outreach program should seek course advising through the department and should submit their application to the DNP program as soon as possible after beginning their study in non-degree status.

Reduction of Credit
Students who come into the master’s to DNP program will complete 72 credits, including up to 30 hours of relevant graduate credit awarded for past master’s-level courses.

Time Requirements
The total time to degree will not exceed eight (8) calendar years for BSN to DNP students and will not exceed six (6) calendar years for master’s to DNP students.

Academic Termination
Academic termination is governed by university policy described in AP.6.6.2 Academic Termination (p. 92). Additionally, a failing grade of F in a practicum course may result in termination from the program. Any graduate course in which a student earns a C grade or below must be repeated to earn a grade of B or better. A course may be repeated only once. A student may also be terminated from the program due to a finding of violation of the university Honor Code (p. 104) or after demonstrating a significant lack of progress.

Grading
Consistent with the university, the DNP program does not provide a D grade. Final grades for all DNP courses are submitted to the university as letter grades.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
<th>Graduate Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (90-100%)</td>
<td>4.00</td>
<td>Passing</td>
</tr>
<tr>
<td>B (80-89%)</td>
<td>3.00</td>
<td>Passing</td>
</tr>
<tr>
<td>C (70-79%)</td>
<td>2.00</td>
<td>Failing</td>
</tr>
<tr>
<td>F (69% or lower)</td>
<td>0.00</td>
<td>Failing</td>
</tr>
</tbody>
</table>

A graduate course in which a grade of C or below is earned must be repeated to earn a grade of B or better. A course may be repeated only once. Graduate students (both master’s and doctoral) may repeat no more than two courses in their total program of study.

Practicum Hour Requirements
The DNP degree requires a minimum of 1,000 practice hours. The 1,000 hours of precepted or mentored practice are distributed among introductory and upper-level graduate courses. Variable hours in the clinical practicums (NURS 921 and NURS 922) will assure a minimum total of 1,000 clinical hours prior to DNP graduation.

Master’s to DNP students can transfer in up to 600 hours (depending on the number of hours they accrued during their master’s program). The number of clinical hours a student is awarded on admission is based on transcripts and course descriptions. Faculty will review clinical credits earned as part of the master’s degree to determine the number of clinical hours awarded.

Requirements
Degree Requirements
Total credits: 72

BSN to DNP Curriculum
Level I Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 665</td>
<td>Theoretical and Ethical Foundations Related to Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 688</td>
<td>Organization of Nursing and Health Care Delivery Systems</td>
<td>3</td>
</tr>
<tr>
<td>NURS 757</td>
<td>Nursing Research and Biostatistics I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 758</td>
<td>Nursing Research and Biostatistics II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
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</tbody>
</table>

Level II Core Essentials Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 643</td>
<td>Community-Oriented Primary Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 715</td>
<td>Nursing Informatics Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>NURS 808</td>
<td>Translating Nursing and Health Care Research into Evidence-Based Policy</td>
<td>3</td>
</tr>
<tr>
<td>NURS 870</td>
<td>Nursing and Health Care Administration I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 883</td>
<td>Evidence-Based Practice in Nursing and Healthcare</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>16</td>
</tr>
</tbody>
</table>
Advanced Practice Competency Courses
Complete requirements of one concentration.

CONCENTRATIONS
• Concentration in Advanced Clinical Nursing (NUAC) (p. 300)
• Concentration in Nursing Administration (NUAD) (p. 300)
• Concentration in Adult-Gerontology Nurse Practitioner (AGNP) (p. 300)
• Concentration in Family Nurse Practitioner (FNUP) (p. 300)
• Concentration in Psychiatric Mental Health Nurse Practitioner (PMHN) (p. 300)

Concentrations in Advanced Nursing Care of Aggregates
Concentration in Advanced Clinical Nursing (NUAC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
<td>2</td>
</tr>
<tr>
<td>NURS 724</td>
<td>Health Assessment Practicum</td>
<td>1</td>
</tr>
<tr>
<td>Six credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NURS 740</td>
<td>Clinical Nurse Specialist Internship</td>
<td>6</td>
</tr>
<tr>
<td>NURS 761</td>
<td>Pharmacotherapeutics</td>
<td>3</td>
</tr>
<tr>
<td>NURS 769</td>
<td>Physiology and Pathophysiology in Advanced Practice</td>
<td>3</td>
</tr>
<tr>
<td>NURS 773</td>
<td>Clinical Applications of Theory in Advanced Clinical Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 775</td>
<td>Advanced Specialty Practice I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 776</td>
<td>Development of Advanced Practice Nursing Role</td>
<td>3</td>
</tr>
<tr>
<td>NURS 778</td>
<td>Advanced Specialty Practice II</td>
<td>3</td>
</tr>
<tr>
<td>Four credits of</td>
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<td>4</td>
</tr>
<tr>
<td>NURS 921</td>
<td>Clinical Practicum I</td>
<td>2</td>
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<tr>
<td>Five credits of</td>
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<td>5</td>
</tr>
<tr>
<td>NURS 922</td>
<td>Clinical Practicum II</td>
<td>2</td>
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</table>

Total Credits 36

Concentration in Nursing Administration (NUAD)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 654</td>
<td>Nursing Administration Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>NURS 763</td>
<td>Administrative Theory in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 765</td>
<td>Practicum in Nursing Administration I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 766</td>
<td>Administrative Strategies in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS 768</td>
<td>Practicum in Nursing Administration II</td>
<td>3</td>
</tr>
<tr>
<td>NURS 871</td>
<td>Nursing and Health Care Administration II</td>
<td>2</td>
</tr>
<tr>
<td>NURS 874</td>
<td>Internship in Health Care Administration/Policy/Education</td>
<td>4</td>
</tr>
<tr>
<td>Electives toward career goal 1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>NURS 921</td>
<td>Clinical Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>NURS 922</td>
<td>Clinical Practicum II</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits 36

1 All electives must be approved by advisor prior to the start of the course.

Concentrations in Advanced Nursing Care of Individuals
Concentration in Adult-Gerontology Nurse Practitioner (AGNP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
<td>2</td>
</tr>
<tr>
<td>NURS 724</td>
<td>Health Assessment Practicum</td>
<td>1</td>
</tr>
<tr>
<td>NURS 761</td>
<td>Pharmacotherapeutics</td>
<td>3</td>
</tr>
<tr>
<td>NURS 769</td>
<td>Physiology and Pathophysiology in Advanced Practice</td>
<td>3</td>
</tr>
<tr>
<td>NURS 713</td>
<td>Decision Making and Pharmacologic Management in Practice</td>
<td>3</td>
</tr>
<tr>
<td>NURS 787</td>
<td>Adult Gerontology Primary Care I</td>
<td>2</td>
</tr>
<tr>
<td>NURS 786</td>
<td>Adult Gerontology Primary Care Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>NURS 789</td>
<td>Adult Gerontology Primary Care II</td>
<td>3</td>
</tr>
<tr>
<td>NURS 788</td>
<td>Adult Gerontology Primary Care Practicum II</td>
<td>4</td>
</tr>
<tr>
<td>NURS 791</td>
<td>Adult Gerontology Primary Care III</td>
<td>4</td>
</tr>
<tr>
<td>NURS 790</td>
<td>Adult Gerontology Primary Care Practicum III</td>
<td>4</td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>NURS 921</td>
<td>Clinical Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>Two credits of</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>NURS 922</td>
<td>Clinical Practicum II</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits 36

Concentration in Family Nurse Practitioner (FNUP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
<td>2</td>
</tr>
<tr>
<td>NURS 724</td>
<td>Health Assessment Practicum</td>
<td>1</td>
</tr>
<tr>
<td>NURS 761</td>
<td>Pharmacotherapeutics</td>
<td>3</td>
</tr>
<tr>
<td>NURS 769</td>
<td>Physiology and Pathophysiology in Advanced Practice</td>
<td>3</td>
</tr>
<tr>
<td>NURS 713</td>
<td>Decision Making and Pharmacologic Management in Practice</td>
<td>3</td>
</tr>
<tr>
<td>NURS 738</td>
<td>Family Primary Care I</td>
<td>2</td>
</tr>
<tr>
<td>NURS 742</td>
<td>Family Primary Care Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>NURS 739</td>
<td>Family Primary Care II</td>
<td>4</td>
</tr>
<tr>
<td>NURS 744</td>
<td>Family Primary Care Practicum II</td>
<td>4</td>
</tr>
<tr>
<td>NURS 741</td>
<td>Family Primary Care III</td>
<td>3</td>
</tr>
<tr>
<td>NURS 749</td>
<td>Family Primary Care Practicum III</td>
<td>4</td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>NURS 921</td>
<td>Clinical Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>Two credits of</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>NURS 922</td>
<td>Clinical Practicum II</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits 36

Concentration in Psychiatric Mental Health Nurse Practitioner (PMHN)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
<td>2</td>
</tr>
<tr>
<td>NURS 724</td>
<td>Health Assessment Practicum</td>
<td>1</td>
</tr>
<tr>
<td>NURS 761</td>
<td>Pharmacotherapeutics</td>
<td>3</td>
</tr>
</tbody>
</table>
DNP Project
The final step in completion of the degree is the implementation of a DNP project in the practice inquiry courses. The proposal for this project must be prepared with ample time for submission to the Human Subjects Review Board at George Mason University. One School of Nursing faculty member will serve as chair for the project. The student must demonstrate competence of the AACN Essentials of Doctoral Education for Advanced Nursing Practice (2006) by planning, developing, and implementing a scholarly DNP project that uses evidence to inform practice.

Master's to DNP Curriculum
Students in the master's to DNP program will complete 72 credits. Up to 30 hours of relevant graduate credit may be awarded for past master's-level courses, and students will complete the remaining minimum of 42 additional credits following the curriculum below.

The core essentials build on previous master's education and must be completed in the first year of full-time study or two years of part-time study. They prepare the student to develop and implement the DNP project in the final two semesters of study. The core essentials for master's to DNP students will be individualized based on the content from the student's master's degree academic program.

Students must complete 1,000 hours of precepted or mentored practice including those obtained during previous master's education (individually awarded based on evaluation of master's clinical hours up to 600 hours). Students also must take additional electives to meet the total requirement of 72 credits required to complete the program.

Students may add one of the following concentrations to their DNP application: Adult-Gerontology Nurse Practitioner, Family Nurse Practitioner, Psychiatric Mental Health Nurse Practitioner, Nursing Administration, or Advanced Clinical Nursing.

NURS 769 Physiology and Pathophysiology in Advanced Practice 3
NURS 632 Pathogenesis of Mental Disorders 3
NURS 633 Individual Psychotherapy 3
NURS 634 Group, Family and Couple Psychotherapy 1
NURS 743 Clinical Psychopharmacology 3
NURS 782 Psychiatric Nurse Practitioner Practicum I 4
NURS 783 Psychiatric Nurse Practitioner Seminar I 2
NURS 784 Psychiatric Nurse Practitioner Practicum II 5
NURS 785 Psychiatric Nurse Practitioner Seminar II 2

Two credits of 2
NURS 921 Clinical Practicum I
Two credits of 2
NURS 922 Clinical Practicum II

Total Credits 36

Level II Core Essentials Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 654</td>
<td>Nursing Administration Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>NURS 715</td>
<td>Nursing Informatics Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>NURS 758</td>
<td>Nursing Research and Biostatistics II</td>
<td>3</td>
</tr>
<tr>
<td>NURS 808</td>
<td>Translating Nursing and Health Care Research into Evidence-Based Policy</td>
<td>3</td>
</tr>
<tr>
<td>NURS 870</td>
<td>Nursing and Health Care Administration I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 883</td>
<td>Evidence-Based Practice in Nursing and Healthcare</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 19

Advanced Practice Competency Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>NURS 921</td>
<td>Clinical Practicum I</td>
<td>1-10</td>
</tr>
<tr>
<td>NURS 922</td>
<td>Clinical Practicum II</td>
<td>1-10</td>
</tr>
</tbody>
</table>

Total Credits 2-20

DNP Project
The final step in completion of the degree is the implementation of a DNP project in the practice inquiry courses. The proposal for this project must be prepared with ample time for submission to the Human Subjects Review Board at George Mason University. One School of Nursing faculty member will serve as chair for the project. The student must demonstrate competence of the AACN Essentials of Doctoral Education for Advanced Nursing Practice (2006) by planning, developing, and implementing a scholarly DNP project that uses evidence to inform practice.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 980</td>
<td>Practice Inquiry I</td>
<td>4</td>
</tr>
<tr>
<td>NURS 981</td>
<td>Practice Inquiry II</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 8

Electives
If needed, elective courses should be taken to complete the required 42 program credits. All electives must be approved by the advisor prior to the start of the course.

Nursing, PhD
Banner Code: HH-PHD-NURS

Academic Advising
Website: https://chhs.gmu.edu/students/academic-advising/graduate-advising#nurs

The PhD in Nursing program builds on the MSN degree and requires a total of 78 credit hours of work (a minimum of 48 credit hours beyond the master's). The objective of the program is to prepare nursing scholars who will pursue intellectual inquiry and conduct research for the purpose of extending knowledge to contribute to the health of all populations. Graduates of the program conduct independent and collaborative research, advance nursing science, and provide leadership to the nursing profession.
Admissions & Policies

Admissions
Requirements
Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and must apply using the online Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). Nursing PhD applicants must hold a master’s degree in nursing from an accredited program equivalent to 30 credits or a master’s degree in a related health field with a baccalaureate degree in nursing. Applicants also must hold a valid, current nursing license in a U.S. state or territory; waivers for international applicants will be determined by the assistant dean for doctoral programs. Applicants must have a 3.00 GPA or higher on a 4.00 scale in their master’s program. Applicants also must have completed a graduate-level course in statistics in the past two years with a final grade of 3.00 or higher or will be required to complete NURS 757 Nursing Research and Biostatistics I before beginning PhD coursework. The application process is competitive, and applications are considered for the fall semester only. For application deadlines and detailed application requirements, refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines).

Policies
Reduction of Credit
Students must have a master’s degree before being admitted to the PhD in Nursing program. Up to 30 hours of relevant graduate credit may be awarded for past master’s-level courses, and students will complete the minimum of 48 additional credits following the curriculum below.

Transfer of Credit
Students may transfer a maximum of 9 credits into the program from graduate courses taken at other institutions or taken at Mason in non-degree status, including courses offered through the college’s Academic Outreach program. Transfer credit is governed by university transfer of graduate credit policy and the university requirements for doctoral degrees, which can be found in AP6 Graduate Policies (p. 90). Transfer credit must be approved by the assistant dean for the doctoral division of the School of Nursing. Students who intend to apply to the PhD program and enroll initially through non-degree studies or the Academic Outreach program should seek course advising through the assistant dean for the doctoral division and apply to the PhD program as soon as possible.

Program Requirements
To complete the PhD in Nursing, students must:
• Complete the program of study outlined in the PhD curriculum.
• Pass a written doctoral candidacy comprehensive examination after completing all PhD course requirements, except NURS 998 Doctoral Dissertation Proposal and NURS 999 Doctoral Dissertation.
• Pass the oral dissertation proposal defense and submit a dissertation proposal approved by the doctoral dissertation committee.
• Pass the final oral dissertation defense and submit a doctoral dissertation. Consistent with university graduate academic policy, final approval of the dissertation must be given by the doctoral dissertation committee, the assistant dean for the doctoral division of the School of Nursing, the director of the School of Nursing, and the dean of the college. The dissertation is submitted in the approved format to University Libraries.
• Complete application material for graduation in accordance with prevailing Mason policies.

Professional Conduct
All students in the School of Nursing are expected to adhere to the Professional Conduct Policy (p. 245) of the College of Health and Human Services.

Grading
Throughout the semester, students are assessed on how well they have met curricular outcomes. Consistent with the university, the PhD in Nursing program does not provide a D grade. Final grades for all PhD in Nursing courses are submitted to the university as letter grades.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
<th>Graduate Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (90-100%)</td>
<td>4.00</td>
<td>Passing</td>
</tr>
<tr>
<td>B (80-89%)</td>
<td>3.00</td>
<td>Passing</td>
</tr>
<tr>
<td>C (70-79%)</td>
<td>2.00</td>
<td>Failing</td>
</tr>
<tr>
<td>F (69% or lower)</td>
<td>0.00</td>
<td>Failing</td>
</tr>
</tbody>
</table>

Time Requirements
Students must complete all requirements for the PhD in Nursing within 9 calendar years from the time of first enrollment as a doctoral student in the program or with provisional status. PhD students are expected to progress steadily toward their degree and to complete all coursework and the written comprehensive examination in order to advance to candidacy within no more than 6 years from first enrollment.

Academic Termination
A degree-seeking PhD in Nursing student is terminated from the program after earning unsatisfactory grades (below a 3.00) in two courses. Any core course in which a student earns a grade below a 3.00 must be repeated and may prevent the student from progressing any further in coursework; a core course may be repeated only once. A student may not repeat more than one course. Any cognate course in which a student earns a grade below 3.00 will not be counted towards the 9 credits needed to meet the cognate requirement for the PhD in Nursing. A student may also be terminated from the program due to a finding of violation of the university Honor Code (p. 104) or after demonstrating a significant lack of progress.

Requirements
Degree Requirements
Total credits: 78

The PhD in Nursing program of study is based on the student’s interests and career goals and on the expertise of the faculty. A student develops his/her program of research through core coursework, cognate courses, and dissertation research.

Scientific Base/Research Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 804</td>
<td>Advanced Quantitative Data Analysis for Healthcare Research I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 805</td>
<td>Advanced Quantitative Data Analysis for Healthcare Research II</td>
<td>3</td>
</tr>
</tbody>
</table>
HHS 810  Systematic Reviews of Healthcare Research 3
NURS 814  Theory and Design in Health Science 3
HHS 818  Advanced Ethics of Healthcare Research 3
HHS 825  Conducting and Publishing Healthcare Research 3
NURS 860  Measurement Theories in Healthcare Research 3
NURS 920  Qualitative Research in Nursing and Health Care 3
NURS 930  Quantitative Methods in Nursing and Health Care 3

Total Credits 27

Cognate Courses
Students must complete a cohesive set of existing doctoral-level cognate courses designed with their advisor or the assistant dean for the doctoral division to contribute to their program of research.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complete nine credits of cognate courses</td>
<td>9</td>
</tr>
</tbody>
</table>

Total Credits 9

Dissertation
The final requirement for the PhD degree in nursing is submission of an acceptable dissertation. The dissertation will be a report of an original, independent research project completed by the student and approved by the dissertation committee. During the process of writing the dissertation proposal, students must initially register for a minimum of 3 credits of NURS 998 Doctoral Dissertation Proposal; the student may repeat NURS 998 for variable credit (1-3 credits) until the proposal is successfully defended. The student must then register for at least 3 credits of NURS 999 Doctoral Dissertation per semester until the required 12 credits of NURS 998 and/or NURS 999 have been completed and the dissertation is completed.

Advancement to Candidacy
The student must complete all coursework, pass the comprehensive examination to advance to candidacy for the doctoral degree. The assistant dean for the doctoral division of the School of Nursing will approve the student’s program of study and recommend advancement to candidacy to the director of the School of Nursing, who will render final approval for candidacy. A student who is unsuccessful in passing the comprehensive examination will be provided only one additional opportunity to sit for the examination after completing a remediation plan approved by the assistant dean for the doctoral division. A student who fails the comprehensive examination a second time will be terminated from the program.

Dissertation Committee
With the advice of the assistant dean for the doctoral division of the School of Nursing, and approval of the director of the School of Nursing, the student will select a dissertation committee, composed of at least 3 members of the graduate faculty (as defined by the university), who will direct the dissertation research. The committee will be composed of a chair and at least two additional members who meet the criteria as established by university policy A.P.6.10.5 Dissertation Committee (p. 97).

Dissertation Proposal and Research

Dissertation Proposal
The student must initially enroll in 3 credits of NURS 998 Doctoral Dissertation Proposal, and, in consultation with the dissertation committee, write an acceptable dissertation proposal. If an acceptable proposal cannot be completed within the first semester the student is registered for the course, the student may continue working on the proposal under the direction of the committee, registering for at least one credit of NURS 998 each semester until the proposal is approved.

Dissertation Research
The dissertation will be a written report of original research in a content area of significance to the discipline of Nursing. As defined by the university, the dissertation demonstrates the candidate’s mastery of subject matter, methodologies, and conceptual foundations in their chosen field of study. The PhD in Nursing program requires that the dissertation meet the guidelines and content as specified by the University Library and also include at least two publishable manuscripts as approved by the dissertation committee. Once the student has successfully defended his/her dissertation proposal before the dissertation committee, the student may begin registering for NURS 999 Doctoral Dissertation. The student must register for at least 3 credits of NURS 999 per semester until the required 12 credits of NURS 998 and/or NURS 999 has been completed and the dissertation has been defended and officially submitted to the Library. Students who defend in the summer semester must be registered for at least three credits of NURS 999 for that summer semester.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>At least 12 credits of</td>
<td></td>
</tr>
<tr>
<td>NURS 998  Doctoral Dissertation Proposal 1</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>NURS 999  Doctoral Dissertation 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

1  Students must enroll for 3 credits the first time NURS 998 Doctoral Dissertation Proposal is taken.
2  Students must register for at least 3 credits of NURS 999 per semester.

Final Defense of the Dissertation
After the dissertation committee gives preliminary approval of the dissertation, the chair and assistant dean for the doctoral division of the School of Nursing to schedule a final public defense of the dissertation. A copy of the dissertation must be provided to the assistant dean for the doctoral division at least two weeks before the scheduled final dissertation defense. At the close of the defense, the committee makes a final judgment regarding approval of the dissertation. The dissertation must also be approved by the assistant dean for the doctoral division and director of the School of Nursing.

Additional Requirements
The student, with the approval of the chair and the assistant dean for the doctoral division of the School of Nursing is responsible for completing the application for graduation and submitting the final dissertation to the University Library by the appropriate deadlines. Failure to meet the required deadlines will result in the student not graduating during the intended semester.
Nursing Education Graduate Certificate

Banner Code: HH-CERG-NUED

Academic Advising

Website: https://nursing.gmu.edu/program/view/19938

This program combines foundation courses in education with courses in the principles and practices of nursing education. It prepares students to function in nursing educational roles in academic and nonacademic settings.

Admissions & Policies

Admissions

Applicants must hold a master’s degree in nursing. Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and apply using the Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). Acceptance to the nursing program is contingent upon admission to the university. The application process is competitive, and applications are considered for the fall and spring semesters. For application deadlines and detailed application requirements, please refer to the CHHS Admissions (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines) website.

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a part-time basis only.

Candidates must have 15 graduate credits and a minimum GPA of 3.00 in course work, with no more than 3 credits with a grade of C to earn the certificate.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 716</td>
<td>Principles of Assessment and Evaluation in Nursing Education</td>
<td>3</td>
</tr>
<tr>
<td>NURS 726</td>
<td>Perspectives in Nursing Education</td>
<td>3</td>
</tr>
<tr>
<td>NURS 727</td>
<td>Application of Nursing Education Principles to Curriculum and Program Development</td>
<td>3</td>
</tr>
<tr>
<td>NURS 728</td>
<td>Practicum and Seminar in Nursing Education I</td>
<td>3</td>
</tr>
<tr>
<td>NURS 729</td>
<td>Practicum and Seminar in Nursing Education II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Notes:

Students who qualify for a 3-credit practicum because of their educational experience may choose the remaining 3 credits from courses designated by the graduate nursing program.

Psychiatric Mental Health Nurse Practitioner Graduate Certificate

Banner Code: HH-CERG-PMHN

Academic Advising

Website: https://nursing.gmu.edu/program/view/21578

This certificate prepares students for the Psychiatric Mental Health Nurse Practitioner (PMHNP) role through formal study in the theory and practice of advanced practice psychiatric nursing in a variety of practice settings within the healthcare delivery system. Graduates will be eligible for prescriptive authority and will have the potential to perform a variety of mental health services including medication management and psychotherapy. Course and practice content focus on the assessment and management of serious mental illness.

Certification and Role

Graduates of this post-master’s certificate are eligible to sit for the Psychiatric Mental Health Nurse Practitioner national certification examination given by the American Nurses Credentialing Center.

Admissions & Policies

Admissions

Applicants must hold a master’s degree in nursing. Applicants must meet the admission standards and application requirements specified in the Graduate Admissions (p. 68) section of the catalog and apply using the Application for Graduate Admission (https://www2.gmu.edu/admissions-aid). Acceptance to the nursing program is contingent upon admission to the university. The application process is competitive, and applications are considered for the fall semester only. For application deadlines and detailed application requirements, please refer to CHHS Admissions (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines) website.

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements

Total credits: 23

This certificate may be pursued on a full-or part-time basis.

Candidates must complete 23 graduate credits with a minimum GPA of 3.00 in course work and no more than 3 credits with a grade of C to earn the certificate.
**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 632</td>
<td>Pathogenesis of Mental Disorders</td>
<td>3</td>
</tr>
<tr>
<td>NURS 633</td>
<td>Individual Psychotherapy</td>
<td>3</td>
</tr>
<tr>
<td>NURS 634</td>
<td>Group, Family and Couple Psychotherapy</td>
<td>1</td>
</tr>
<tr>
<td>NURS 743</td>
<td>Clinical Psychopharmacology</td>
<td>3</td>
</tr>
<tr>
<td>NURS 782</td>
<td>Psychiatric Nurse Practitioner Practicum I</td>
<td>4</td>
</tr>
<tr>
<td>NURS 783</td>
<td>Psychiatric Nurse Practitioner Seminar I</td>
<td>2</td>
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<tr>
<td>NURS 784</td>
<td>Psychiatric Nurse Practitioner Practicum II</td>
<td>5</td>
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<tr>
<td>NURS 785</td>
<td>Psychiatric Nurse Practitioner Seminar II</td>
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</table>

Total Credits: 23

**Additional Coursework for Certification**

Applicants who are not already certified as a nurse practitioner will be required to complete the following courses to sit for certification upon graduation:

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>NURS 714</td>
<td>Health Assessment in Clinical Practice</td>
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<td>NURS 724</td>
<td>Health Assessment Practicum</td>
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<td>NURS 761</td>
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<tr>
<td>NURS 769</td>
<td>Physiology and Pathophysiology in Advanced Practice</td>
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</tbody>
</table>

Total Credits: 9

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**College of Humanities and Social Sciences**

D201 Buchanan Hall  
Fairfax Campus  
MSN: 3A3  
Phone: 703-993-8720  
Website: chss.gmu.edu

**Administration**

- Ann Ardis, Dean  
- Vacant, Senior Associate Dean  
- Vita Chalk, Associate Dean for Undergraduate Academic Affairs  
- Michele Schwietz, Associate Dean for Research  
- Felicia Carr, Assistant Dean for Strategic Communications and Marketing  
- Katie Clare, Assistant Dean for Undergraduate Academic Affairs  
- Kevin Augustyn, Director of Development  
- Daniel Collier, Director of IT and Web Development  
- Kim Dight, Executive Director of Finance and Human Resources

**College Code: LA**

The College of Humanities and Social Sciences (CHSS) is composed of 10 departments and 9 major interdisciplinary programs. The college is also home to the School of Integrative Studies (p. 574), which offers an innovative interdisciplinary major. The college has a distinguished faculty of more than 400, including recipients of the Pulitzer Prize and Guggenheim Fellowship.

**Undergraduate Programs**

At the undergraduate level, all programs emphasize challenge, opportunity, and success. They challenge students to think critically and creatively and to go beyond what is required by pursuing research experiences, minors, double majors, honors in the major, and accelerated master’s degree programs, which enable them to earn both an undergraduate and a graduate degree, often within five years. They provide many opportunities beyond the classroom including study abroad programs, service learning, internships, and career-enhancing courses and minors, all of which will help prepare them for success beyond college.

**Graduate Programs**

At the graduate level, programs of study provide opportunities for career development and advancement, professional education, participation in research, and personal fulfillment.

All programs encourage the exploration of contemporary issues through a dynamic curriculum that fosters an informed understanding of real world problems. The college provides students with an education that enables them to think critically, adapt to the changing conditions of society, and provide informed leadership to future generations.

**Bachelor’s/Accelerated Master’s Degree Options**

Many graduate programs offer highly-qualified undergraduates the opportunity to apply to accelerated master’s degree programs. Students accepted into an accelerated master’s degree program obtain both a bachelor’s and a master’s degree after satisfactory completion of 144 - 150 credits (number of required credits depends on the degree program).

Students admitted to an accelerated master’s degree program may use up to six graduate credits (courses at the 500 or 600 level) in partial fulfillment of requirements for the undergraduate degree. Upon completion and conferral of the undergraduate degree with satisfactory performance in graduate courses (minimum grade of 3.00 in each), students are given advanced standing in their master’s program. Once admitted to an accelerated master’s pathway, undergraduate students must maintain a semester GPA of at least 3.0 and an overall cumulative GPA of 3.25. Individual programs may have higher performance standards; students should familiarize themselves with the standards of their intended program.

Undergraduates may take a maximum of six additional graduate credits while undergraduates and mark them for reserve graduate credit. These credits are not used to fulfill undergraduate degree requirements but can be applied to the master’s degree. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79). Courses taken for reserve graduate credit must be approved in advance by the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu) and the appropriate paperwork filed with the Office of the University Registrar.

Students must fulfill all other master’s degree requirements. For more information see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

The college offers accelerated master’s degrees in these disciplines:

- Anthropology  
- Art History  
- Communication
• Criminal Justice
• Economics
• English with a concentration in linguistics
• Foreign Languages with a concentration in Spanish
• Foreign Languages with a concentration in Spanish/Bilingual-Multicultural Education
• Global Affairs
• History
• Interdisciplinary Studies with a concentration in energy and sustainability
• Interdisciplinary Studies with a concentration in folklore studies
• Interdisciplinary Studies with a concentration in religion, culture, and values
• Interdisciplinary Studies with a concentration in social justice and human rights
• Interdisciplinary Studies with a concentration in women and gender studies
• Middle East and Islamic Studies
• Philosophy
• Psychology with a concentration in cognitive and behavioral neuroscience
• Sociology

Minors and Interdisciplinary Minors
The College of Humanities and Social Sciences has more than 60 minors, some of which are offered jointly with other units in the university. Minors require between 15 and 21 credits, and all but 8 of those credits usually can be used simultaneously to fill other requirements. The college encourages all students to declare a minor, if they can. A minor can complement the major, enhance career preparation, allow students to develop a secondary area of expertise, or give them a chance to explore a passion.

The college offers two types of minors: disciplinary and interdisciplinary. The coursework for disciplinary minors comes mainly from a single discipline. Disciplinary minors are offered by one of the 10 departments in the college.

Interdisciplinary minors require course work from two or more disciplines and are administered by interdepartmental faculty groups, often including faculty from across the university.

All minors in the college are available to students in any major in the university. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Disciplinary Minors
• Arabic
• Anthropology
• Art History
• Chinese
• Clinical Psychology
• Communication
• Criminology, Law and Society
• Developmental Psychology
• Economics
• English
• Forensic Psychology
• French
• German Studies
• Health Communication
• Health Psychology
• History
• Industrial/Organizational Psychology
• Intelligence Analysis
• Italian Studies
• Journalism
• Judaic Studies
• Korean Studies
• Latin
• Linguistics
• Philosophy
• Philosophy and Law
• Professional Experience in Communication
• Professional and Technical Writing
• Psychology
• Religious Studies
• Russian
• Sociology
• Spanish
• Teaching English as a Second Language

Interdisciplinary Minors
• African and African American Studies
• Ancient Mediterranean Art and Archaeology
• Asia-Pacific and Northeast Asian Studies
• Conservation Studies (offered jointly with the College of Science)
• Childhood Studies
• Classical Studies
• Film and Media Studies
• Folklore and Mythology
• Global Affairs
• Human Development and Family Science (offered jointly with the College of Education and Human Development)
• Immigration Studies
• Islamic Studies
• Japanese Studies
• Latin American Studies
• Leadership
• LGBTQ Studies
• Middle East Studies
• Multimedia
• Native American and Indigenous Studies
• Nonprofit Studies
• Political Communication (offered jointly with the Schar School of Policy and Government)
• Political Philosophy
• Social Innovation
• Social Justice
• Sport and American Culture (offered jointly with the School of Recreation, Health, and Tourism)
• Sport Communication (offered jointly with the School of Recreation, Health, and Tourism)
• Sustainability Studies (offered jointly with the College of Science)
• Well-Being
• Women and Gender Studies

Requirements & Policies

Policies for All Students

The requirements for each academic program offered by the college are described in the sections for the sponsoring departments and programs. All students are subject to the policies stated in Academic Policies (p. 77). Additional policies and procedures for students in the college are presented in this section.

Mason uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail account, use it to communicate with their department and other administrative units, and check it regularly for important information.

Registration and Degree Audit

Students are responsible for correctly registering for courses and paying all tuition and fees by the official university registration and payment deadlines. Instructors do not have the authority to add students to courses, and students may not sit in on classes for which they are not registered. All students should verify the accuracy of their enrollment before the end of the add period and should check Patriot Web (https://patriotweb.gmu.edu) to verify that they are registered for the classes that they think they are.

All students are responsible for reviewing their own transcripts and degree audits regularly to ensure that they are correct and that they are on track to meet all their requirements.

Withdrawal

Students are responsible for all courses in which they remain officially enrolled once the drop period has ended. Instructors do not have the authority to withdraw students from classes. Withdrawals after the published deadlines require the approval of the relevant dean (undergraduate academic affairs or graduate academic affairs) and are allowed only for full semesters at a time (a withdrawal from all enrolled courses). Withdrawals are only permitted for non-academic reasons; no withdrawals can be approved for academic reasons. When submitting a withdrawal request, students must provide verifiable, third-party documentation for the reason for the withdrawal. Requests for withdrawals should be submitted as early in the semester as possible; withdrawal requests submitted after the last day of classes are rarely approved.

Grade Appeals

Grade appeals should be made to the department or program following the process specified in AP.6.9 Grade Appeals (p. 85). If they are resolved within the department or program, that unit is the final level of appeal. The departmental decision may be appealed to the dean only on the basis of procedural irregularity. Undergraduate students should address such appeals through the Office of Undergraduate Academic Affairs and graduate students through the Office of Graduate Academic Affairs. If the grade appeal is not resolved within the department or program, the chair makes a recommendation to the dean, who makes the final determination. The decision of the dean is not subject to review or further appeal.

Accommodations for Students with Disabilities

Students with documented disabilities should contact the Office of Disability Services (http://ods.gmu.edu) to open a file and learn more about accommodations that may be available to them.

Policies for Undergraduate Students

The college offers 17 bachelor of arts (BA) degrees, 4 bachelor of science (BS) degrees, a bachelor of fine arts in creative writing (BFA), and a bachelor of individualized study (BIS) degree.

All students must complete 120 credits, of which at least 45 must be in upper-level courses (numbered 300 and above). At least one course at the 300 or 400 level must be designated "writing intensive."

Students should consult the Mason Core (p. 142) and College Requirements for information concerning the ways they can fulfill Mason Core and college requirements for undergraduate degrees. Transfer students are encouraged to meet with their academic advisor prior to registering for classes to review their transcripts and course equivalencies. In some cases, students may need to earn more than 120 credits to complete all of their requirements.

The college cooperates with the School for Conflict Analysis and Resolution (S-CAR) to provide courses from various disciplines in the college toward a BA, BS, and minor in conflict analysis and resolution. More information about S-CAR undergraduate degree programs can be found in the School for Conflict Analysis and Resolution (p. 936).

Questions about Academic Policies for Undergraduates

Students with questions about exceptions to academic policies and about college requirements should contact the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu) (703-993-8725; chssdean@gmu.edu).

Additional policy information and forms are available online from the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Academic Load

Students should review university policies regarding academic load in AP1.2 Academic Load (p. 77).

In order to be considered for an overload, students must fulfill all of the following criteria:

• Be in good academic standing;
• Have completed the prior semester with no course grades below “C” and with a minimum term GPA of 2.50;
• Have a cumulative GPA of 2.50 or higher;
• Have demonstrated the ability to handle an increased and demanding course load while maintaining high performance in a previous semester at Mason; and
• Have no remaining incompletes (INs) from a previous semester.

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.
If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

**Excluded Courses and Credits**

Students are encouraged to take advantage of the many excellent courses available at Mason to broaden their educational experience or strengthen their background; however, some credits earned may not satisfy any degree requirements. Only MLSC courses at the 400-level can be used for credit for a degree in the college; credit for other MLSC courses may not be used toward a CHSS degree. At most 3 credits of 100-level RECR coursework may be taken to satisfy the degree requirements of any CHSS major, and these courses will be applied toward a student's general electives. Whenever there is uncertainty, students must consult with an academic advisor in their department.

Qualifying CLEP credits may apply to a degree in the College of Humanities and Social Science if those credits were awarded and reported prior to matriculation at Mason. After matriculation, students are limited to taking and applying credits for the CLEP exam in "Information Systems & Computer Applications". Students with a qualifying score on this exam will be awarded credit for IT 104T. Students receiving credit for IT 104T, who are subject to a prior catalog year, must still meet the university Information Technology ethics requirement. The Office of Admissions will continue to evaluate transfer credit for CLEP exams for new students applying to the University. Current students should contact their CHSS academic advisor with any questions regarding CLEP credit.

**University Consortium**

Students should review university policies regarding the University Consortium under AP 1.4 Special Registration Procedures (p. 77) in the Academic Policies section. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstances. All consortium registration requests must be submitted to the dean's office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

**Permission to Study at Another Regionally Accredited U.S. Institution**

Once enrolled in degree status at Mason, students with fewer than 60 hours of transfer coursework (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Global Education Office) may take up to 8 hours of coursework at another institution. Students with 60 or more hours of transfer coursework are not permitted to take additional coursework at another institution. A student may seek permission for additional hours beyond these limits for summer registration if his/her permanent residence is more than 50 miles from the George Mason University Fairfax campus. See AP 1.4.2 Permission to Study Elsewhere (p. 79) for additional information.

In addition to the university cumulative GPA requirement of 2.00, CHSS students requesting course elsewhere permission must have a previous semester GPA of 2.00 or higher.

**Study Abroad**

In order to be considered for study through Mason Study Abroad (http://masonabroad.gmu.edu), students must plan well in advance and receive prior, written permission from the dean. Students must also meet all of the following criteria:

- Meet all eligibility requirements for their program as specified by Mason Study Abroad (http://masonabroad.gmu.edu) including course prerequisites and minimum GPA;
- Must have a minimum cumulative GPA of 2.50 after prior semester grades post to record; and
- Have completed the necessary forms and have obtained all required signatures and course equivalencies.

Students in danger of probation, suspension, or dismissal should plan very carefully before requesting to study abroad. Students with a cumulative GPA below 2.50 (after grades from prior term are posted to transcript) will not be permitted to study abroad.

**Leave of Absence**

All undergraduate students who are planning an absence from George Mason University must submit a formal request for Leave of Absence to the Office of the University Registrar. See AP 1.8 Undergraduate Leave of Absence (p. 81) for full university policy.

**Reserve Graduate Credit**

Approval to register for reserve graduate credit (earned credit held in reserve to apply later toward a graduate degree) is given only to Mason seniors within 15 credits of completing undergraduate study who have successfully completed all course prerequisites. In addition, this privilege is normally extended only to seniors who have completed at least 12 credits at the university, have a cumulative GPA of 3.00 or better, and have a major in the department offering the course. Approval for reserve graduate credit is limited to 6 credits and does not imply approval for admission into a Mason graduate program or that credit earned will be accepted at another graduate school.

**Withdrawals**

Students should review AP 1.5 Withdrawal (p. 81) for more information. Courses for which a withdrawal is approved receive a grade of "W." Students should be aware of the potential consequences of withdrawing on their academic standing. Though credits graded "W" do not affect a student's GPA, they do count towards the total attempted hours. The total attempted hours and cumulative GPA together determine a student's academic standing. These are explained in AP 5.2 Academic Standing (p. 88).

**Academic Clemency**

Students should review the university policies in AP 5.2.9 Academic Clemency (p. 89).

To be considered for clemency, students must meet all of the following criteria:

- Be absent from George Mason for a minimum of three consecutive calendar years;
- Provide a detailed explanation for why they were unsuccessful in those courses and how they have made changes to ensure their academic progress upon their return;
- Submit their request within 12 months of the first day of the re-enrollment term;
- Complete at least 6 credits during their first 12 months back at George Mason; and
- Earn a minimum GPA of 2.50 each semester back prior to making the clemency request with no individual grade below 2.00.
If the last three minimum academic requirements are not met, clemency will not be allowed under any circumstances.

**Appeals Process**

Students may appeal departmental decisions concerning academic actions to the Office of Undergraduate Academic Affairs. They may appeal decisions of the Office of Undergraduate Academic Affairs to the Dean’s Council, a committee composed of college deans and faculty members. Students may appeal decisions of the Dean’s Council to the Student Policies and Appeals Committee, a standing committee elected by the college faculty. These levels of appeal are subject to the limits below concerning the final level of appeal for each type of academic action. Students who feel that the college appeal process was conducted unfairly may appeal to the Provost’s Office as specified in Appeals of Academic Procedures (p. 101).

The grade appeal process is discussed above.

Departments set the requirements for the majors and minors that they administer. Substitutions and waivers of these requirements require the approval of the Office of Undergraduate Academic Affairs. When a department denies a substitution or waiver of a requirement, the denial may be appealed to the Office of Undergraduate Academic Affairs on the basis of procedural irregularity only. That office is the final level of appeal.

The Dean’s Council is the final level of appeal for course overloads, consortium registration, study elsewhere, and withdrawals after the drop deadline within the semester. Appeals of these decisions may be made to the Student Policies and Appeals Committee on the basis of procedural irregularity only, and the committee is the final level of appeal on procedural grounds.

Student Policies and Appeals Committee is the final level of appeal for college-level requirements, retroactive actions (adds, withdrawals, and graduation), and return from suspension and dismissal. This committee is the final level of approval.

There is no waiver or appeal of satisfactory performance standards [minimum grades or grade point average (GPA)] that have been set by the department or program faculty for the courses in their major or minor.

Students should file all appeals in a timely manner, usually within the semester in which the original decision is rendered, but no later than the final day of classes of the following semester.

**Teacher Licensure**

Students who plan to seek teacher licensure and become K–12 teachers should consult College of Education and Human Development (p. 161) and attend an information session early in their undergraduate career. For more information, call 703-993-2892, e-mail cehdgrad@gmu.edu, or see the College of Education and Human Development webpage (http://gse.gmu.edu).

**Second Bachelor’s Degree**

Students should review Application for a Second Bachelor’s Degree (p. 65) and AP5.3.3 Second Bachelor’s Degrees (p. 89) for more information. Students pursuing a second bachelor’s degree concurrently with their first bachelor’s degree at Mason must meet all the college-level requirements if they differ from the requirements in the college of their first major.

Students pursuing a second bachelor’s degree in the college after already having received one or more bachelor’s degrees are considered to have met all of the Mason Core requirements. Students pursuing a bachelor of science degree do not have additional college-level requirements. Students pursuing a bachelor of arts degree in the college must complete these additional college-level requirements: one additional 3-credits course each in philosophy or religious studies, in social and behavioral science, and in non-western culture (for a total of 9 credits). They must also demonstrate proficiency in a foreign language through the intermediate level. For more information about college-level requirements see Mason Core (p. 142) and College Requirements.

**Minors**

Students may elect to take a minor in addition to their major field of study. For policies governing all minors, AP5.3.4 Minors (p. 90). Students interested in earning a minor should complete the appropriate section of the Change/Declaration of Academic Program form and submit it to the Office of the University Registrar. See All about Minors (http://chss.gmu.edu/minors) for more information.

**College-Level Requirements for Undergraduate Students**

**Bachelor of Arts**

The BA degree provides students with a breadth of knowledge as well as the necessary skills to make in-depth study of a major truly meaningful. In addition to the Mason Core program, students pursuing a BA degree must complete the course work below. Except where expressly prohibited, a course used to fulfill a college-level requirement may also be used simultaneously to satisfy other requirements (Mason Core requirements or requirements for the major).

- Philosophy or religious studies: 3 credits fulfilled by any course in philosophy or religious studies (PHIL, RELI) except for, PHIL 323 Classical Western Political Theory, PHIL 324 Modern Western Political Theory, PHIL 327 Contemporary Western Political Theory, PHIL 393 Humanities College to Career, PHIL 460 Senior Seminar in Philosophy, Politics, and Economics. PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature requirement.
- Social and behavioral science: 3 credits in addition to the university-wide requirement in social and behavioral science for a total of 6 credits. The two courses used to fulfill the combined college and university requirements must be from different disciplines in the social and behavioral sciences. This requirement may be fulfilled by completing any course in ANTH, CRIM, ECON, GOVT, HIST (except HIST 100 History of Western Civilization (Mason Core) (p. 142) or HIST 125 Introduction to World History (Mason Core) (p. 142)), LING, PSYC, or SOCI and these courses in GGS:

<table>
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<th>Code</th>
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<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
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<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
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<td>Political Geography</td>
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<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
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<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
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<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
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</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
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</tbody>
</table>
• Foreign language: intermediate-level proficiency in one foreign language. This requirement may be fulfilled by completing a course in a foreign language numbered 202 (p. 424) (or higher level courses taught in the language) or achieving a satisfactory score on an approved proficiency test. A three course sequence (12 credits) in American Sign Language (EDSE 115 American Sign Language (ASL) I, EDSE 116 American Sign Language (ASL) II, and EDSE 219 American Sign Language (ASL) III) will also meet the foreign language requirement. Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

• Non-Western culture: 3 credits of an approved course in the study of a non-Western culture in addition to the course used to fulfill the Mason Core requirement in global understanding. A course used to fulfill the Mason Core global understanding requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

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<td>ANTH 300</td>
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<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
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<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
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<td>Zombies</td>
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<td>Peoples and Cultures of Selected Regions: Non-Western</td>
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<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
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<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
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<td>Survey of Arabic Literature</td>
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<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
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<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<td>Survey of African Art (Mason Core) (p. 142)</td>
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<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>Arts of China (Mason Core) (p. 142)</td>
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<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>RS: Advanced Studies in Asian Art</td>
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<td>Major Chinese Writers (Mason Core)</td>
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<td>World Dance (Mason Core) (p. 142)</td>
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<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<td>GOVT 328</td>
<td>Global Political Theory</td>
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<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
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<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
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<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
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<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
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<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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HIST 261 Survey of African History (Mason Core) (p. 142) 3
HIST 262 Survey of African History (Mason Core) (p. 142) 3
HIST 271 Survey of Latin American History (Mason Core) (p. 142) 3
HIST 272 Survey of Latin American History (Mason Core) (p. 142) 3
HIST 281 Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 282 Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 326 Stalinism 3
HIST 327 The Soviet Union and Russia Since World War II 3
HIST 328 Rise of Russia (Mason Core) (p. 142) 3
HIST 329 Modern Russia and the Soviet Union (Mason Core) (p. 142) 3
HIST 353 History of Traditional China 3
HIST 354 Modern China (Mason Core) (p. 142) 3
HIST 356 Modern Japan (Mason Core) (p. 142) 3
HIST 357 Postwar Japan (Mason Core) (p. 142) 3
HIST 358 Post-1949 China (Mason Core) (p. 142) 3
HIST 360 History of South Africa (Mason Core) (p. 142) 3
HIST 364 Revolution and Radical Politics in Latin America (Mason Core) (p. 142) 3
HIST 365 Conquest and Colonization in Latin America (Mason Core) (p. 142) 3
HIST 366 Comparative Slavery 3
HIST 367 History, Fiction, and Film in Latin America 3
HIST 387 Topics in Global History (Mason Core) (p. 142) 3
HIST 426 The Russian Revolution 3
HIST 460 Modern Iran (Mason Core) (p. 142) 3
HIST 461 Arab-Israeli Conflict 3
HIST 462 Women in Islamic Society (Mason Core) (p. 142) 3
HIST 465 The Middle East in the 20th Century 3
JAPA 310 Japanese Culture in a Global World (Mason Core) (p. 142) 3
JAPA 340 Topics in Japanese Literature (Mason Core) (p. 142) 3
KORE 320 Korean Popular Culture in a Global World 3
MUSI 103 Musics of the World (Mason Core) (p. 142) 3
RELI 211 Religions of the West (Mason Core) (p. 142) 3
RELI 212 Religions of Asia (Mason Core) (p. 142) 3
RELI 240 Death and the Afterlife in World Religions 3
RELI 272 Islam 3
RELI 313 Hinduism (Mason Core) (p. 142) 3
RELI 314 Chinese Philosophies and Religious Traditions 3
RELI 315 Buddhism (Mason Core) (p. 142) 3
RELI 337 Mysticism: East and West 3
RELI 365 Muhammad: Life and Legacy 3
RELI 374 Islamic Thought (Mason Core) (p. 142) 3
RELI 375 Qur’an and Hadith 3
RELI 379 Islamic Law, Society, and Ethics 3
RELI 387 Islam, Democracy, and Human Rights 3
RELI 490 Comparative Study of Religions (Mason Core) (p. 142) 3
RUSS 353 Russian Civilization (Mason Core) (p. 142) 3
RUSS 354 Contemporary Post-Soviet Life (Mason Core) (p. 142) 3

Requirements for each major are listed in the departmental sections.

Bachelor of Science
The BS degree provides students with a more intensive approach to the core technical questions of their majors. This curriculum has a reduced number of courses in humanities and social sciences in comparison with the BA degree to allow students to achieve greater depth in their majors. Students in Humanities and Social Sciences pursuing a BS must complete the Mason Core program. Requirements for each major are listed in the departmental sections.

Transfer Students
Admitted and enrolled transfer students who have completed an AA, AS, or AA&S degree from the Virginia Community College System (VCCS) and have been offered admission to Mason by the Office of Admissions may be eligible for a waiver of all George Mason University’s lower level Mason Core requirements in accordance with the Guaranteed Admission Agreement. Students eligible for this waiver are still required by the university to complete ENGH 302 Advanced Composition (Mason Core) (p. 142) and a synthesis course. Transfer students who have been offered admission under the terms of the Guaranteed Admission Agreement and are pursuing a degree in this college are considered to have met all college requirements except for proficiency in a foreign language (required of BA students).

Policies for Graduate Students
The college offers 16 master’s degrees, plus a master of arts in interdisciplinary studies (MAIS), a master of fine arts in creative writing (MFA), and 9 doctoral degrees.

Graduate Admission
Admission decisions are made by the faculty committee of the respective graduate program. Denial of admission is not subject to appeal. Applicants denied admission to a program are not permitted to enroll in courses in that program.

If an applicant is offered graduate admission, the college reserves the right to withdraw that offer of admission if:

- During his or her academic studies, the admitted applicant has a significant drop in academic performance or fails to graduate with a degree prior to the first day of classes for the term admitted.
- There has been a misrepresentation in the application process.
- Prior to the first day of classes for the term admitted, the college learns that the admitted applicant has engaged in behavior that indicates a serious lack of judgment or integrity, irrespective of the outcome of any disciplinary process related to such behavior.
· For students admitted to an accelerated master's program, the student does not maintain satisfactory progress in his or her undergraduate program, does not receive a minimum grade of 3.00 in the graduate classes taken as an undergraduate, or otherwise does not meet the conditions specified on the application and admission letter.

The university further reserves the right to require the applicant to provide additional information (and/or authorization for the release of information) about any such matter.

**Provisional Admission**

Students provisionally admitted to their graduate degree program are not eligible to enroll in consortium course work or study at another institution until the conditions of the provisional contract have been met. Provisionally admitted students are also not eligible to participate in any study abroad programs until the conditions of the provisional contract have been met. Transfer of credit requests for course work taken in non-degree status at Mason or from another institution prior to admission will not be considered until the provisional contract has been fulfilled.

**Academic Load**

Graduate students can enroll in up to 12 credits of course work each semester. Non-degree students can enroll in up to 10 credits of course work each semester.

**Non-Degree Enrollment**

Graduate non-degree students may enroll in 500, 600, and 700 level courses. In exceptional cases graduate non-degree students in the College of Humanities and Social Sciences may request to enroll in an 800-level course if they have an appropriate academic or professional background and have the written permission of the course instructor, director of the graduate program offering the course, and the graduate dean.

**University Consortium**

Students should review university policies regarding the University Consortium AP.1.4 Special Registration Procedures (p. 77).

Eligible students may enroll in courses at any of the institutions in the Consortium of Universities in the Washington Metropolitan area. Students are limited to one consortium course per semester, with a career maximum of 6 credits. To register for a consortium course, students must have an overall GPA of at least 3.00 and be in good academic standing. Students with grades of IN on their record or who earned grades of C or F in the most recent semester are not eligible to register for a consortium course. Students who have received a grade less than 3.00 in a consortium course are not permitted to enroll in additional consortium courses. Newly admitted graduate students are not permitted to enroll in consortium courses during their first semester of graduate study. Students who wish to enroll in consortium courses during their second semester of study must wait until the grades for the previous semester have been posted.

**Transfer of Credit**

To be eligible for transfer, credits must have been earned at an accredited graduate degree-granting institution (and applicable to a graduate degree at that institution) or at Mason while in non-degree status. Courses accepted for transfer credit must have been completed within six years of the admission term and with a minimum grade of 3.00. Courses with grades of P or S are not accepted for transfer unless the official transcript indicates that the grade is equivalent to a 3.00 (B) or better.

Some programs have more stringent standards on transfer of credit; students should contact their graduate program for specific information.

**Reduction of Credit**

Doctoral and master's students in the college may request a reduction of credit based on a previously conferred graduate degree. Not all master's programs in the college permit reduction of credit and some programs limit the number of credits that can be reduced. Further details and related restrictions can be found in AP.6.5.2 Reduction of Credits (p. 91).

**Credit from Other Institutions**

Students must obtain all approvals, including course equivalencies, prior to enrolling in any course work at another institution. All appropriate paperwork must be submitted to the Office of the University Registrar by the last day to add during the academic term the course meets. Students enrolling in courses at other institutions with different drop/add timetables must still abide by Mason’s drop/add deadlines in terms of acquiring necessary approvals.

**Dissertation Committee**

The college follows university policies regarding dissertation committees. See AP.6.10.5 Dissertation Committee (p. 97).

**Dissertation (999) Registration**

Doctoral students must be advanced to candidacy before they may enroll in 999. Students must register for 999 before the add deadline published in the Academic Calendar by the Office of the University Registrar (http://registrar.gmu.edu). Once doctoral students begin registering for 999, they must enroll in at least 3 credits of 999 each semester (excluding summers) until they have completed the total number of dissertation credits required for their individual program of study. Once enrolled in 999, all doctoral students must maintain continuous enrollment in 999 until they deposit their approved dissertation in the University Library. If they have completed the number of dissertation credits required on their program of study, they may maintain continuous enrollment by registering for only 1 credit of 999. Please see AP.6.10.6 Dissertation Registration (998, 999) (p. 98).

**Time Limit for Doctoral Students**

Total time to degree will not exceed nine (9) calendar years from the time of first enrollment as a doctoral degree-seeking student in a program of the college. Doctoral students are expected to progress steadily toward their degree and to advance to candidacy within no more than six (6) years.

Students who do not meet published time limits because of compelling circumstances may petition their program and the graduate dean for a single extension of one calendar year at any point during their program. If such an extension is granted, the total time limit for completion of the degree will not exceed ten (10) years. Requests for extension of time limits should explain the extenuating circumstances that prevented timely completion of the degree and a timeline for completing the remaining work within the limits of the extension. The request should include a letter from the student’s graduate program director indicating program support for the extension and confirmation that the work can be completed within the limits of the extension.

Please see AP.6.10.1 Time Limit (p. 97).

**Graduate Appeals of Termination**

All graduate students should be familiar with the university policies on termination as stated in AP.6.2 Academic Termination (p. 92). Students
who meet the criteria for termination may submit a written appeal to the Office of Graduate Academic Affairs. Appeals should include all relevant information on the basis for appeal, as well as any appropriate documentation. Appeals of termination are reviewed at the beginning of each semester by a faculty committee. The ruling of that committee represents the final decision of the college.

**Academic Units**

- African and African American Studies Program
- Cultural Studies Program
- Department of Communication
- Department of Criminology, Law and Society
- Department of Economics
- Department of English
- Department of History and Art History
- Department of Modern and Classical Languages
- Department of Philosophy
- Department of Psychology
- Department of Religious Studies
- Department of Sociology and Anthropology
- Global Affairs Program
- Higher Education Program
- Interdisciplinary Studies Program
- Latin American Studies Program
- Middle East and Islamic Studies Program
- Russian and Eurasian Studies Program
- School of Integrative Studies
- Smithsonian-Mason School of Conservation
- Women and Gender Studies Program

**Department of Communication**

Phone: 703-993-1090
Website: communication.gmu.edu

**Undergraduate Programs**

The department offers a bachelor of arts in communication, which prepares students for future graduate study or professional positions in such fields as human relations and organizational communication, media and journalism, political communication, and public relations.

Students majoring in communication complete a concentration from one of the following areas: interpersonal and organizational communication, journalism, media production and criticism, political communication, or public relations.

**Bachelor’s/Accelerated Master’s Program**

The department offers highly qualified undergraduate majors in communication the opportunity to apply to an accelerated master’s degree program in communication (p. 325). If accepted, students will be able to earn both the undergraduate and graduate degrees after satisfactory completion of 147 credits, generally within five years.

**Internships**

The department has an active internship program. Many students pursue an internship during their junior and/or senior year to earn credit while gaining practical experience with public relations firms, national and international businesses, associations, or government agencies.

**Student Activities**

All students are encouraged to participate in the following communication-related student activities: Communication Ambassadors, Debate, Forensics, Fourth Estate (student journalism), GMView, Mason Cable Network, Public Relations Student Society of America (PRSSA), Lambda Pi Eta, Society of Professional Journalists (SPJ), or WGMU.

**Minors**

The department offers minors in communication, health communication, journalism, political communication, professional experience in communication, and sport communication. The political communication minor is offered jointly with the Schar School of Policy and Government (p. 961), and the sport communication minor is offered jointly with the School of Recreation, Health, and Tourism (p. 221) in the College of Education and Human Development (p. 161). Department faculty also participate in these minors:

- Film and Media Studies Minor (p. 383)
- Multimedia Minor (p. 606)
- Well-Being Minor (p. 610)
- Women and Gender Studies Minor (p. 612)

Students majoring in communication may also choose to minor in any discipline that offers an undergraduate minor.

**Graduate Programs**

The department offers both MA and PhD degrees in communication with three major areas of emphasis: strategic communication, health communication, and science communication. The programs provide students with a strong foundation in communication theory and research while at the same time encouraging students to apply their skills in the public, private, and nonprofit sectors.

The faculty in strategic communication, drawing on their expertise in organizational, public relations, and political communication theory and research, teach courses on planning, developing, executing, and evaluating public communication campaigns and interventions. Faculty in health communication teach courses which explore the relationship between communication practices and the health and well-being of individuals and communities. This includes how to improve cooperation and coordination between health care providers and consumers, how to effectively utilize health information technologies, and how to develop influential health promotion campaigns. The faculty in science communication offer courses designed to improve students’ knowledge of the particular challenges involved in making science and technology understandable to a variety of audiences, as well as exploring solutions to those challenges. Science communicators work in media and in other organizations and agencies involved in promoting and disseminating science, as well as facilitating public engagement in considering science-related issues.

Strategic, health, and science communication are three of the most rapidly expanding specialties within the broad field of communication.
Graduates of these programs find a very welcoming employment market for their expertise.

**Funding**
The department offers graduate teaching and research assistantships, which are awarded on a competitive basis. Other sources of funding such as grants, loans, and employment on campus are also available. Students awarded assistantships must register for a minimum of six credits a semester and show satisfactory progress toward their degree.

**Faculty**

**Department Faculty**

**Professors**
Botan, Decker, Kreps, Lichter, Maibach, Nicotera (chair), Rowan, K. Wright, Zhao

**Emeritus Professors**
Boileau, Friedley, Looney, Lont, Manchester, McAuley, Taylor

**Associate Professors**
Broeckelman-Post, Cai, Clarke, Gibson (associate chair), Hopson, Muir

**Assistant Professors**
Craig, S. Kim

**Term Professor**
Tucker

**Term Associate Professor**
Finn, C. Wright

**Term Assistant Professor**
Mathis

**Term Research Assistant Professor**
Cook

**Term Instructors**
Miller, Samoilenko, Schmeidler, R. Smith, Steele, Sweeney, Tomasovic

**Programs**
- Communication Minor
- Communication, BA
- Communication, MA
- Communication, PhD
- Health Communication Minor
- Journalism Minor
- Political Communication Minor (CHSS)
- Professional Experience in Communication Minor
- Professional Writing and Editing Graduate Certificate (COMM)
- Sport Communication Minor (CHSS)

**Communication, BA**

Banner Code: LA-BA-COM

102 Northeast Module
Fairfax Campus

Email: cdadvice@gmu.edu
Website: communication.gmu.edu/programs/la-ba-com

Communication is the study of basic human social processes: the creation and dissemination of meaning and information. The major prepares students for graduate study or professional positions in such fields as interpersonal and organizational communication, journalism, media production and criticism, political communication, and public relations. Students develop skills and knowledge that put them at the edge of a rapidly changing communication industry. Majors learn to construct and evaluate messages across platforms—web, print, audio and visual.

**Admissions & Policies**

**Policies**

Students pursuing this degree must complete 39 credits within the major, with a minimum grade of C in each course.

Of the 39 credits applied to the major, no more than 10 credits may be from courses listed in the Degree Requirements. In addition to 12 credits of core courses, students take 21 credits of courses in a concentration and 6 credits of additional communication courses. Of these last 27 credits, at least 12 credits must be at the 300-400 level, no more than 6 credits may be in COMM 450 Internship in Communication, and no more than 3 credits may be in COMM 452 Media Production Practicum. COMM 479 Digital Media and Web Design Capstone cannot be used toward the major.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 314) tab.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>COMM 200</td>
<td>Communication Theory</td>
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<tr>
<td>COMM 300</td>
<td>Rhetorical Theory and Criticism ¹</td>
<td>3</td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 400</td>
<td>Research Methods in Communication ²</td>
<td>3</td>
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<tr>
<td>Total Credits</td>
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<td>12</td>
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</table>

¹ Must first complete COMM 200 Communication Theory with a grade of C or better.

² Must first complete COMM 200 Communication Theory with a grade of C or better.
Must first complete six credits from COMM 300 Rhetorical Theory and Criticism, COMM 301 Relational Communication Theory, or COMM 305 Foundations of Intercultural Communication (Mason Core) (p. 142) with a grade of C or better.

Concentration
Students must complete coursework in one concentration. Students may also declare a second concentration. No more than six credits can count between the two declared concentrations and no credits used within the declared concentration(s) can be used to satisfy communication elective credits. Students must declare a concentration before they earn more than 75 credits. Transfer students with 60 or more credits are encouraged to declare a concentration by the end of their first semester. COMM 399 Special Topics in Communication or other special topics courses from other concentrations may be applied toward a concentration when the topic is relevant to the concentration with prior written approval of the undergraduate director.

- Interpersonal and Organizational Communication (IOC) (p. 315)
- Journalism (JNL) (p. 315)
- Media Production and Criticism (MPC) (p. 315)
- Political Communication (PCOM) (p. 316)
- Public Relations (PR) (p. 316)

Concentration in Interpersonal and Organizational Communication (IOC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMM 301</td>
<td>Relational Communication Theory (core course)</td>
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<tr>
<td>COMM 335</td>
<td>Organizational Communication (core course)</td>
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</tr>
<tr>
<td>Select one course from the following:</td>
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<tr>
<td>COMM 201</td>
<td>Small Group Communication</td>
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<tr>
<td>COMM 332</td>
<td>Nonverbal Communication</td>
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<tr>
<td>COMM 401</td>
<td>Interpersonal Communication in the Workplace</td>
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<tr>
<td>Electives</td>
<td>Select 12 credits from the following:</td>
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<tr>
<td>COMM 201</td>
<td>Small Group Communication</td>
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<tr>
<td>COMM 230</td>
<td>Case Studies in Persuasion</td>
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<tr>
<td>COMM 304</td>
<td>Foundations of Health Communication</td>
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<tr>
<td>COMM 306</td>
<td>Issues in Intercultural Communication</td>
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<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
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<tr>
<td>COMM 332</td>
<td>Nonverbal Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 334</td>
<td>Family and Health Communication</td>
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<tr>
<td>COMM 367</td>
<td>Children and Media</td>
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<tr>
<td>COMM 385</td>
<td>Special Topics in Interpersonal and Organizational Communication</td>
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<tr>
<td>COMM 395</td>
<td>Special Topics in Health Communication</td>
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<tr>
<td>COMM 401</td>
<td>Interpersonal Communication in the Workplace</td>
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<tr>
<td>COMM 430</td>
<td>Persuasion</td>
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<td>COMM 433</td>
<td>Environmental Communication</td>
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<td>COMM 434</td>
<td>Interviewing</td>
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<td>COMM 435</td>
<td>Digital Communication</td>
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<td>COMM 440</td>
<td>Ceremonial Speech Writing and Performance</td>
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<td>COMM 465</td>
<td>Topics in Communication and Gender</td>
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Concentration in Journalism (JNL)

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<tr>
<td>COMM 203</td>
<td>Introduction to Journalism</td>
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<tr>
<td>COMM 303</td>
<td>Writing across the Media</td>
<td>3</td>
</tr>
<tr>
<td>COMM 454</td>
<td>Free Speech and Ethics (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>Select three credits from the following:</td>
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<tr>
<td>COMM 351</td>
<td>News Writing and Reporting</td>
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<tr>
<td>COMM 352</td>
<td>News Editing: Print and Beyond</td>
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<tr>
<td>COMM 361</td>
<td>Online Journalism</td>
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<tr>
<td>COMM 369</td>
<td>Multimedia Storytelling</td>
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<tr>
<td>Electives</td>
<td>Select 9 credits from the following:</td>
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<tr>
<td>COMM 145</td>
<td>Newspaper Workshop I</td>
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<tr>
<td>COMM 148</td>
<td>Radio Workshop I</td>
<td></td>
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<tr>
<td>COMM 157</td>
<td>Digital Media Workshop</td>
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<tr>
<td>COMM 302</td>
<td>Media Theory</td>
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<tr>
<td>COMM 345</td>
<td>Newspaper Workshop II</td>
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<tr>
<td>COMM 351</td>
<td>News Writing and Reporting (if not taken as a required course)</td>
<td></td>
</tr>
<tr>
<td>COMM 352</td>
<td>News Editing: Print and Beyond</td>
<td></td>
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<tr>
<td>COMM 353</td>
<td>Broadcast Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 356</td>
<td>Video: Performance and Writing</td>
<td></td>
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<tr>
<td>COMM 361</td>
<td>Online Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 369</td>
<td>Multimedia Storytelling (if not taken as a required course)</td>
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<tr>
<td>COMM 370</td>
<td>Feature Writing</td>
<td></td>
</tr>
<tr>
<td>COMM 371</td>
<td>Sports Writing and Reporting</td>
<td></td>
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<tr>
<td>COMM 373</td>
<td>Business and Economic Journalism</td>
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<td>COMM 374</td>
<td>Political Journalism</td>
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<tr>
<td>COMM 387</td>
<td>Special Topics in Journalism</td>
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<tr>
<td>COMM 455</td>
<td>History of Journalism</td>
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<tr>
<td>COMM 475</td>
<td>Journalism Law</td>
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</table>

Concentration in Media Production and Criticism (MPC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 208</td>
<td>Introduction to Media Production</td>
<td>3</td>
</tr>
<tr>
<td>COMM 302</td>
<td>Media Theory</td>
<td>3</td>
</tr>
<tr>
<td>COMM 360</td>
<td>Digital Postproduction</td>
<td>3</td>
</tr>
<tr>
<td>COMM 380</td>
<td>Media Criticism</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>Select 9 credits from the following:</td>
<td>9</td>
</tr>
<tr>
<td>COMM 148</td>
<td>Radio Workshop I</td>
<td></td>
</tr>
<tr>
<td>COMM 157</td>
<td>Digital Media Workshop</td>
<td></td>
</tr>
<tr>
<td>COMM 202</td>
<td>Media and Society</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------</td>
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</tr>
<tr>
<td>COMM 210</td>
<td>Voice and Articulation</td>
<td></td>
</tr>
<tr>
<td>COMM 255</td>
<td>Introduction to Media Literacy</td>
<td></td>
</tr>
<tr>
<td>COMM 303</td>
<td>Writing across the Media</td>
<td></td>
</tr>
<tr>
<td>COMM 310</td>
<td>Performance for Communication Arts</td>
<td></td>
</tr>
<tr>
<td>COMM 346</td>
<td>Yearbook Workshop</td>
<td></td>
</tr>
<tr>
<td>COMM 347</td>
<td>Cable TV Programming and Marketing</td>
<td></td>
</tr>
<tr>
<td>COMM 348</td>
<td>Radio Workshop II</td>
<td></td>
</tr>
<tr>
<td>COMM 350</td>
<td>Mass Communication and Public Policy</td>
<td></td>
</tr>
<tr>
<td>COMM 353</td>
<td>Broadcast Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 354</td>
<td>Radio Production and Podcasting</td>
<td></td>
</tr>
<tr>
<td>COMM 356</td>
<td>Video: Performance and Writing</td>
<td></td>
</tr>
<tr>
<td>COMM 358</td>
<td>Multi-Camera Studio Production</td>
<td></td>
</tr>
<tr>
<td>COMM 359</td>
<td>Media Management</td>
<td></td>
</tr>
<tr>
<td>COMM 363</td>
<td>Media Career Seminar</td>
<td></td>
</tr>
<tr>
<td>COMM 364</td>
<td>Videography</td>
<td></td>
</tr>
<tr>
<td>COMM 365</td>
<td>Gender, Race, and Class in the Media</td>
<td></td>
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<tr>
<td>COMM 366</td>
<td>Visual Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 367</td>
<td>Children and Media</td>
<td></td>
</tr>
<tr>
<td>COMM 372</td>
<td>Sports and the Media</td>
<td></td>
</tr>
<tr>
<td>COMM 375</td>
<td>Mass Communication Advertising and Promotions</td>
<td></td>
</tr>
<tr>
<td>COMM 396</td>
<td>Special Topics in Mass Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 397</td>
<td>Special Topics in Production</td>
<td></td>
</tr>
<tr>
<td>COMM 435</td>
<td>Digital Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 452</td>
<td>Media Production Practicum</td>
<td></td>
</tr>
<tr>
<td>COMM 456</td>
<td>Comparative Mass Media (Mason Core)</td>
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</tr>
</tbody>
</table>

**Total Credits**: 21

### Concentration in Political Communication (PCOM)

#### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 302</td>
<td>Media Theory</td>
<td>3</td>
</tr>
<tr>
<td>COMM 327</td>
<td>Political Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 430</td>
<td>Persuasion</td>
<td>3</td>
</tr>
<tr>
<td>COMM 454</td>
<td>Free Speech and Ethics (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 21

#### Electives

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 140</td>
<td>Forensics Seminar I</td>
<td></td>
</tr>
<tr>
<td>COMM 141</td>
<td>Forensics Seminar II</td>
<td></td>
</tr>
<tr>
<td>COMM 142</td>
<td>Debate Seminar I</td>
<td></td>
</tr>
<tr>
<td>COMM 143</td>
<td>Debate Seminar II</td>
<td></td>
</tr>
<tr>
<td>COMM 230</td>
<td>Case Studies in Persuasion</td>
<td></td>
</tr>
<tr>
<td>COMM 260</td>
<td>Basic Debate Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>COMM 261</td>
<td>Theories of Argumentation</td>
<td></td>
</tr>
<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 326</td>
<td>Rhetoric of Social Movements and Political Controversy (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 340</td>
<td>Forensics Seminar III</td>
<td></td>
</tr>
<tr>
<td>COMM 341</td>
<td>Forensics Seminar IV</td>
<td></td>
</tr>
<tr>
<td>COMM 342</td>
<td>Debate Seminar III</td>
<td></td>
</tr>
<tr>
<td>COMM 343</td>
<td>Debate Seminar IV</td>
<td></td>
</tr>
<tr>
<td>COMM 362</td>
<td>Argument and Public Policy (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>COMM 374</td>
<td>Political Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 380</td>
<td>Media Criticism</td>
<td></td>
</tr>
<tr>
<td>COMM 386</td>
<td>Special Topics in Political Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 412</td>
<td>Politics and the Mass Media</td>
<td></td>
</tr>
<tr>
<td>COMM 431</td>
<td>New Media and Democracy</td>
<td></td>
</tr>
<tr>
<td>COMM 433</td>
<td>Environmental Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 465</td>
<td>Topics in Communication and Gender</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 21

### Concentration in Public Relations (PR)

#### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>COMM 204</td>
<td>Introduction to Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>COMM 303</td>
<td>Writing across the Media</td>
<td>3</td>
</tr>
<tr>
<td>COMM 331</td>
<td>Public Relations Campaigns</td>
<td>3</td>
</tr>
<tr>
<td>COMM 430</td>
<td>Persuasion</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 21

#### Electives

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 202</td>
<td>Media and Society</td>
<td></td>
</tr>
<tr>
<td>COMM 230</td>
<td>Case Studies in Persuasion</td>
<td></td>
</tr>
<tr>
<td>COMM 260</td>
<td>Basic Debate Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>COMM 261</td>
<td>Theories of Argumentation</td>
<td></td>
</tr>
<tr>
<td>COMM 302</td>
<td>Media Theory</td>
<td></td>
</tr>
<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 335</td>
<td>Organizational Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 351</td>
<td>News Writing and Reporting</td>
<td></td>
</tr>
<tr>
<td>COMM 359</td>
<td>Media Management</td>
<td></td>
</tr>
<tr>
<td>COMM 362</td>
<td>Argument and Public Policy (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>COMM 375</td>
<td>Mass Communication Advertising and Promotions</td>
<td></td>
</tr>
<tr>
<td>COMM 384</td>
<td>Public Relations and Social Media</td>
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<tr>
<td>COMM 388</td>
<td>Special Topics in Public Relations</td>
<td></td>
</tr>
<tr>
<td>COMM 389</td>
<td>Public Relations for Associations and Nonprofits</td>
<td></td>
</tr>
<tr>
<td>COMM 390</td>
<td>Issues in Public Relations</td>
<td></td>
</tr>
<tr>
<td>COMM 391</td>
<td>Writing for Public Relations</td>
<td></td>
</tr>
<tr>
<td>COMM 392</td>
<td>Public Relations Study Abroad</td>
<td></td>
</tr>
<tr>
<td>COMM 411</td>
<td>Public Relations Practicum</td>
<td></td>
</tr>
<tr>
<td>COMM 433</td>
<td>Environmental Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 440</td>
<td>Ceremonial Speech Writing and Performance</td>
<td></td>
</tr>
<tr>
<td>COMM 454</td>
<td>Free Speech and Ethics (Mason Core)</td>
<td>(p. 142)</td>
</tr>
</tbody>
</table>

**Total Credits**: 21
Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select six credits of COMM courses in consultation with an advisor (p. 1417)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

1. COMM 100 Public Speaking (Mason Core) (p. 142) and COMM 101 Fundamentals of Communication (Mason Core) (p. 142) cannot be used to fulfill this requirement.

Courses Limited to 10 Credits

Of the 39 credits applied to the major, no more than 10 credits may be in these courses. In addition, no more than 6 credits of COMM 450 Internship in Communication or 3 credits of COMM 452 Media Production Practicum may be applied to the major.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 140</td>
<td>Forensics Seminar I</td>
<td></td>
</tr>
<tr>
<td>COMM 141</td>
<td>Forensics Seminar II</td>
<td></td>
</tr>
<tr>
<td>COMM 142</td>
<td>Debate Seminar I</td>
<td></td>
</tr>
<tr>
<td>COMM 143</td>
<td>Debate Seminar II</td>
<td></td>
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<tr>
<td>COMM 145</td>
<td>Newspaper Workshop I</td>
<td></td>
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<tr>
<td>COMM 148</td>
<td>Radio Workshop I</td>
<td></td>
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<tr>
<td>COMM 157</td>
<td>Digital Media Workshop</td>
<td></td>
</tr>
<tr>
<td>COMM 340</td>
<td>Forensics Seminar III</td>
<td></td>
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<tr>
<td>COMM 341</td>
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<td>COMM 342</td>
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<td>COMM 343</td>
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<tr>
<td>COMM 345</td>
<td>Newspaper Workshop II</td>
<td></td>
</tr>
<tr>
<td>COMM 346</td>
<td>Yearbook Workshop</td>
<td></td>
</tr>
<tr>
<td>COMM 348</td>
<td>Radio Workshop II</td>
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<tr>
<td>COMM 398</td>
<td>Research Practicum in Communication</td>
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<tr>
<td>COMM 450</td>
<td>Internship in Communication</td>
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<tr>
<td>COMM 451</td>
<td>Facilitating Communication Education</td>
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<tr>
<td>COMM 452</td>
<td>Media Production Practicum</td>
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</tr>
<tr>
<td>COMM 491</td>
<td>RS: Honors Research Project in Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 498</td>
<td>RS: Research Projects in Communication</td>
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</tr>
<tr>
<td>COMM 499</td>
<td>Independent Study in Communication</td>
<td></td>
</tr>
</tbody>
</table>

Writing-Intensive Requirement

The university requires all students to complete at least one course designated as writing intensive in their majors at the 300 level or above. Students majoring in communication fulfill this requirement by successfully completing COMM 300 Rhetorical Theory and Criticism.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

Upper Level Requirement

Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>PHIL</td>
<td>(p. 2044)</td>
<td>3</td>
</tr>
<tr>
<td>RELI</td>
<td>(p. 2144)</td>
<td></td>
</tr>
</tbody>
</table>

1. Note that the following courses may not be used to fulfill this requirement:
   - PHIL 323 Classical Western Political Theory
   - PHIL 324 Modern Western Political Theory
   - PHIL 327 Contemporary Western Political Theory
   - PHIL 393 Humanities College to Career
   - PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

2. Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement)</td>
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</tr>
<tr>
<td>ANTH</td>
<td>(p. 1212)</td>
<td></td>
</tr>
<tr>
<td>CRIM</td>
<td>(p. 1514)</td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td>(p. 1774)</td>
<td></td>
</tr>
<tr>
<td>HIST</td>
<td>(p. 1818)</td>
<td></td>
</tr>
<tr>
<td>LING</td>
<td>(p. 1896)</td>
<td></td>
</tr>
<tr>
<td>PSYC</td>
<td>(p. 2074)</td>
<td></td>
</tr>
<tr>
<td>SOCI</td>
<td>(p. 2167)</td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

<table>
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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
</tbody>
</table>
The two courses used to fulfill the combined college and Mason Core requirements must be from different disciplines in the social and behavioral sciences.

HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

Foreign Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Intermediate-level proficiency in one foreign language, fulfilled by:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compl...</td>
<td>(424)</td>
</tr>
<tr>
<td></td>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or completing the following ASL three course sequence:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDSE 115 American Sign Language (ASL I)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDSE 116 American Sign Language (ASL II)</td>
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</tr>
<tr>
<td></td>
<td>EDSE 219 American Sign Language (ASL III)</td>
<td></td>
</tr>
</tbody>
</table>

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>Arts of China (Mason Core) (p. 142)</td>
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<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
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<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
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<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
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<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>Geography of North Africa and the Middle East</td>
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<td>Geography of the Soviet Succession States</td>
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<td>Select Topics in GGS</td>
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<td>Global Political Theory</td>
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<td>Government and Politics of the Middle East and North Africa</td>
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<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
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<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
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HIST 251 Survey of East Asian History (Mason Core) (p. 142) 3
HIST 252 Survey of East Asian History (Mason Core) (p. 142) 3
HIST 261 Survey of African History (Mason Core) (p. 142) 3
HIST 262 Survey of African History (Mason Core) (p. 142) 3
HIST 271 Survey of Latin American History (Mason Core) (p. 142) 3
HIST 272 Survey of Latin American History (Mason Core) (p. 142) 3
HIST 281 Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 282 Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 326 Stalinism 3
HIST 327 The Soviet Union and Russia Since World War II 3
HIST 328 Rise of Russia (Mason Core) (p. 142) 3
HIST 329 Modern Russia and the Soviet Union (Mason Core) (p. 142) 3
HIST 353 History of Traditional China 3
HIST 354 Modern China (Mason Core) (p. 142) 3
HIST 356 Modern Japan (Mason Core) (p. 142) 3
HIST 357 Postwar Japan (Mason Core) (p. 142) 3
HIST 358 Post-1949 China (Mason Core) (p. 142) 3
HIST 360 History of South Africa (Mason Core) (p. 142) 3
HIST 364 Revolution and Radical Politics in Latin America (Mason Core) (p. 142) 3
HIST 365 Conquest and Colonization in Latin America (Mason Core) (p. 142) 3
HIST 366 Comparative Slavery 3
HIST 367 History, Fiction, and Film in Latin America 3
HIST 387 Topics in Global History (Mason Core) (p. 142) 3-6
HIST 426 The Russian Revolution 3
HIST 460 Modern Iran (Mason Core) (p. 142) 3
HIST 461 Arab-Israeli Conflict 3
HIST 462 Women in Islamic Society (Mason Core) (p. 142) 3
HIST 465 The Middle East in the 20th Century 3
JAPA 310 Japanese Culture in a Global World (Mason Core) (p. 142) 3
JAPA 340 Topics in Japanese Literature (Mason Core) (p. 142) 3
KORE 320 Korean Popular Culture in a Global World 3
MUSI 103 Musics of the World (Mason Core) (p. 142) 3
RELI 211 Religions of the West (Mason Core) (p. 142) 3
RELI 212 Religions of Asia (Mason Core) (p. 142) 3
RELI 240 Death and the Afterlife in World Religions 3
RELI 272 Islam 3
RELI 313 Hinduism (Mason Core) (p. 142) 3
RELI 314 Chinese Philosophies and Religious Traditions 3
RELI 315 Buddhism (Mason Core) (p. 142) 3
RELI 337 Mysticism: East and West 3
RELI 365 Muhammad: Life and Legacy 3
RELI 374 Islamic Thought (Mason Core) (p. 142) 3
RELI 375 Qur’an and Hadith 3
RELI 379 Islamic Law, Society, and Ethics 3
RELI 387 Islam, Democracy, and Human Rights 3
RELI 490 Comparative Study of Religions (Mason Core) (p. 142) 3
RUSS 353 Russian Civilization (Mason Core) (p. 142) 3
RUSS 354 Contemporary Post-Soviet Life (Mason Core) (p. 142) 3

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH</td>
<td>Written Communication (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Integration Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGH</td>
<td>Written Communications (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.
Honors

Honors in the Major

Highly-qualified students may pursue advanced coursework leading to graduation with honors in the major.

Eligibility

Students are eligible to apply for honors coursework if they meet the following requirements:

- Completion of a minimum of 75 credit hours, including COMM 200 Communication Theory and two of COMM 300 Rhetorical Theory and Criticism, COMM 301 Relational Communication Theory, COMM 302 Media Theory, COMM 305 Foundations of Intercultural Communication (Mason Core) (p. 142).
- Minimum GPA of 3.25 in all coursework completed at George Mason.
- GPA of 3.50 in all communication coursework completed at George Mason and applied to the major.

Honors coursework in communication is a fall-spring sequence. Applications may be submitted by eligible students for fall semester enrollment. The deadline is March 15 each spring, for the sequence beginning the following fall. Student eligibility will be dependent on the GPA at the time of application. If accepted to pursue honors coursework, the student must then enroll in COMM 490 Honors Research Methods in Communication. Under the guidance of the COMM 490 Honors Research Methods in Communication instructor, the student will complete a research prospectus for an honors project to be implemented in the following semester in COMM 491 RS: Honors Research Project in Communication.

Honors Requirements

To remain eligible for honors coursework, the student must:

- receive a grade of 3.00 (no lower than B) in COMM 490 Honors Research Methods in Communication;
- have the research prospectus approved by the COMM 490 Honors Research Methods in Communication instructor and the honors director; and
- maintain an overall GPA of 3.25 and a minimum GPA of 3.50 in all COMM coursework completed at George Mason University and applied to the major.

In the following semester, the student enrolls in COMM 491 RS: Honors Research Project in Communication. The student conducts his/her research and prepares a written project conforming to the standards set by the instructor. Upon completion of the project, the COMM 491 RS: Honors Research Project in Communication instructor and the honors director will determine if the project is of honors quality, which is then indicated by the grade earned in COMM 491 RS: Honors Research Project in Communication. For honors designation, the student must achieve an average grade of 3.50 across COMM 490 Honors Research Methods in Communication and COMM 491 RS: Honors Research Project in Communication and must also maintain minimum GPA eligibility requirements outlined above.

Accelerated Master's

The accelerated master's programs in the list below specify the BA in communication as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

Communication, BA/Communication, Accelerated MA

Overview

Highly qualified Mason students may apply to the accelerated master's degree program. If accepted, students will be able to earn a Bachelor's and a MA in communication after satisfactory completion of as few as 147 credits, sometimes within five years. For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in communication, see Application Requirements and Deadlines (http://communication.gmu.edu/programs/LA-MA-ACEL-COM/application).

Accelerated Option Requirements

While undergraduate students, accelerated master's students complete COMM 600 Introduction to Graduate Studies and one of the following theory courses: COMM 602 Theories and Research of Mass Communication, COMM 605 Intercultural Communication, COMM 620 Health Communication, COMM 632 Persuasion Theory, COMM 634 Theories of Interpersonal Communication, COMM 635 Organizational Communication, or COMM 639 Science Communication. Accelerated master's students must earn a minimum grade of 3.00 in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements, except the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits at the 600 level, excluding COMM 650. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).
Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)

Overview
Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Selected Majors
Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
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<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
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</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP 1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

Overview
Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master's in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Selected Majors
Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work.

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tr>
<td>WMST 600</td>
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<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
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<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
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</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
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</tbody>
</table>

Total Credits 6

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

 Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree.

To apply these credits to the master’s degree, students should use the Bachelor's/Accelerated Master's Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>WMST 600</td>
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<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
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<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
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</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
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</tbody>
</table>

Total Credits 6

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

 Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree.

To apply these credits to the master’s degree, students should use the Bachelor's/Accelerated Master's Transition Form.
work. Upon completion and conferral of the undergraduate degree in
the semester indicated in the application, they submit the Bachelor’s/
Accelerated Master’s Transition Form and are admitted to graduate
status.

As graduate students, accelerated master’s students have an advanced
standing. They must meet all master’s degree requirements except for
the two courses (6 credits) they completed as undergraduates. Students
must begin their master’s program the semester immediately following
conferment of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve
graduate credit (chosen from the list of electives for the MAIS
concentration in social justice and human rights). These credits do not
apply to the undergraduate degree. The ability to take courses for reserve
graduate credit is available to all high achieving undergraduates with
the permission of the program. Permission to take a graduate course
for reserve graduate credit is normally granted only to Mason seniors
within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment
by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
<td>6</td>
</tr>
<tr>
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<td>Total Credits</td>
<td>6</td>
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</tbody>
</table>

**Communication Minor**

Banner Code: COM

**Academic Advising**

102 Northeast Module
Fairfax Campus

Email: cdadvice@gmu.edu
Website: communication.gmu.edu/programs/la-minor-comm-com

The minor in communication provides useful knowledge of human
resources management, advertising, marketing, public relations/political
campaign management, events management, speech writing, media
production, or journalism.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students
must earn a minimum grade of 2.00 in all courses applied to the
minor. COMM 100 Public Speaking (Mason Core) (p. 142), COMM 101
Fundamentals of Communication (Mason Core) (p. 142), or COMM 487
Washington Media Institute cannot be used toward the minor. For
policies governing all minors, see AP5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

---

Students should be aware of the specific policies associated with this
program, located on the Admissions & Policies (p. 322) tab.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>COMM 200</td>
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<tr>
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<td>Select two courses from the following:</td>
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<td>COMM 300</td>
<td>Rhetorical Theory and Criticism</td>
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</tr>
<tr>
<td>COMM 301</td>
<td>Relational Communication Theory</td>
<td></td>
</tr>
<tr>
<td>COMM 302</td>
<td>Media Theory</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one public-presentation (PPI) course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>COMM 210</td>
<td>Voice and Articulation</td>
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<tr>
<td>COMM 310</td>
<td>Performance for Communication Arts</td>
<td></td>
</tr>
<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
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<tr>
<td>COMM 356</td>
<td>Video: Performance and Writing</td>
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<tr>
<td>COMM 440</td>
<td>Ceremonial Speech Writing and Performance</td>
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<tr>
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<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

1 Other courses that are PPI may be applied to this requirement with
prior written approval of the director of the minor. COMM 100 Public
Speaking (Mason Core) (p. 142) or COMM 101 Fundamentals of
Communication (Mason Core) (p. 142) cannot be used toward the
minor.

**Electives in Communication**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Select two COMM courses (6 credits) in consultation with an advisor (p. 1417)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
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</tbody>
</table>

1 COMM 100 Public Speaking (Mason Core) (p. 142), COMM 101
Fundamentals of Communication (Mason Core) (p. 142), or
COMM 487 Washington Media Institute cannot be used toward the
minor.

**Communication, MA**

Banner Code: LA-MA-COM

102 Northeast Module
Fairfax Campus

Email: commgrad@gmu.edu
Website: communication.gmu.edu/programs/la-ma-com

As the environment for public and private communication becomes
increasingly complex, organizations rely more and more heavily
on thoughtful and effective communication professionals. To this
end, Communication MA students may choose to specialize in
strategic communication/public relations, health communication
or science communication. They may also choose an individualized
specialization in communication studies according to their interests.
Across all specializations, students receive a strong foundation in
communication theory and learn to design, execute, and interpret rigorous communication research. Students are challenged to apply communication knowledge to help solve problems and to address important social issues.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified by Graduate Admissions (p. 68). For information specific to the MA in communication, see Application Requirements and Deadlines (http://communication.gmu.edu/programs/LA-MA-COM/application).

Admission to the graduate program in communication is competitive.

Policies

For policies governing all graduate degrees, see Graduate Policies (p. 90).

Transfer of Credit/Reduction of Credit

Students may request transfer of up to 15 hours of graduate coursework from graduate non-degree status or from graduate study at another institution, or request a reduction of credit up to 6 hours based on a previously conferred graduate degree. Students should carefully review AP.6.5 (p. 91) and the policies governing graduate transfer of credit and reduction of credit. Transfer and reduction of credit is subject to the approval of the program director and graduate dean.

Requirements

Degree Requirements

Total credits: 33

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 323) tab.

Students complete two program core courses, two methods courses, two theory courses, one practicum course, two specialization and at least two elective courses (or 6 credits), of which 3 credits may be thesis.

Students must choose from one area of specialization (strategic communication/public relations, health communication, science communication, or individualized communication studies). Specific requirements are described below.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Core Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 600</td>
<td>Introduction to Graduate Studies</td>
<td>3</td>
</tr>
<tr>
<td>COMM 798</td>
<td>Communication Studies Project</td>
<td>3</td>
</tr>
<tr>
<td>Two Methods Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 650</td>
<td>Research Methodologies in Communication (required course)</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 725</td>
<td>Qualitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>COMM 750</td>
<td>Research Methods II</td>
<td></td>
</tr>
<tr>
<td>COMM 775</td>
<td>Media Content Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Other graduate level methods course, taken in COMM or elsewhere, as approved by graduate director.

Two Theory Courses

Select two theory courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 602</td>
<td>Theories and Research of Mass Communication</td>
</tr>
<tr>
<td>COMM 605</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>COMM 620</td>
<td>Health Communication</td>
</tr>
<tr>
<td>COMM 630</td>
<td>Theories of Public Relations</td>
</tr>
<tr>
<td>COMM 632</td>
<td>Persuasion Theory</td>
</tr>
<tr>
<td>COMM 634</td>
<td>Theories of Interpersonal Communication</td>
</tr>
<tr>
<td>COMM 635</td>
<td>Organizational Communication</td>
</tr>
<tr>
<td>COMM 639</td>
<td>Science Communication</td>
</tr>
<tr>
<td>COMM 642</td>
<td>Science and the Public</td>
</tr>
<tr>
<td>COMM 706</td>
<td>Strategic Communication</td>
</tr>
</tbody>
</table>

One Practicum Course 1

Select one practicum course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 604</td>
<td>Communication Research Practicum</td>
</tr>
<tr>
<td>COMM 636</td>
<td>Communication Consulting</td>
</tr>
<tr>
<td>COMM 641</td>
<td>Advanced Communication Skills for STEM</td>
</tr>
<tr>
<td>COMM 653</td>
<td>Graduate Seminar in Instructional Communication</td>
</tr>
<tr>
<td>COMM 655</td>
<td>Theory and Practice of Digital Communication</td>
</tr>
<tr>
<td>COMM 660</td>
<td>Climate Change and Sustainability Communication Campaigns</td>
</tr>
<tr>
<td>COMM 670</td>
<td>Social Marketing</td>
</tr>
<tr>
<td>COMM 694</td>
<td>Communication Internship</td>
</tr>
<tr>
<td>COMM 697</td>
<td>Independent Production</td>
</tr>
<tr>
<td>COMM 721</td>
<td>E-Health Communication</td>
</tr>
<tr>
<td>COMM 820</td>
<td>Health Communication Campaigns</td>
</tr>
</tbody>
</table>

Total Credits 21

1 Other courses, including special topics (COMM 590 Seminar in Communication or COMM 690 Special Topics in Communication) and independent study, can be used to fulfill this requirement with prior written approval of the program director.

Specializations

Students complete the degree by completing 6 credits of coursework in one of the four specializations and an additional 6 elective credits in any graduate coursework, to include an optional thesis. Courses outside the department require the prior written approval of the program director.

Available Specializations

- Strategic Communications/Public Relations Specialization (p. 323)
- Health Communication Specialization (p. 324)
- Science Communication (p. 324)
- Individualized Communication Studies specialization (p. 325)

Strategic Communications/Public Relations Specialization

The specialization in strategic communication/public relations requires a minimum of two courses from the list below. A course taken as a part of the general program cannot be duplicated in credits, but it can count as a course required for the specialization. Additional credits may be met through electives.
Two Specialization Courses

Select two specialization courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 590</td>
<td>Seminar in Communication 1</td>
<td></td>
</tr>
<tr>
<td>COMM 602</td>
<td>Theories and Research of Mass Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 615</td>
<td>Political Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 630</td>
<td>Theories of Public Relations</td>
<td></td>
</tr>
<tr>
<td>COMM 632</td>
<td>Persuasion Theory</td>
<td></td>
</tr>
<tr>
<td>COMM 636</td>
<td>Communication Consulting</td>
<td></td>
</tr>
<tr>
<td>COMM 637</td>
<td>Risk Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 660</td>
<td>Climate Change and Sustainability Communication Campaigns</td>
<td></td>
</tr>
<tr>
<td>COMM 670</td>
<td>Social Marketing</td>
<td></td>
</tr>
<tr>
<td>COMM 690</td>
<td>Special Topics in Communication 1</td>
<td></td>
</tr>
<tr>
<td>COMM 696</td>
<td>Directed Readings and Research</td>
<td></td>
</tr>
<tr>
<td>COMM 705</td>
<td>Intercultural Health and Risk Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 720</td>
<td>Consumer-Provider Health Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 721</td>
<td>E-Health Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 820</td>
<td>Health Communication Campaigns</td>
<td></td>
</tr>
<tr>
<td>COMM 890</td>
<td>Special Topics in Communication 1</td>
<td></td>
</tr>
</tbody>
</table>

Optional Thesis 2

Three credits of 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 799</td>
<td>Master's Thesis</td>
<td></td>
</tr>
</tbody>
</table>

Electives 3

Three to six credits chosen from: 3-6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any other graduate COMM course (p. 1417)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 6 credits of coursework from other departments with prior written approval of the program director.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

1 When topic is strategic communication, as approved by program director.

2 Students who do not choose to complete a thesis will take additional credits of elective courses. Students who choose to write a thesis should be aware of the policies governing theses as stated in AP.6.9.3 Master’s Thesis (p. 95). If a thesis is chosen, students must follow the thesis enrollment policy of the university and, once enrolled in COMM 799 Master’s Thesis, maintain continuous enrollment.

3 Students choosing to write a thesis take 3 credits of electives. Those opting out of the thesis take 6 credits.

Health Communication Specialization

The specialization in health communication requires a minimum of two courses from the list below. A course taken as a part of the general program cannot be duplicated in credits, but it can count as a course required for the specialization. Additional credits may be met through electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 590</td>
<td>Seminar in Communication 1</td>
<td></td>
</tr>
<tr>
<td>COMM 620</td>
<td>Health Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 632</td>
<td>Persuasion Theory</td>
<td></td>
</tr>
</tbody>
</table>

Optional Thesis

Three credits of 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 799</td>
<td>Master's Thesis</td>
<td></td>
</tr>
</tbody>
</table>

Electives

Three to six credits chosen from: 3-6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any other graduate COMM course (p. 1417)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Science Communication Specialization

Students who wish to focus their graduate study in science communication complete the following requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 637</td>
<td>Risk Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 639</td>
<td>Science Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 640</td>
<td>Controversies in Science Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 641</td>
<td>Advanced Communication Skills for STEM</td>
<td></td>
</tr>
<tr>
<td>COMM 642</td>
<td>Science and the Public</td>
<td></td>
</tr>
<tr>
<td>COMM 644</td>
<td>Analysis and Criticism of Science Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 660</td>
<td>Climate Change and Sustainability Communication Campaigns</td>
<td></td>
</tr>
</tbody>
</table>

Optional Thesis

Three credits of 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 799</td>
<td>Master's Thesis</td>
<td></td>
</tr>
</tbody>
</table>

Electives

Three to six credits chosen from: 3-6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any other graduate COMM course (p. 1417)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Students pursuing a specialization in individualized communication studies design a program of courses to reflect their interests.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Specialization Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select from the following: 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 590 Seminar in Communication</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>COMM 690 Special Topics in Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 890 Special Topics in Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional Thesis 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three credits of</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 799 Master’s Thesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three to six credits chosen from: 3</td>
<td>3-6</td>
<td></td>
</tr>
<tr>
<td>Additional courses from the list above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other graduate COMM course (p. 1417)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 6 credits of coursework from other departments with prior written approval of the program director</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

1 Students who do not choose to complete a thesis will take additional credits of elective courses. Students who choose to write a thesis should be aware of the policies governing theses as stated in AP6.9.3 Master’s Thesis (p. 95). If a thesis is chosen, students must follow the thesis enrollment policy of the university and, once enrolled in COMM 799 Master’s Thesis, maintain continuous enrollment.

2 Students choosing to write a thesis take 3 credits of electives. Those opting out of the thesis take 6 credits.

Individualized Communication Studies specialization

Students pursuing a specialization in individualized communication studies design a program of courses to reflect their interests.

Accelerated Master's

Communication, BA/Communication, Accelerated MA

Overview

Highly qualified Mason students may apply to the accelerated master’s degree program. If accepted, students will be able to earn a Bachelor’s and a MA in communication after satisfactory completion of as few as 147 credits, sometimes within five years. For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in communication, see Application Requirements and Deadlines (http://communication.gmu.edu/programs/LA-MA-ACEL-COM/application).

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete COMM 600 Introduction to Graduate Studies and one of the following theory courses: COMM 602 Theories and Research of Mass Communication, COMM 605 Intercultural Communication, COMM 620 Health Communication, COMM 632 Persuasion Theory, COMM 634 Theories of Interpersonal Communication, COMM 635 Organizational Communication, or COMM 639 Science Communication. Accelerated master’s students must earn a minimum grade of 3.00 in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.00 in each course. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements, except the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits at the 600 level, excluding COMM 650. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Communication, PhD

Banner Code: LA-PHD-COM

102 Northeast Module
Fairfax Campus

Email: commgrad@gmu.edu
Website: communication.gmu.edu/programs/la-phd-com

The PhD in Communication explores key issues in the discipline such as communicating complex information, influencing health behaviors, the digital divide, public advocacy, intercultural sensitivity, media literacy, and national security. The PhD program offers two major areas of emphasis:
health and strategic communication. Students may also emphasize science communication in conjunction with either of these. Faculty and students conduct research concerning consumer-provider relationships, risk communication, crisis management, organizational communication, media systems, health campaigns, new information technologies, communication policy, media advocacy, and health communication interventions.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the PhD in Communication, see Application Requirements and Deadlines (http://communication.gmu.edu/programs/LA-PHD-COM/application).

Policies

For policies governing all graduate degrees, see Graduate Policies (p. 90).

Reduction of Credit

For students entering the doctoral program with a master's degree, the number of required credits may be reduced by a maximum of 30 credits, subject to approval of the program faculty and the dean. Requests for reduction of credit are reviewed only after acceptance to the doctoral program.

Program Requirements

To receive the PhD in Communication, students must complete a minimum of 90 credits, 60 beyond the master's degree, including core courses in theory and research methods, coursework in substantive fields of study, and a research practicum. Following completion of all required coursework, students must pass a written qualifying examination and an oral defense of it, after which they are advanced to candidacy by the dean and complete a dissertation, an original and independent research project.

If specific requirements are waived, students must complete substitutions, which are recorded on their Program of Study. All substitutions to degree requirements must be approved by the graduate committee.

Requirements

Degree Requirements

Total credits: 90

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 326) tab.

Core Courses

Four Theory Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 700</td>
<td>Building Social Science Theory</td>
<td>3</td>
</tr>
<tr>
<td>Select one additional theory course from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 602</td>
<td>Theories and Research of Mass Communication</td>
<td></td>
</tr>
</tbody>
</table>

Select two additional theory courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 602</td>
<td>Theories and Research of Mass Communication</td>
</tr>
<tr>
<td>COMM 605</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>COMM 620</td>
<td>Health Communication</td>
</tr>
<tr>
<td>COMM 630</td>
<td>Theories of Public Relations</td>
</tr>
<tr>
<td>COMM 632</td>
<td>Persuasion Theory</td>
</tr>
<tr>
<td>COMM 634</td>
<td>Theories of Interpersonal Communication</td>
</tr>
<tr>
<td>COMM 635</td>
<td>Organizational Communication</td>
</tr>
<tr>
<td>COMM 639</td>
<td>Science Communication</td>
</tr>
<tr>
<td>COMM 642</td>
<td>Science and the Public</td>
</tr>
<tr>
<td>COMM 706</td>
<td>Strategic Communication</td>
</tr>
</tbody>
</table>

Total Credits 12

Three Research Methods Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods Course</td>
<td>Research Methodologies in Communication</td>
<td>3</td>
</tr>
<tr>
<td>Qualitative Methods Course</td>
<td>Qualitative Methods ¹</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Methods Course

Select one course at the 700-level or above. ² 3

Total Credits 9

¹ Or another course at 700-level or above as approved by the graduate committee.
² This course should be chosen to help prepare for the dissertation and must be approved by the graduate committee.

Substantive Field of Study

Students choose one of the following substantive fields of study.

Health Communication

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three courses from the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>COMM 620</td>
<td>Health Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 705</td>
<td>Intercultural Health and Risk Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 720</td>
<td>Consumer-Provider Health Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 820</td>
<td>Health Communication Campaigns</td>
<td></td>
</tr>
<tr>
<td>Select three elective courses chosen with approval of the advisor and director</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

Strategic Communication

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three courses from the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>COMM 630</td>
<td>Theories of Public Relations</td>
<td></td>
</tr>
<tr>
<td>COMM 705</td>
<td>Intercultural Health and Risk Communication</td>
<td></td>
</tr>
</tbody>
</table>
Health Communication Minor

Banner Code: HCOM

Academic Advising
102 Northeast Module
Fairfax Campus

Email: cdadvice@gmu.edu
Website: communication.gmu.edu/programs/la-minor-la-hcom

Health communication, one of the fastest growing fields in the broader communication discipline, addresses how communication intersects with all aspects of health (social, mental, and physical).

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 327) tab.

Core Courses

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 304</td>
<td>Foundations of Health Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 430</td>
<td>Persuasion</td>
<td>3</td>
</tr>
<tr>
<td>COMM 334</td>
<td>Family and Health Communication</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

One Additional Communication Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 3 credits from the following: 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 395</td>
<td>Special Topics in Health Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 399</td>
<td>Special Topics in Communication 2</td>
<td></td>
</tr>
<tr>
<td>COMM 433</td>
<td>Environmental Communication</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

1 Other COMM (p. 1417) courses may be substituted with approval of the minor director.
2 Requires approval of the minor director.

Electives

Students should confer with the health communication minor program director when making choices among these courses. Other courses may be substituted with approval of the minor director.
JournalismMinor

Banner Code: JNL

Academic Advising

102 Northeast Module
Fairfax Campus
Email: cdadvice@gmu.edu
Website: communication.gmu.edu/programs/la-minor-comm-jnl

Journalism provides a cross-platform foundation with a focus on reporting, research techniques and writing style unique to online, print, broadcast, social media and database journalism.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

This minor is not available to communication majors pursuing a concentration in journalism.

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 328) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 303</td>
<td>Writing across the Media</td>
<td>3</td>
</tr>
<tr>
<td>COMM 351</td>
<td>News Writing and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 352</td>
<td>News Editing: Print and Beyond</td>
<td></td>
</tr>
<tr>
<td>COMM 361</td>
<td>Online Journalism</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 369</td>
<td>Multimedia Storytelling</td>
<td></td>
</tr>
<tr>
<td>COMM 475</td>
<td>Journalism Law</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Electives

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 203</td>
<td>Introduction to Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 208</td>
<td>Introduction to Media Production</td>
<td></td>
</tr>
<tr>
<td>COMM 351</td>
<td>News Writing and Reporting</td>
<td>1</td>
</tr>
<tr>
<td>COMM 352</td>
<td>News Editing: Print and Beyond</td>
<td>1</td>
</tr>
<tr>
<td>COMM 353</td>
<td>Broadcast Journalism</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Select six credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td></td>
</tr>
<tr>
<td>HAP 310</td>
<td>Healthcare Ethics</td>
<td></td>
</tr>
<tr>
<td>HAP 395</td>
<td>Health Care Finance</td>
<td></td>
</tr>
<tr>
<td>HAP 425</td>
<td>Health Economics and Policy</td>
<td></td>
</tr>
<tr>
<td>HAP 442</td>
<td>Introduction to Health Care Politics and Policy</td>
<td></td>
</tr>
<tr>
<td>HAP 445</td>
<td>Introduction to Health Services Research</td>
<td></td>
</tr>
<tr>
<td>HEAL 230</td>
<td>Introduction to Health Behavior (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HEAL 310</td>
<td>Drugs and Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 325</td>
<td>Health Aspects of Human Sexuality</td>
<td></td>
</tr>
<tr>
<td>HEAL 327</td>
<td>Women's Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 331</td>
<td>Men's Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 350</td>
<td>Interventions for Populations and Communities at Risk</td>
<td></td>
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<tr>
<td>HEAL 351</td>
<td>Relationship Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 372</td>
<td>Health Communication</td>
<td></td>
</tr>
<tr>
<td>HHS 432</td>
<td>Healthy Aging</td>
<td></td>
</tr>
<tr>
<td>GCH 205</td>
<td>Global Health (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GCH 300</td>
<td>Introduction to Public Health</td>
<td></td>
</tr>
<tr>
<td>GCH 310</td>
<td>Health Behavior Theories</td>
<td></td>
</tr>
<tr>
<td>GCH 350</td>
<td>Health Promotion and Education</td>
<td></td>
</tr>
<tr>
<td>GCH 360</td>
<td>Health and Environment</td>
<td></td>
</tr>
<tr>
<td>GCH 412</td>
<td>Fundamentals of Epidemiology</td>
<td></td>
</tr>
<tr>
<td>GCH 445</td>
<td>Social Determinants of Health</td>
<td></td>
</tr>
<tr>
<td>GCH 480</td>
<td>Health Maintenance and Health Aspects of Aging</td>
<td></td>
</tr>
<tr>
<td>INTS 310</td>
<td>Violence and Gender</td>
<td></td>
</tr>
<tr>
<td>INTS 314</td>
<td>Conflicts, Trauma and Healing (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 410</td>
<td>Contemporary Health Issues</td>
<td></td>
</tr>
<tr>
<td>INTS 440</td>
<td>Death, Dying, and Decision Making</td>
<td></td>
</tr>
<tr>
<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>NUTR 422</td>
<td>Nutrition throughout the Life Cycle</td>
<td></td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 321</td>
<td>Clinical Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 322</td>
<td>Behavior Modification</td>
<td></td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 326</td>
<td>Therapeutic Communication Skills</td>
<td></td>
</tr>
<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td></td>
</tr>
<tr>
<td>PSYC 417</td>
<td>Science of Well Being</td>
<td></td>
</tr>
<tr>
<td>PSYC 418</td>
<td>Death, Dying, and Grieving</td>
<td></td>
</tr>
<tr>
<td>PSYC 466</td>
<td>Psychology of Intimate Relationships</td>
<td></td>
</tr>
<tr>
<td>SOCI 390</td>
<td>Sociology of Health, Illness, and Disability</td>
<td></td>
</tr>
<tr>
<td>SOCW 410</td>
<td>Alcohol and Substance Abuse: Policies and Programs</td>
<td></td>
</tr>
<tr>
<td>SOCW 415</td>
<td>Child and Family Welfare</td>
<td></td>
</tr>
<tr>
<td>SOCW 435</td>
<td>Introduction to Gerontology</td>
<td></td>
</tr>
<tr>
<td>SOCW 445</td>
<td>Social Determinants of Health</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>COMM 361</td>
<td>Online Journalism</td>
<td>1</td>
</tr>
<tr>
<td>COMM 369</td>
<td>Multimedia Storytelling</td>
<td>1</td>
</tr>
<tr>
<td>COMM 370</td>
<td>Feature Writing</td>
<td></td>
</tr>
<tr>
<td>COMM 371</td>
<td>Sports Writing and Reporting</td>
<td></td>
</tr>
<tr>
<td>COMM 373</td>
<td>Business and Economic Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 374</td>
<td>Political Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 377</td>
<td>Special Topics in Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 450</td>
<td>Internship in Communication (take for 3 credits)</td>
<td>2</td>
</tr>
<tr>
<td>COMM 454</td>
<td>Free Speech and Ethics (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>COMM 455</td>
<td>History of Journalism</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

1. Only if not taken as a required course.
2. When relevant, may be taken as elective with prior written approval of the director of the minor.

## Political Communication Minor (CHSS)

### Banner Code: PCOM

### Academic Advising

102 Northeast Module  
Fairfax Campus  

Email: cdadvice@gmu.edu  
Website: communication.gmu.edu/programs/la-minor-comm-pcom

This interdisciplinary minor is offered jointly by the Schar School of Policy and Government (p. 961) and the Department of Communication (p. 313).

Political communication explores the interaction among members of the public, the media, advocacy groups, and politicians in democratic society. This minor uses a diverse approach to questions of how mass and interpersonal communication influence democratic functioning, including:

1. how political actors use strategic messaging to persuade and mobilize the public  
2. how citizens make sense of these messages and their impact on engagement, deliberation, efficacy, knowledge, and participation  
3. the role of the mass media in facilitating or hindering this relationship

Political communication includes explicitly political activities like voting and political campaigns. It also encompasses any issue of public debate or deliberation, including culture and social movements.

### Admissions & Policies

### Admissions

This minor is available to all Mason undergraduate students with the exception of communication majors pursuing a concentration in political communication.

### Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. A minimum of 6 COMM credits and a minimum of 6 GOVT credits are required. For policies governing all minors, see AP:5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 329) tab.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 327</td>
<td>Political Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 412</td>
<td>Politics and the Mass Media</td>
<td>3</td>
</tr>
<tr>
<td>or GOVT 412</td>
<td>Politics and the Mass Media</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

#### Communication and Political Process

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 326</td>
<td>Rhetoric of Social Movements and Political Controversy (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 374</td>
<td>Political Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 431</td>
<td>New Media and Democracy</td>
<td></td>
</tr>
<tr>
<td>COMM 454</td>
<td>Free Speech and Ethics (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GOVT 311</td>
<td>Public Opinion and Electoral Behavior</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

#### Persuasion Theory

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 230</td>
<td>Case Studies in Persuasion</td>
<td>3</td>
</tr>
<tr>
<td>COMM 261</td>
<td>Theories of Argumentation</td>
<td></td>
</tr>
<tr>
<td>COMM 362</td>
<td>Argument and Public Policy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>COMM 430</td>
<td>Persuasion</td>
<td></td>
</tr>
<tr>
<td>GOVT 313</td>
<td>Political Psychology</td>
<td></td>
</tr>
<tr>
<td>GOVT 342</td>
<td>Diplomacy</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

#### Political Process

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 308</td>
<td>The American Presidency</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 312</td>
<td>Political Parties and Campaigns</td>
<td></td>
</tr>
<tr>
<td>GOVT 318</td>
<td>Interest Groups, Lobbying, and the Political Process</td>
<td></td>
</tr>
<tr>
<td>GOVT 353</td>
<td>Social Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>GOVT 364</td>
<td>Public Policy Making</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>
### Professional Experience in Communication Minor

**Banner Code:** PCM

**Academic Advising**

102 Northeast Module  
Fairfax Campus  

Email: cdadvice@gmu.edu  
Website: communication.gmu.edu/programs/la-minor-comm pcm

This minor is designed for undergraduate students who wish to augment their main academic program with an intense experiential learning semester in professional and career media. Students attend the Washington Media Institute program in Washington, DC and are taught by Mason faculty, Washington Media Institute leaders and practitioners. Enrollment in the program carries a premium fee added to normal tuition.

The minor is available only to students who are accepted into the program by application to the Department of Communication (p. 313), and enroll in credits dedicated to the Washington Media Institute Mason Semester, a semester-long program held in Washington Media Institute in Washington, DC.

### Admissions & Policies

#### Admissions

The minor is available only to students who are accepted into the program by application to the Department of Communication (p. 313), and enroll in credits dedicated to the Washington Media Institute Mason Semester, a semester-long program held in Washington Media Institute in Washington, DC.

#### Policies

Students pursuing this minor must complete all course offerings with a minimum grade of 2.00 in each course. All fifteen credits of coursework must be unique to the minor.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements

Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 330) tab.

#### Coursework

Students complete five required courses, offered as individualized sections of COMM 487 Washington Media Institute. Specific course titles may vary from semester to semester. Examples are Entrepreneurial Media and Journalism and Social Justice. Various seminars, a technology workshop and internship may also be offered.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 380</td>
<td>Media Criticism</td>
<td>3</td>
</tr>
<tr>
<td>COMM 386</td>
<td>Special Topics in Political Communication</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 319</td>
<td>Issues in Government and Politics</td>
<td></td>
</tr>
<tr>
<td>GOVT 361</td>
<td>Introduction to Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>GOVT 414</td>
<td>Politics of Race and Gender</td>
<td></td>
</tr>
<tr>
<td>GOVT 427</td>
<td>Feminist Political Thought</td>
<td></td>
</tr>
<tr>
<td>GOVT 460</td>
<td>Surveillance and Privacy in Contemporary Society</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

1. COMM 386 Special Topics in Political Communication may be substituted for any other COMM course with the permission of the minor director, depending on the specific topic.  
   GOVT 319 Issues in Government and Politics may be substituted for any other GOVT course with the permission of the minor director, depending on the specific topic. Courses from the Schar School of Policy and Government (p. 961) may be substituted in the cultural politics, persuasion theory, or political process categories, with the permission of the minor director.

### Professional Writing and Editing Graduate Certificate (COMM)

**Banner Code:** LA-CERG-PWE

**Academic Advising**

102 Northeast Module  
Fairfax Campus  

Email: commgrad@gmu.edu

#### Admissions & Policies

#### Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).
Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Concentration in Professional and Technical Writing
This concentration in the graduate certificate in professional writing and editing may be pursued concurrently with any of several programs in English and elsewhere. Part of the coursework toward the concentration may be applied to those degrees with the approval of the director of the degree program. Students pursuing the certificate in professional and writing and editing with a concentration in professional and technical writing must complete 18 credits of English graduate courses with a minimum grade of 3.00 in each course.

Concentration in Science Communication
All course choices included in this concentration must be approved by the Department of Communication. Students pursuing the graduate certificate in professional writing and editing with a concentration in science communication must complete 15 credits.

Requirements
Certificate Requirements
Total credits: 15 or 18

This certificate may be pursued on a full- or part-time basis.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies tab.

Students pursuing this graduate certificate must choose either a concentration in professional and technical writing or a concentration in science communication.

Concentration in Professional and Technical Writing (PTW)
This concentration in the graduate certificate in professional writing and editing may be pursued on a part-time basis only.

Coursework
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 501</td>
<td>Introduction to Professional Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 502</td>
<td>Research Methods in Rhetoric and Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 503</td>
<td>Theory and Practice of Editing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 505</td>
<td>Document Design</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

1 ENGH 501 Introduction to Professional Writing and Rhetoric should be taken in the first semester of study, if possible.

Emphasis in Technical Writing or Proposal Writing
Take courses from one of the following emphases: 6

Technical Writing Emphasis
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 613</td>
<td>Technical Communication</td>
<td></td>
</tr>
</tbody>
</table>

Select one elective ENGH course (3 credits) chosen in consultation with an advisor (p. 1637)

Proposal Writing Emphasis
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 509</td>
<td>Proposal Writing and Development</td>
<td></td>
</tr>
<tr>
<td>ENGH 689</td>
<td>Advanced Proposal Writing</td>
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</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Concentration in Science Communication (SCMN)
This concentration in the graduate certificate in professional writing and editing may be pursued on a full- or part-time basis.

Core Courses
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 639</td>
<td>Science Communication</td>
<td>3</td>
</tr>
<tr>
<td>Select two courses from the following:</td>
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<td></td>
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<tr>
<td>COMM 637</td>
<td>Risk Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 640</td>
<td>Controversies in Science Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 641</td>
<td>Advanced Communication Skills for STEM</td>
<td></td>
</tr>
<tr>
<td>COMM 642</td>
<td>Science and the Public</td>
<td></td>
</tr>
<tr>
<td>COMM 644</td>
<td>Analysis and Criticism of Science Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 660</td>
<td>Climate Change and Sustainability Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 694</td>
<td>Communication Internship</td>
<td></td>
</tr>
<tr>
<td>COMM 735</td>
<td>Crisis Communication</td>
<td></td>
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<tr>
<td>Total Credits</td>
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</table>

Electives
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two courses in STEM, Health Sciences, or Science Policy</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

1 These courses should be chosen from any STEM, health sciences, or science policy discipline. Both courses must be from the same discipline and must be graduate level. Choices must be approved by the program director. Students should select from 500- or 600-level courses offered by CHSS (p. 305), COS (p. 613), CHHS (p. 244), Schar (p. 961), or CEHD (p. 161).

Sport Communication Minor (CHSS)
Banner Code: SCOM

Academic Advising
102 Northeast Module
Fairfax Campus
Email: cdadvice@gmu.edu
Website: communication.gmu.edu/programs/la-minor-comm-scom

This minor offers students the opportunity to examine important and timely sports-related issues in an ethical context as well as analyze sports from cross-cultural perspectives. Students will gain an understanding of sport mass media, sport communication, sports reporting, interpersonal and organizational communication, and the impact each has in our global society. The courses cover theory and practice in cross-platform communication, sports ethics and theoretical underpinnings, public relations, and marketing. The minor provides applied fundamentals for students seeking employment in the commercial world of sports (areas such as management or promotion of athletic organizations) and in sports media. The sport communication
minor is offered jointly with the School of Recreation, Health, and Tourism (http://catalog.gmu.edu/colleges-schools/humanities-social-sciences/communication/sport-communication-minor/20/colleges-schools/education-human-development/recreation-health-tourism) in the College of Education and Human Development (p. 161).

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 332) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 303</td>
<td>Writing across the Media</td>
<td>3</td>
</tr>
<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>or SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td></td>
</tr>
<tr>
<td>SPMT 430</td>
<td>Sport Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Electives

Select two electives from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 204</td>
<td>Introduction to Public Relations</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>COMM 351</td>
<td>News Writing and Reporting</td>
<td></td>
</tr>
<tr>
<td>COMM 356</td>
<td>Video: Performance and Writing</td>
<td></td>
</tr>
<tr>
<td>COMM 359</td>
<td>Media Management</td>
<td></td>
</tr>
<tr>
<td>COMM 361</td>
<td>Online Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 371</td>
<td>Sports Writing and Reporting</td>
<td></td>
</tr>
<tr>
<td>COMM 372</td>
<td>Sports and the Media</td>
<td></td>
</tr>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td></td>
</tr>
<tr>
<td>SPMT 302</td>
<td>Philosophical and Ethical Dimensions of Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td></td>
</tr>
<tr>
<td>SPMT 318</td>
<td>Diversity and Inclusion Issues in Sport</td>
<td></td>
</tr>
<tr>
<td>SPMT 405</td>
<td>Sport Venues and Events</td>
<td></td>
</tr>
<tr>
<td>SPMT 412</td>
<td>Sport Marketing and Sales</td>
<td></td>
</tr>
<tr>
<td>SPMT 420</td>
<td>Economics and Finance in the Sport Industry</td>
<td></td>
</tr>
<tr>
<td>SPMT 440</td>
<td>Global Perspectives in Sport</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

1 Special topics courses, when relevant, may be used to fulfill this requirement with the prior written approval of the director.

Depending on which courses students took as a required course (above), they may use either SPMT 201 Introduction to Sport Management or SPMT 304 Sport, Culture, and Society as an elective.

• COMM majors are required to take one elective SPMT course.

Department of Criminology, Law and Society

Phone: 703-993-8315
Website: cls.gmu.edu/

Criminology, Law and Society is a dynamic, multidisciplinary unit. Students at the graduate and undergraduate level develop strong foundations in research, methods, theories and systems of justice, criminology and crime policy, security, and law and society. They graduate with the knowledge and skills needed to understand the causes and consequences of crime and injustice, the responses by criminal and civil justice institutions, and what works to improve social conditions among affected individuals, communities, organizations, and countries.

Undergraduate Programs

Criminology, Law and Society, BS

The bachelors of science in criminology, law and society provides students with a focused study of criminology, law and society and the social, human, and moral problems raised in the justice field. The BS degree prepares students for careers in law enforcement, corrections, the courts, investigations, juvenile justice, private and homeland security, and related social and human services. Students who earn the BS degree either gain work experience in a criminal justice agency, or complete a minor in a related field to enhance their study of justice.

Criminology, Law and Society, BA

The bachelors of arts in criminology, law and society provides students with the opportunity to acquire a broader liberal arts education while studying criminology, law and society. The BA degree prepares students for careers in a range of justice, social service, and human services fields. It also provides a strong background for law school or graduate study in criminal justice or criminology.

Internships

The department supports an active internship program, which places students in justice and related organizations throughout the Washington metropolitan area. Students can gain valuable work place experience while earning credit toward their degree.

Graduate Programs

The department offers a master’s and a doctoral degree in criminology, law and society and a master’s degree in criminal justice. These degrees draw on a strong multidisciplinary faculty who teach a wide range of courses in their specialties. These programs take advantage of Mason’s proximity to the many justice organizations at the federal, state, and local levels. The curriculum is structured to give students the skills they need to do policy-relevant research. They will be able to work with local and
national agencies concerned with justice and security to put those skills to use.

**Funding**
The department offers graduate teaching and research assistantships awarded on a competitive basis. Other sources of funding such as grants, loans, and employment on campus are also available. Students awarded assistantships must register for a minimum of six credits a semester and, like all graduate students, show satisfactory progress toward their degree.

**Faculty**

**Department Faculty**

**Professors**
Lum, Redlich, Robinson, Taxman, Weisburd, Wilson (chair)

**Emeritus Professors**
Mastrofski, Turner

**Associate Professors**
Gallagher, Johnson, Koper, Merola, Rudes, Willis, Yang

**Assistant Professors**
Dong, Gill, Houston, Irvin-Erickson, Lowder, Norris

**Term Professor**
Newmark

**Term Assistant Professor**
Dobson, Gudaitis, Novak

**Term Lecturer**
Bamford

**Affiliate Faculty**
Uchida

**Programs**

- Criminal Justice, MS
- Criminology, Law and Society Minor
- Criminology, Law and Society, BA
- Criminology, Law and Society, BS
- Criminology, Law and Society, MA
- Criminology, Law and Society, PhD
- Intelligence Analysis Minor

**Criminal Justice, MS**

**Banner Code:** LA-MS-CJUS

**Admissions & Policies**

**Admissions**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the MS degree in criminal justice, see Application Requirements and Deadlines (https://cls.gmu.edu/programs/la-ms-cjus/application) on the departmental website.

**Policies**
For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Transfer Credits**
Students who have prior graduate coursework that has not been applied to another degree may request to have a maximum of 12 of these graduate credits transferred to their degree program, with approval of the graduate director and dean and in accordance with AP.6.5.2 Reduction of Credits (p. 91).

**Reduction of Credits**
Students entering the master’s program with a previously conferred graduate degree in a related discipline may request that the required credits for the MS degree be reduced by a maximum of 12 credits with approval of the graduate director and dean and in accordance with AP.6.5.3 Transfer of Credit (p. 91).

**Satisfactory Progress**
Students who fail to make satisfactory progress may be terminated from the program. Satisfactory progress in the MS in criminal justice is defined as maintaining a minimum GPA of 3.00 with the minimum grade of B- in all courses. Students who receive a grade below B- will receive an academic warning the first time and a letter of termination the second time.

**Requirements**

**Degree Requirements**
Total credits: 30

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 511</td>
<td>Evidence-based Crime and Justice Policy</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 512</td>
<td>Implementing Crime and Justice Policy</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 513</td>
<td>Leadership in Justice Organizations</td>
<td>3</td>
</tr>
</tbody>
</table>
CRIM 514 Legal and Ethical Issues in Criminal Justice 3
CRIM 515 Criminal Justice Research Methods and Data Analysis 3
CRIM 516 Evaluation of Crime and Justice Policies and Practices 3
CRIM 517 Research Practicum in Justice Policy and Practice 3

Total Credits 21

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three courses from the following:</td>
<td>9</td>
</tr>
<tr>
<td>CRIM 509</td>
<td>Justice Organizations and Processes</td>
<td></td>
</tr>
<tr>
<td>CRIM 510</td>
<td>Policing in a Democratic Society</td>
<td></td>
</tr>
<tr>
<td>CRIM 521</td>
<td>The Constitution, Criminal Procedure, and Security</td>
<td></td>
</tr>
<tr>
<td>CRIM 523</td>
<td>Law and Social Control</td>
<td></td>
</tr>
<tr>
<td>CRIM 541</td>
<td>Conduct of Justice Organizations at the Street Level</td>
<td></td>
</tr>
<tr>
<td>CRIM 544</td>
<td>Corrections</td>
<td></td>
</tr>
<tr>
<td>CRIM 545</td>
<td>Crime Analysis</td>
<td></td>
</tr>
<tr>
<td>CRIM 561</td>
<td>Politics of Crime Policy</td>
<td></td>
</tr>
<tr>
<td>CRIM 562</td>
<td>Crime and Place</td>
<td></td>
</tr>
<tr>
<td>CRIM 595</td>
<td>Special Topics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Accelerated Master’s

Bachelor's Degree (any)/Criminal Justice, Accelerated MS

Overview
The accelerated M.S. in Criminal Justice is designed for high achieving undergraduate students who are pursuing a bachelor’s degree in any field and who also wish to obtain a master’s of science in criminal justice. Students can earn both degrees with a total of 144 credits rather than the usual 150 credits, and in as few as five years. Students gain enhanced knowledge and skills in the criminal justice field for career development or to help prepare for competitive, sought-after positions. The program takes advantage of the university’s proximity to many justice organizations at the federal, state, and local levels in the capital region. The curriculum is designed to give students the skills to work with justice and security agencies in the region. For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to this degree, see the departmental website.

Accelerated Option Requirements
Students who have been accepted into the accelerated master’s program can take up to 6 graduate credits (any course except CRIM 517 Research Practicum in Justice Policy and Practice) while still in undergraduate status and those credits will be applied to both degrees (BA or BS and MS), as long as they get at least a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.50 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements, except the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students can take an additional 6 credits of graduate courses while still undergraduates, and those credits will be applied only to the master’s degree (reserve credits). To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Criminology, Law and Society, BA

Banner Code: LA-BA-CLS
354 Enterprise Hall
Fairfax Campus
Website: cls.gmu.edu/programs/la-ba-cls

The BA in Criminology, Law and Society provides a focused study of the justice system and social, human, and moral problems raised in the justice field. This course of study prepares students for careers in law enforcement, corrections, the courts, investigations, juvenile justice, private and homeland security, and related social and human services. The BA in Criminology, Law and Society is well-suited for students who wish to study the field while branching out into related areas of study.

Admissions & Policies

Policies
Students pursuing this degree must complete 42 credits within the major, with a minimum GPA of 2.00. Students may apply a maximum of 18 credits of transferable ADJ courses from the Virginia Community College System (VCCS) or comparable courses at another community college to fulfill the degree requirements. Once a student matriculates at Mason, no courses may be taken at another institution without prior written approval from the program and the dean.
No more than 12 credits of CRIM 485 Study Abroad can be applied to the major. No more than 15 credits of CRIM 490 Special Topics can be applied to the major.

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

## Requirements

### Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 334) tab.

### Core Courses in the Major

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 100</td>
<td>Introduction to Criminal Justice (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 306</td>
<td>Criminal Justice Ethics</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 315</td>
<td>Research Methods and Analysis in Criminology</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 424</td>
<td>Constitutional Law: Criminal Process and Rights</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 495</td>
<td>Capstone in Criminology, Law and Society (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

### Electives in the Major

Select nine electives from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 210</td>
<td>Introduction to Criminology</td>
<td></td>
</tr>
<tr>
<td>CRIM 220</td>
<td>Introduction to Law and Society</td>
<td></td>
</tr>
<tr>
<td>CRIM 230</td>
<td>Introduction to Homeland Security</td>
<td></td>
</tr>
<tr>
<td>CRIM 301</td>
<td>Public Law and the Judicial Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or GOVT 301 Public Law and the Judicial Process</td>
<td></td>
</tr>
<tr>
<td>CRIM 302</td>
<td>Delinquency</td>
<td></td>
</tr>
<tr>
<td>CRIM 304</td>
<td>Computer Crime, Forensics, and Auditing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or IT 357 Computer Crime, Forensics, and Auditing</td>
<td></td>
</tr>
<tr>
<td>CRIM 305</td>
<td>Crime and Crime Policy</td>
<td></td>
</tr>
<tr>
<td>CRIM 307</td>
<td>Social Inequality, Crime, and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 308</td>
<td>Human Rights and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 310</td>
<td>Introduction to the Intelligence Community</td>
<td></td>
</tr>
<tr>
<td>CRIM 312</td>
<td>Intelligence Analysis Techniques</td>
<td></td>
</tr>
<tr>
<td>CRIM 320</td>
<td>Crime and Place</td>
<td></td>
</tr>
<tr>
<td>CRIM 325</td>
<td>Hate Crime</td>
<td></td>
</tr>
<tr>
<td>CRIM 350</td>
<td>Counterintelligence</td>
<td></td>
</tr>
<tr>
<td>CRIM 400</td>
<td>Applied Criminal Psychology</td>
<td></td>
</tr>
<tr>
<td>CRIM 401</td>
<td>Policing in America</td>
<td></td>
</tr>
<tr>
<td>CRIM 402</td>
<td>Punishment and Corrections</td>
<td></td>
</tr>
<tr>
<td>CRIM 403</td>
<td>Community Corrections</td>
<td></td>
</tr>
<tr>
<td>CRIM 404</td>
<td>Crime Victims and Victimization</td>
<td></td>
</tr>
<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 27

1. Students may select an optional concentration to fulfill a portion of this required elective credit.

### Optional Concentration in the Major

Criminology and society majors have the option of obtaining a concentration by completing 15 of their 27 elective credits within one of the following areas. Students can pursue only one concentration. Credits earned in CRIM 490 Special Topics may be applied to a concentration as appropriate for the content of the course, to be determined by the undergraduate director.

#### Available Concentrations

- Concentration in Criminal Justice (CJUS) (p. 335)
- Concentration in Law and Society (LAWS) (p. 336)
- Concentration in Homeland Security and Justice (HSJ) (p. 336)

### Concentration in Criminal Justice (CJUS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 210</td>
<td>Introduction to Criminology</td>
<td></td>
</tr>
<tr>
<td>CRIM 302</td>
<td>Delinquency</td>
<td></td>
</tr>
<tr>
<td>CRIM 304</td>
<td>Computer Crime, Forensics, and Auditing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or IT 357 Computer Crime, Forensics, and Auditing</td>
<td></td>
</tr>
<tr>
<td>CRIM 305</td>
<td>Crime and Crime Policy</td>
<td></td>
</tr>
<tr>
<td>CRIM 307</td>
<td>Social Inequality, Crime, and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 320</td>
<td>Crime and Place</td>
<td></td>
</tr>
<tr>
<td>CRIM 325</td>
<td>Hate Crime</td>
<td></td>
</tr>
<tr>
<td>CRIM 400</td>
<td>Applied Criminal Psychology</td>
<td></td>
</tr>
<tr>
<td>CRIM 401</td>
<td>Policing in America</td>
<td></td>
</tr>
<tr>
<td>CRIM 402</td>
<td>Punishment and Corrections</td>
<td></td>
</tr>
</tbody>
</table>

1. Students may select an optional concentration to fulfill a portion of this required elective credit.
Criminology, Law and Society, BA

CRIM 403 Community Corrections
CRIM 404 Crime Victims and Victimization
CRIM 408 Criminal Courts
CRIM 409 Community Policing
CRIM 410 Criminal Investigations
CRIM 411 Innovations in Policing
CRIM 425 Criminal Justice Management
CRIM 462 Law Enforcement and Homeland Security
CRIM 471 Prevention and Deterrence of Crime

Upper Level Requirement

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Concentration in Law and Society (LAWS)

Select 15 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 220</td>
<td>Introduction to Law and Society</td>
<td></td>
</tr>
<tr>
<td>CRIM 301 or GOVT 301</td>
<td>Public Law and the Judicial Process</td>
<td></td>
</tr>
<tr>
<td>CRIM 308</td>
<td>Human Rights and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 325</td>
<td>Hate Crime</td>
<td></td>
</tr>
<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CRIM 406</td>
<td>Family Law and the Justice System</td>
<td></td>
</tr>
<tr>
<td>CRIM 407</td>
<td>Advanced Topics in Law and Society</td>
<td></td>
</tr>
<tr>
<td>CRIM 408</td>
<td>Criminal Courts</td>
<td></td>
</tr>
<tr>
<td>CRIM 422</td>
<td>Controversial Legal Issues</td>
<td></td>
</tr>
<tr>
<td>CRIM 423 or GOVT 423</td>
<td>Constitutional Law: Civil Rights and Liberties</td>
<td></td>
</tr>
<tr>
<td>CRIM 430</td>
<td>Criminal Law</td>
<td></td>
</tr>
<tr>
<td>CRIM 460</td>
<td>Surveillance and Privacy in Contemporary Society</td>
<td></td>
</tr>
</tbody>
</table>

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement) ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH (p. 1212)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRIM (p. 1514)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON (p. 1564)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVT (p. 1774)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST (p. 1818) ²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LING (p. 1896)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC (p. 2074)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCI (p. 2167)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Writing-Intensive Requirement

The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in criminology, law and society fulfill this requirement by successfully completing CRIM 495 Capstone in Criminology, Law and Society (Mason Core) (p. 142). Students should complete ENGH 302 Advanced Composition (Mason Core) (p. 142) before taking the writing-intensive course in the major or take the two courses simultaneously.

Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/research studies requirement and the Mason Core literature (p. 147) requirement.

¹ Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/research studies requirement and the Mason Core literature (p. 147) requirement.

Or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

¹ Additional courses may not be used to fulfill the Mason Core social and behavioral sciences requirement.
George Mason University

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
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<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
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<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
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<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
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<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
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<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
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<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
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</tr>
</tbody>
</table>

1 The two courses used to fulfill the combined college and Mason Core requirements must be from different disciplines in the social and behavioral sciences.

2 HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

**Foreign Language**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Intermediate-level proficiency in one foreign language, fulfilled by: ¹</td>
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<tr>
<td></td>
<td>Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)</td>
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</tr>
<tr>
<td></td>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or completing the following ASL three course sequence:</td>
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<tr>
<td></td>
<td>EDSE 115 American Sign Language (ASL) I</td>
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<tr>
<td></td>
<td>EDSE 116 American Sign Language (ASL) II</td>
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<tr>
<td></td>
<td>EDSE 219 American Sign Language (ASL) III</td>
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</tbody>
</table>

¹ Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Non-Western Culture**

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
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<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 314</td>
<td>Zombies</td>
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<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
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<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
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<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
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<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
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<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
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<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
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<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
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<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
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<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
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<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
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<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
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<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
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<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
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<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<td>HIST 326</td>
<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
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<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
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<td>HIST 335</td>
<td>History of Traditional China</td>
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<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>History of South Africa (Mason Core) (p. 142)</td>
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<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
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<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
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<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
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<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
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<td>HIST 426</td>
<td>The Russian Revolution</td>
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<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
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<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
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<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
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<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
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<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
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<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
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<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
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<td>MUSI 103</td>
<td>Musics of the World (Mason Core)</td>
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<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
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<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
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<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
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<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
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<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
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<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
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<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
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<td>RELI 337</td>
<td>Mysticism: East and West</td>
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<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
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<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>RELI 375</td>
<td>Qur’an and Hadith</td>
<td>3</td>
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<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
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<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
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<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
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<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
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</tbody>
</table>

1 A course used to fulfill the Mason Core global understanding requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

**Code** | **Title**                                                      | **Credits**
<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
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<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
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<td>Oral Communication (p. 142)</td>
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<td>Quantitative Reasoning (p. 143)</td>
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<td>Information Technology and Computing (p. 143)</td>
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<td><strong>Exploration Requirements</strong></td>
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<td></td>
<td>Arts (p. 144)</td>
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<td></td>
<td>Global Understanding (p. 146)</td>
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<td></td>
<td>Literature (p. 147)</td>
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<td>Natural Science (p. 148)</td>
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<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
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<td>Western Civilization/World History (p. 151)</td>
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<td></td>
<td><strong>Integration Requirements</strong></td>
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<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
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</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
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</table>
Honors in the Major

Highly-qualified students may pursue advanced work leading to graduation with honors in the major. Students admitted to the honors program in the major take a two-course sequence: CRIM 491 Honors Seminar I and CRIM 492 RS: Honors Seminar II. To graduate with honors in criminology, law and society, students must complete both courses with a minimum GPA of 3.50 in the two courses.

Criminology, Law and Society, BS

Banner Code: LA-BS-CLS

354 Enterprise Hall
Fairfax Campus

Website: cls.gmu.edu/programs/la-bs-cls

Criminology, Law and Society provides a focused study of the justice system and social, human, and moral problems raised in the justice field. This course of study prepares students for careers in law enforcement, corrections, the courts, investigations, juvenile justice, private and homeland security, and related social and human services. The BS degree provides students a focused approach, requiring more courses within the field of criminology. Students who earn the BS degree either gain work experience in a criminal justice agency, or complete a minor in a related field to enhance their study of justice.

Admissions & Policies

Policies

Students pursuing this degree with an internship must complete 60 major credits. Students who complete an approved minor need 45 major credits, plus 15-20 credits in the minor, some of which may overlap with the major credits. Students who pursue a minor must meet with an advisor in the minor program to verify minor requirements and add the minor to their record.

A minimum GPA of 2.00 is required. Students may apply a maximum of 18 credits of transferable ADJ courses from the Virginia Community College System (VCCS) or comparable courses at another community college to fulfill the degree requirements. Once a student matriculates at Mason, no courses may be taken at another institution without prior written approval from the program and the dean.

No more than 12 credits of CRIM 485 Study Abroad can be applied to the major. No more than 15 credits of CRIM 490 Special Topics can be applied to the major.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 339) tab.

Core Courses in the Major

<table>
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<th>Code</th>
<th>Title</th>
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<tr>
<td>CRIM 100</td>
<td>Introduction to Criminal Justice (Mason Core) (p. 142)</td>
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<tr>
<td>CRIM 306</td>
<td>Criminal Justice Ethics</td>
<td>3</td>
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<tr>
<td>CRIM 315</td>
<td>Research Methods and Analysis in Criminology</td>
<td>3</td>
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<tr>
<td>CRIM 424</td>
<td>Constitutional Law, Criminal Process and Rights</td>
<td>3</td>
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<tr>
<td>CRIM 495</td>
<td>Capstone in Criminology, Law and Society (Mason Core) (p. 142)</td>
<td>3</td>
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</table>

Total Credits 15

Internship or Minor in the Major

Select either 15 credits of internship or a minor: 15-20

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CRIM 479 &amp; CRIM 480</td>
<td>Preparation for Internship and Internship</td>
<td>15-20</td>
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</table>

Minor in a Related Field

<table>
<thead>
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<th>Code</th>
<th>Title</th>
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<tr>
<td>ADJ 686</td>
<td>Computational and Data Sciences Minor (15 credits)</td>
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<tr>
<td>ADJ 1063</td>
<td>Computer Science Minor (19-20 credits) (p. 1063)</td>
<td>19-20</td>
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<tr>
<td>ADJ 1140</td>
<td>Data Analysis Minor (15 credits) (p. 1140)</td>
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<tr>
<td>ADJ 459</td>
<td>Forensic Psychology Minor (18 credits) (p. 459)</td>
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<tr>
<td>ADJ 775</td>
<td>Forensic Science Minor (20 credits) (p. 775)</td>
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<tr>
<td>ADJ 723</td>
<td>Geographic Information Systems Minor (18-20 credits) (p. 723)</td>
<td>18-20</td>
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<tr>
<td>ADJ 1128</td>
<td>Information Technology Minor (18 credits) (p. 1128)</td>
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<tr>
<td>ADJ 344</td>
<td>Intelligence Analysis Minor (18 credits) (p. 344)</td>
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<tr>
<td>ADJ 983</td>
<td>International Security Minor (18 credits) (p. 983)</td>
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</tr>
<tr>
<td>ADJ 985</td>
<td>Legal Studies Minor (18 credits) (p. 985)</td>
<td>18</td>
</tr>
<tr>
<td>ADJ 1150</td>
<td>Statistics Minor (15 credits) (p. 1150)</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits 15-20

Electives in the Major

Select ten electives from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 210</td>
<td>Introduction to Criminology</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 220</td>
<td>Introduction to Law and Society</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 230</td>
<td>Introduction to Homeland Security</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 301</td>
<td>Public Law and the Judicial Process</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 302</td>
<td>Public Law and the Judicial Process (or GOVT 301)</td>
<td>3</td>
</tr>
</tbody>
</table>
Available Concentrations

- Concentration in Criminal Justice (CJUS) (p. 340)
- Concentration in Homeland Security and Justice (HSJ) (p. 340)
- Concentration in Law and Society (LAWS) (p. 340)

### Concentration in Criminal Justice (CJUS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 15 credits from the following:</td>
<td>15</td>
</tr>
<tr>
<td>CRIM 210</td>
<td>Introduction to Criminology</td>
<td></td>
</tr>
<tr>
<td>CRIM 302</td>
<td>Delinquency</td>
<td></td>
</tr>
<tr>
<td>CRIM 304</td>
<td>Computer Crime, Forensics, and Auditing</td>
<td></td>
</tr>
<tr>
<td>or IT 357</td>
<td>Computer Crime, Forensics, and Auditing</td>
<td></td>
</tr>
<tr>
<td>CRIM 305</td>
<td>Crime and Crime Policy</td>
<td></td>
</tr>
<tr>
<td>CRIM 307</td>
<td>Social Inequality, Crime, and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 308</td>
<td>Human Rights and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 310</td>
<td>Introduction to the Intelligence Community</td>
<td></td>
</tr>
<tr>
<td>CRIM 312</td>
<td>Intelligence Analysis Techniques</td>
<td></td>
</tr>
<tr>
<td>CRIM 320</td>
<td>Crime and Place</td>
<td></td>
</tr>
<tr>
<td>CRIM 325</td>
<td>Hate Crime</td>
<td></td>
</tr>
<tr>
<td>CRIM 350</td>
<td>Counterintelligence</td>
<td></td>
</tr>
<tr>
<td>CRIM 400</td>
<td>Applied Criminal Psychology</td>
<td></td>
</tr>
<tr>
<td>CRIM 401</td>
<td>Policing in America</td>
<td></td>
</tr>
<tr>
<td>CRIM 402</td>
<td>Punishment and Corrections</td>
<td></td>
</tr>
<tr>
<td>CRIM 403</td>
<td>Community Corrections</td>
<td></td>
</tr>
<tr>
<td>CRIM 404</td>
<td>Crime Victims and Victimization</td>
<td></td>
</tr>
<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CRIM 406</td>
<td>Family Law and the Justice System</td>
<td></td>
</tr>
<tr>
<td>CRIM 407</td>
<td>Advanced Topics in Law and Society</td>
<td></td>
</tr>
<tr>
<td>CRIM 408</td>
<td>Criminal Courts</td>
<td></td>
</tr>
<tr>
<td>CRIM 409</td>
<td>Community Policing</td>
<td></td>
</tr>
<tr>
<td>CRIM 410</td>
<td>Criminal Investigations</td>
<td></td>
</tr>
<tr>
<td>CRIM 411</td>
<td>Innovations in Policing</td>
<td></td>
</tr>
<tr>
<td>CRIM 422</td>
<td>Controversial Legal Issues</td>
<td></td>
</tr>
<tr>
<td>CRIM 423</td>
<td>Constitutional Law: Civil Rights and Liberties</td>
<td></td>
</tr>
<tr>
<td>or GOVT 423</td>
<td>Constitutional Law: Civil Rights and Liberties</td>
<td></td>
</tr>
<tr>
<td>CRIM 425</td>
<td>Criminal Justice Management</td>
<td></td>
</tr>
<tr>
<td>CRIM 430</td>
<td>Criminal Law</td>
<td></td>
</tr>
<tr>
<td>CRIM 460</td>
<td>Surveillance and Privacy in Contemporary Society</td>
<td></td>
</tr>
<tr>
<td>CRIM 462</td>
<td>Law Enforcement and Homeland Security</td>
<td></td>
</tr>
<tr>
<td>CRIM 471</td>
<td>Prevention and Deterrence of Crime</td>
<td></td>
</tr>
<tr>
<td>CRIM 475</td>
<td>Theory and Politics of Terrorism</td>
<td></td>
</tr>
<tr>
<td>CRIM 485</td>
<td>Study Abroad</td>
<td></td>
</tr>
<tr>
<td>CRIM 490</td>
<td>Special Topics</td>
<td></td>
</tr>
<tr>
<td>CRIM 491</td>
<td>Honors Seminar I</td>
<td></td>
</tr>
<tr>
<td>CRIM 492</td>
<td>RS: Honors Seminar II</td>
<td></td>
</tr>
<tr>
<td>CRIM 498</td>
<td>Research Practicum</td>
<td></td>
</tr>
<tr>
<td>CRIM 499</td>
<td>Independent Study</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 30

1. Students may select an optional concentration to fulfill a portion of this required elective credit.

### Optional Concentrations in the Major

Criminology, law and society majors have the option of obtaining a concentration by completing 15 of their 30 elective credits within one of the following areas. Students can pursue only one concentration. Credits earned in CRIM 490 Special Topics may be applied to a concentration as appropriate for the content of the course, to be determined by the undergraduate director.
CRIM 405  Law and Justice around the World (Mason Core) (p. 142)
CRIM 406  Family Law and the Justice System
CRIM 407  Advanced Topics in Law and Society
CRIM 408  Criminal Courts
CRIM 422  Controversial Legal Issues
CRIM 423  Constitutional Law: Civil Rights and Liberties
or GOVT 423 Constitutional Law: Civil Rights and Liberties
CRIM 430  Criminal Law
CRIM 460  Surveillance and Privacy in Contemporary Society

Total Credits  15

Writing-Intensive Requirement
The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in criminology, law and society fulfill this requirement by successfully completing CRIM 495 Capstone in Criminology, Law and Society (Mason Core) (p. 142). Students should complete ENGH 302 Advanced Composition (Mason Core) (p. 142) before taking the writing-intensive course in the major or take the two courses simultaneously.

Upper Level Requirement
Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives
Any remaining credits may be completed with elective courses to bring the degree total to 120.

Mason Core
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2 Minimum 3 credits required.

Honors

Honors in the Major
Highly qualified students may pursue advanced work leading to graduation with honors in the major. Students admitted to the honors program in the major take a two-course sequence: CRIM 491 Honors Seminar I and CRIM 492 RS: Honors Seminar II. To graduate with honors in criminology, law and society, students must complete both courses with a minimum GPA of 3.50 in the two courses.

Criminology, Law and Society Minor
Banner Code: CLS

Academic Advising
354 Enterprise Hall
Fairfax Campus
Website: cls.gmu.edu/programs/la-minor-cls-cls

Through the minor in criminology, law and society, students develop knowledge of the principles, institutions, and practices of the systems for administering justice. It provides a solid foundation for students seeking to supplement their major area of study, to develop knowledge and skills needed for justice-related occupations, or to lay the foundation for law school or graduate study in the justice field. Students obtain an overview of the justice system and develop advanced knowledge of selected features of the justice system.

Students should plan their course of study with a criminology, law and society advisor assigned by the program.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. No more than 6 credits of CRIM 485 Study Abroad can be applied to the minor. The minor must be approved by the advisor before graduation.

For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 341) tab.
Core Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 100</td>
<td>Introduction to Criminal Justice (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select four courses in CRIM (p. 1514)</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

1 Three of the courses must be upper-level. CRIM 479 Preparation for Internship, CRIM 480 Internship, CRIM 498 Research Practicum, and CRIM 499 Independent Study may not be used to fulfill this requirement. A maximum of 6 credits of CRIM 485 Study Abroad can be applied to the minor.

Criminology, Law and Society, MA

Banner Code: LA-MA-CLS

Academic Advising

354 Enterprise Hall
Fairfax Campus

Email: clsgrad@gmu.edu
Website: cls.gmu.edu/programs/la-ma-cls

The MA in Criminology, Law and Society prepares students to conduct high-quality scientific research in the criminal justice field. Students learn cutting-edge social science methods and data analysis skills for advancing knowledge in the social sciences and for making a difference in the development and evaluation of justice policies and practices. The MA in Criminology, Law and Society prepares students to pursue advanced graduate studies at the doctoral level or for positions that require rigorous research skills.

For a related program, see Criminology, Law and Society, PhD (p. 343)

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admission section of this catalog. For information specific to the MA in criminology, law and society, see Application Requirements and Deadlines (http://cls.gmu.edu/programs/la-ma-cls/application) on the departmental web site.

Policies

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Transfer Credits

Students who have prior graduate course work that has not been applied to another degree may request to have a maximum of 12 of these graduate credits transferred to their degree program, with approval of the graduate director and dean and in accordance with the Academic Policies section of this catalog.

Reduction of Credits

Students entering the master’s program with a previously conferred graduate degree in a related discipline may request that the required credits for the MA degree be reduced by a maximum of 12 credits with approval of the graduate director and dean and in accordance with the Graduate Policies section of this catalog.

Satisfactory Progress

Each new student is assigned a faculty advisor who helps develop a program of study. The advisor and faculty assess the progress of all students annually. Students who fail to make satisfactory progress may be terminated from the program. Satisfactory progress in the MA in criminology, law and society is defined as maintaining a minimum GPA of 3.00 with the minimum grade of B- in all courses. Students who receive a grade below B- will receive an academic warning the first time and a letter of termination the second time.

Requirements

Degree Requirements

Total credits: 30

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 342) tab.

Required Coursework

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 700</td>
<td>Values, Ethics, and Criminal Justice Policy</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 710</td>
<td>Criminological Theory</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 720</td>
<td>Law and Social Science</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 740</td>
<td>Justice Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 760</td>
<td>Evidence-Based Crime Policy</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Analytical Methods Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 780</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 782</td>
<td>Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 783</td>
<td>Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Thesis

Students must apply 6 credits of thesis to the degree. A thesis proposal must be submitted to the graduate director prior to registering for thesis credits. The master’s thesis must be defended orally before a committee of three faculty appointed by the graduate director.

Students must follow the thesis enrollment policy of the university and once enrolled in CRIM 799 Master’s Thesis, maintain continuous enrollment as specified in Academic Policies.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 799</td>
<td>Master’s Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>
Criminology, Law and Society, PhD

Banner Code: LA-PHD-CLS

Academic Advising

354 Enterprise Hall
Fairfax Campus

Email: clsgrad@gmu.edu
Website: cls.gmu.edu/programs/la-phd-cls

The PhD in Criminology, Law and Society is designed to produce top academic scholars and leaders in policy and applied settings. Students coming to this program seek to make a difference in the development and evaluation of policy using cutting edge social science methods. The program provides a rigorous course of study that will prepare students to do research, teach, develop and test policies, and administer agencies and programs designed to administer law, deliver justice, reduce crime, and enhance domestic security.

For a related program, see Criminology, Law and Society, MA (p. 342)

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the PhD degree in Criminology, Law and Society, see Application Requirements and Deadlines (http://cls.gmu.edu/programs/application/LA-PHD-CLS) on the departmental website.

Policies

For policies governing all graduate degrees, see Graduate Policies (p. 90).

Master's Degree

Students admitted to the doctoral program without a master’s degree need to earn the MA in Criminology, Law and Society as a component of the doctoral degree. The requirements for the MA degree are included in the requirements for the PhD listed below. When beginning the doctoral program students should add the master’s degree as a secondary program using the Secondary Program Application (http://registrar.gmu.edu/wp-content/uploads/GSMA.pdf) and then apply online (http://registrar.gmu.edu/students/graduation/process) to graduate the semester prior to meeting all requirements for the master's degree.

Reduction of Credit

Students entering the doctoral program with a master’s degree in a related discipline, including a law degree, may request that the required credits for the doctoral degree be reduced by a maximum of 30 credits with approval of the graduate director and dean and in accordance with university policy. Students who have prior graduate course work that has not been applied to another degree may request to have a maximum of 12 of these graduate credits transferred to their degree program, with approval of the graduate director and dean and in accordance with university policy.

Satisfactory Progress

Each new student is assigned an advisor who helps develop a program of study. On advancement to candidacy, the chair of the dissertation committee becomes the advisor. The advisor and faculty assess the progress of all students annually. Students who fail to make satisfactory progress may be terminated from the program. Satisfactory progress in the PhD in criminology, law and society is defined as maintaining a minimum GPA of 3.00 with the minimum grade of B- in all courses. Students who receive a grade below B- will receive an academic warning the first time and a letter of termination the second time.

Requirements

Degree Requirements

Total credits: 72

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 343) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 700</td>
<td>Values, Ethics, and Criminal Justice Policy</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 710</td>
<td>Criminological Theory</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 720</td>
<td>Law and Social Science</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 740</td>
<td>Justice Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 760</td>
<td>Evidence-Based Crime Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Analytical Methods Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 780</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 782</td>
<td>Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 783</td>
<td>Statistics II</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 781</td>
<td>Justice Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 784</td>
<td>Experimental Criminology</td>
<td></td>
</tr>
<tr>
<td>CRIM 795</td>
<td>Special Topics</td>
<td></td>
</tr>
<tr>
<td>CRIM 796</td>
<td>Directed Reading</td>
<td></td>
</tr>
<tr>
<td>EDRS 812</td>
<td>Qualitative Methods in Educational Research</td>
<td></td>
</tr>
<tr>
<td>GGS 650</td>
<td>Introduction to GIS Algorithms and Programming</td>
<td></td>
</tr>
<tr>
<td>GGS 754</td>
<td>Earth Science Data and Advanced Data Analysis</td>
<td></td>
</tr>
<tr>
<td>PSYC 633</td>
<td>Evaluative Research in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 640</td>
<td>Techniques in Industrial/Organizational Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 646</td>
<td>Longitudinal Data Analysis</td>
<td></td>
</tr>
<tr>
<td>PSYC 652</td>
<td>Quantitative Methods II: Analysis of Variance</td>
<td></td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology</td>
<td></td>
</tr>
<tr>
<td>PUBP 754</td>
<td>Geographic Information Systems and Spatial Analysis for Public Policy</td>
<td></td>
</tr>
<tr>
<td>SOCI 631</td>
<td>Survey Research</td>
<td></td>
</tr>
<tr>
<td>SOCI 632</td>
<td>Evaluation Research for Social Programs</td>
<td></td>
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</tbody>
</table>
One Professionalization Course

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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 797</td>
<td>Professionalization Seminar</td>
<td>0</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Electives

Select 21-30 credits of electives from criminology, law and society courses offered by the department. (p. 1514)¹

¹ Students who take fewer than 30 elective credits will have accordingly more dissertation credits. Students may substitute 3-6 credits of non-CRIM courses with prior written approval of the director of the graduate program.

Major Area Paper

Students must write and have approved a major area paper. Students are not eligible to submit a major area paper until they have successfully completed 36 credits.

Advancement to Candidacy

To advance to candidacy, students must complete all course work required on their approved program of study. Students must also successfully write and have approved a major area paper. In addition, students must have a dissertation committee appointed by the Dean's Office and have defended their dissertation proposal.

Dissertation

Dissertation Committee

The student's committee is composed of at least four faculty members. Three of the four must be members of the graduate faculty in criminology, law and society. The fourth must be from outside the university. The faculty member serving as the chair of the committee must be a member of the graduate faculty in criminology, law and society.

Dissertation Research

Once enrolled in CRIM 998 Doctoral Dissertation Proposal, students in this degree program must maintain continuous registration in CRIM 998 Doctoral Dissertation Proposal or CRIM 999 Doctoral Dissertation Research each semester (excluding summers) until the dissertation is submitted to and accepted by the University Libraries. Once enrolled in CRIM 999 Doctoral Dissertation Research, students must follow the university’s continuous registration policy as specified in AP.6.10.6 Dissertation Registration (p. 98). Students who defend in the summer must be registered for at least 1 credit of CRIM 999 Doctoral Dissertation Research.

Students may apply to this degree a minimum of 3 and a maximum of 6 credits of CRIM 998 Doctoral Dissertation Proposal and a minimum of 12 and a maximum of 21 credits of CRIM 999 Doctoral Dissertation Research. They may apply a maximum of 24 dissertation credits (CRIM 998 Doctoral Dissertation Proposal and CRIM 999 Doctoral Dissertation Research combined) to the degree. Because of the continuous registration policy, students may be required to register for additional credits of these courses. Students who take fewer than 24 dissertation credits will have accordingly more elective credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 15/24 credits from the following:</td>
<td>15-24</td>
<td></td>
</tr>
<tr>
<td>CRIM 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>CRIM 999</td>
<td>Doctoral Dissertation Research</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15-24</td>
</tr>
</tbody>
</table>

The final requirement is a dissertation of original research representing a significant contribution to the field, which should be publishable in a refereed journal or a quality press.

Intelligence Analysis Minor

Banner Code: NTLA

Academic Advising

354 Enterprise Hall
Fairfax Campus

Website: cls.gmu.edu/programs/la-minor-cls-ntla

This minor is designed for students who are interested in careers in homeland security or other intelligence-related fields. This minor focuses on developing the skills of intelligence analysis, including research, writing, briefing, and analytical tradecraft. Students explore ethical issues in the field and new developments in the analysis of intelligence information.

The curriculum fosters a broad knowledge of content in several disciplines valued by employers in homeland security and intelligence-related fields. The minor offers students sufficient flexibility to pursue their primary interests while also preparing themselves for careers in intelligence analysis.

Students who are American citizens may apply for an internship in intelligence analysis at the Federal Bureau of Investigation or other agencies. Credits earned for an internship are in addition to those required for the minor and do not contribute toward completion of the minor. Students who intend to apply for the internship should begin the application process no later than September of their sophomore year, since the security clearance process can take a year or more. Students may wish to participate in the Clearance Ready Program offered through Career Services. Information can be found at https://careers.gmu.edu/students/find-job-or-internship/clearance-ready-program. Students in this minor are strongly encouraged to pursue advanced training in Arabic, Chinese, or Russian.

Admissions & Policies

Policies

Twelve credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. This minor is multidisciplinary in nature and requires coursework from at least two different academic departments. It must be approved by the advisor before graduation. A maximum of 6 credits of CRIM 485 Study Abroad can be applied to the minor.
For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 344) tab.

Students should plan their course of study with a criminology, law and society advisor assigned by the program.

**Core Courses in the Minor**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIM 310</td>
<td>Introduction to the Intelligence Community</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 312</td>
<td>Intelligence Analysis Techniques</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

**Electives in the Minor**

The electives must consist of courses from at least two different departments (two different subject prefixes).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four electives from the following:</td>
<td>12</td>
</tr>
<tr>
<td>CONF 345</td>
<td>Social Dynamics of Terrorism, Security, and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 230</td>
<td>Introduction to Homeland Security</td>
<td></td>
</tr>
<tr>
<td>CRIM 304  or IT 357</td>
<td>Computer Crime, Forensics, and Auditing</td>
<td></td>
</tr>
<tr>
<td>CRIM 350</td>
<td>Counterintelligence</td>
<td></td>
</tr>
<tr>
<td>CRIM 400</td>
<td>Applied Criminal Psychology</td>
<td></td>
</tr>
<tr>
<td>CRIM 460</td>
<td>Surveillance and Privacy in Contemporary Society</td>
<td></td>
</tr>
<tr>
<td>CRIM 462</td>
<td>Law Enforcement and Homeland Security</td>
<td></td>
</tr>
<tr>
<td>CRIM 475</td>
<td>Theory and Politics of Terrorism</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 412</td>
<td>Air Photography Interpretation</td>
<td></td>
</tr>
<tr>
<td>GGS 416</td>
<td>Satellite Image Analysis</td>
<td></td>
</tr>
<tr>
<td>GOVT 331</td>
<td>Government and Politics of Latin America</td>
<td></td>
</tr>
<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td></td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td></td>
</tr>
<tr>
<td>GOVT 334</td>
<td>Government and Politics of Europe</td>
<td></td>
</tr>
<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td></td>
</tr>
<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

1 Contact minor director for approval of specific sections of special topics courses.

**Department of Economics**

D150 Buchanan Hall
Fairfax Campus

Phone: 703-993-1151
Website: economics.gmu.edu

**Undergraduate Programs**

The department offers a bachelor of arts (BA) and a bachelor of science (BS) degree in economics. The bachelor of science degree program is designed for students who desire a more technical program with a stronger emphasis on economic and quantitative analysis. It is especially appropriate for students who anticipate a career as an economic analyst in government, consulting, trade associations, or private sector positions that emphasize economic research and analysis. The requirements are also suitable for students planning postgraduate education in economics or more quantitative business administration programs.

Students interested in careers in the business world can pursue a concentration in managerial economics within the BS in economics.

The Bachelor of Arts in Economics is designed for students with an interested in the liberal arts. It is appropriate for those who prefer a less quantitative degree program and may be especially suitable for students
planning to attend law school or graduate programs in business or public administration.

**Bachelor's/Accelerated Master's Program**
The department offers highly qualified undergraduates the opportunity to apply to an accelerated master's degree program in economics (p. 351). If accepted, students will be able to earn both an undergraduate and a graduate degree after satisfactory completion of 144 credits, generally within five years.

**Graduate Programs**
The department offers a master's and a doctoral degree in economics. The department is noted for its emphasis on comparative institutional analysis and its focus on the relations among economic, political, and legal institutions. This is reflected in the specializations associated with the department: experimental economics, Austrian economics, public choice, constitutional political economy, law and economics, and new institutional economics.

**Funding**
The department offers graduate teaching and research assistantships and fellowships that are awarded on a competitive basis. Other sources of funding such as grants, loans, and employment on campus are also available. Students with assistantships must register for a minimum of 6 credits a semester and, like all students, demonstrate satisfactory progress toward their degree.

**Faculty**

**Department Faculty**

**Distinguished Professors Emeriti**

Smith

**Professors Emeriti**

Chung, Phillips, Vaughn

**Professors**

Bennett, Boettke, Boudreaux, Caplan, Cowen, Groseclose, Heiner, Houser (chair), Klein, Leeson, Levy, Martinelli, McCabe, Nye, Ramirez, Stratmann, Tabarrok, Wagner, White, Williams

**Associate Professors**

Coyne, Hanson, Johnson, Jones, Koyama, Meyer

**Term Associate Professor**

Dunick, Rustici

**Programs**

- Economics Minor
- Economics, BA
- Economics, BS
- Economics, MA
- Economics, PhD

---

**Economics, BA**

**Banner Code:** LA-BA-ECON

D150 Buchanan Hall
Fairfax Campus

Website: economics.gmu.edu/programs/la-ba-econ

Economics is about more than money and profits. It is a way of looking at the world through the lens of incentives, choices, and markets to help uncover new solutions to the persistent problems in our society. This economic perspective sheds light on important issues in the areas of production, education, crime, the environment, international trade, immigration, health care, economic growth, poverty, and more. The bachelor of arts in Economics is designed for students with a strong interest in the liberal arts. It is appropriate for those who prefer a less quantitative degree program than the bachelor of science in Economics and may be especially appropriate for students planning to attend law school or graduate programs in business or public administration.

**Admissions & Policies**

**Policies**

Students pursuing this degree must complete a minimum of 48 credits of required coursework with a minimum GPA of 2.00. Students in the concentration in philosophy, politics, and economics complete a minimum of 70 credits. Students must also complete ECON 103 Contemporary Microeconomic Principles (Mason Core) (p. 142) and ECON 104 Contemporary Macroeconomic Principles (Mason Core) (p. 142) with at least a 2.00 (C) in each.

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 346) tab.

Economics majors can fulfill the Mason Core (p. 142) synthesis requirement with ECON 309 Economic Problems and Public Policies (Mason Core) (p. 142). Some economics courses may fulfill the Mason Core (p. 142) requirement in global understanding or the college requirement in non-Western culture. Check with the departmental advising office for more information.

**Core Courses without Concentration**

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 311</td>
<td>Intermediate Macroeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>
Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HNRT 125</td>
<td>Applied Quantitative Reasoning (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

**Statistics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 210 &amp; BUS 310</td>
<td>Business Analytics I and Business Analytics II</td>
<td>4-6</td>
</tr>
<tr>
<td>STAT 250 &amp; STAT 350</td>
<td>Introductory Statistics I (Mason Core) (p. 142) and Introductory Statistics II</td>
<td>4-6</td>
</tr>
<tr>
<td>STAT 344 &amp; STAT 354</td>
<td>Probability and Statistics for Engineers and Scientists I and Probability and Statistics for Engineers and Scientists II</td>
<td>4-6</td>
</tr>
</tbody>
</table>

Total Credits 4-6

**Electives with Concentration**

Select 18 credits of electives in economics at the 300 and 400 level (p. 1564)¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL/GOVT 324</td>
<td>Modern Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL/GOVT 327</td>
<td>Contemporary Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 357</td>
<td>Philosophy of the Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL 371</td>
<td>Philosophy of Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 358</td>
<td>Ethics and Economics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 411</td>
<td>Theories of Decision</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

¹ ECON 385 International Economic Policy may not be used to fulfill this requirement. If ECON 340 Introduction to Mathematical Economics is chosen as an elective, students need not take the 4-credit course MATH 114 Analytic Geometry and Calculus II; however, MATH 114 Analytic Geometry and Calculus II is strongly recommended for students considering a graduate school in economics since it is required for admission to most graduate programs. An additional calculus course beyond MATH 114 Analytic Geometry and Calculus II is also advisable for students considering graduate study in economics.
Capstone Experience Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 469</td>
<td>Philosophy, Politics, and Economics</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL/ECON 460</td>
<td>Senior Seminar in Philosophy, Politics, and Economics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Writing-Intensive Requirement

The university requires all students to complete at least one course designated as "writing intensive" in their majors at the 300 level or above. Students majoring in economics fulfill this requirement by successfully completing one of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 345</td>
<td>Introduction to Econometrics</td>
<td></td>
</tr>
<tr>
<td>ECON 355</td>
<td>The Political Economy of Nonprofit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td></td>
</tr>
<tr>
<td>ECON 365</td>
<td>Topics in Economic History</td>
<td></td>
</tr>
<tr>
<td>ECON 435</td>
<td>Economics of Energy</td>
<td></td>
</tr>
<tr>
<td>ECON 470</td>
<td>Economics of Regulation</td>
<td></td>
</tr>
</tbody>
</table>

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH (p. 1212)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRIM (p. 1514)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON (p. 1564)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVT (p. 1774)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST (p. 1818)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LING (p. 1896)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC (p. 2074)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCI (p. 2167)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>

Upper Level Requirements

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL (p. 2044)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RELI (p. 2144)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Note that the following courses may not be used to fulfill this requirement:
- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Foreign Language

Intermediate-level proficiency in one foreign language, fulfilled by:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSE 115</td>
<td>American Sign Language (ASL) I</td>
<td></td>
</tr>
<tr>
<td>EDSE 116</td>
<td>American Sign Language (ASL) II</td>
<td></td>
</tr>
<tr>
<td>EDSE 219</td>
<td>American Sign Language (ASL) III</td>
<td></td>
</tr>
</tbody>
</table>

1 The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

2 HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.
**Non-Western Culture**
Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| ANTH 114 | Introduction to Cultural Anthropology  
(Mason Core) (p. 142) | 3       |
| ANTH 300 | Civilizations                      | 3       |
| ANTH 302 | Peoples and Cultures of Latin America  
(Mason Core) (p. 142) | 3       |
| ANTH 307 | Ancient Mesoamerica  
(Mason Core) (p. 142) | 3       |
| ANTH 308 | Peoples and Cultures of the Middle East  
(Mason Core) (p. 142) | 3       |
| ANTH 309 | Peoples and Cultures of India  
(Mason Core) (p. 142) | 3       |
| ANTH 313 | Myth, Magic, and Mind  
(Mason Core) (p. 142) | 3       |
| ANTH 314 | Zombies                           | 3       |
| ANTH 330 | Peoples and Cultures of Selected Regions: Non-Western | 3       |
| ANTH 332 | Cross-Cultural Perspectives on Globalization  
(Mason Core) (p. 142) | 3       |
| ANTH 381 | Medical Anthropology              | 3       |
| ANTH 396 | Issues in Anthropology: Social Sciences  
(Mason Core) (p. 142) | 3       |
| ARAB 360 | Topics in Arabic Cultural Production | 3       |
| ARAB 420 | Survey of Arabic Literature     | 3       |
| ARAB 440 | Topics in Arabic Religious Thought and Texts  
(Mason Core) (p. 142) | 3       |
| ARTH 203 | Survey of Asian Art  
(Mason Core) (p. 142) | 3       |
| ARTH 204 | Survey of Latin American Art  
(Mason Core) (p. 142) | 3       |
| ARTH 206 | Survey of African Art  
(Mason Core) (p. 142) | 3       |
| ARTH 318 | Art and Archaeology of Ancient Egypt  | 3       |
| ARTH 319 | Art and Archaeology of the Ancient Near East  
(Mason Core) (p. 142) | 3       |
| ARTH 320 | Art of the Islamic World  
(Mason Core) (p. 142) | 3       |
| ARTH 382 | Arts of India  
(Mason Core) (p. 142) | 3       |
| ARTH 383 | Arts of Southeast Asia  
(Mason Core) (p. 142) | 3       |
| ARTH 384 | Arts of China  
(Mason Core) (p. 142) | 3       |
| ARTH 385 | Arts of Japan  
(Mason Core) (p. 142) | 3       |
| ARTH 386 | The Silk Road  
(Mason Core) (p. 142) | 3       |
| ARTH 482 | RS: Advanced Studies in Asian Art | 3       |
| CHIN 318 | Introduction to Classical Chinese  
(Mason Core) (p. 142) | 3       |
| CHIN 320 | Contemporary Chinese Film        | 3       |
| CHIN 325 | Major Chinese Writers  
(Mason Core) (p. 142) | 3       |
| DANC 118 | World Dance  
(Mason Core) (p. 142) | 3       |
| ECON 361 | Economic Development of Latin America  
(Mason Core) (p. 142) | 3       |
| ECON 362 | African Economic Development  
(Mason Core) (p. 142) | 3       |
| FREN 451 | Topics in Sub-Saharan Francophone Literature and Culture  | 3       |
| FREN 454 | Topics in Caribbean Francophone Literature and Culture | 3       |
| GGS 101 | Major World Regions  
(Mason Core) (p. 142) | 3       |
| GGS 316 | Geography of Latin America       | 3       |
| GGS 325 | Geography of North Africa and the Middle East | 3       |
| GGS 330 | Geography of the Soviet Succession States | 3       |
| GGS 399 | Select Topics in GGS             | 3       |
| GOVT 328 | Global Political Theory          | 3       |
| GOVT 332 | Government and Politics of the Middle East and North Africa | 3       |
| GOVT 333 | Government and Politics of Asia  | 3       |
| GOVT 338 | Government and Politics of Russia | 3       |
| GOVT 340 | Central Asian Politics           | 3       |
| GOVT 341 | Chinese Foreign Policy           | 3       |
| GOVT 345 | Islam and Politics               | 3       |
| GOVT 433 | Political Economy of East Asia   | 3       |
| HIST 251 | Survey of East Asian History  
(Mason Core) (p. 142) | 3       |
| HIST 252 | Survey of East Asian History  
(Mason Core) (p. 142) | 3       |
| HIST 261 | Survey of African History  
(Mason Core) (p. 142) | 3       |
| HIST 262 | Survey of African History  
(Mason Core) (p. 142) | 3       |
| HIST 271 | Survey of Latin American History  
(Mason Core) (p. 142) | 3       |
| HIST 272 | Survey of Latin American History  
(Mason Core) (p. 142) | 3       |
| HIST 281 | Survey of Middle Eastern Civilization  
(Mason Core) (p. 142) | 3       |
| HIST 282 | Survey of Middle Eastern Civilization  
(Mason Core) (p. 142) | 3       |
| HIST 326 | Stalinism                        | 3       |
| HIST 327 | The Soviet Union and Russia Since World War II | 3       |
| HIST 328 | Rise of Russia  
(Mason Core) (p. 142) | 3       |
| HIST 329 | Modern Russia and the Soviet Union  
(Mason Core) (p. 142) | 3       |
| HIST 353 | History of Traditional China     | 3       |
| HIST 354 | Modern China  
(Mason Core) (p. 142) | 3       |
| HIST 356 | Modern Japan  
(Mason Core) (p. 142) | 3       |
| HIST 357 | Postwar Japan  
(Mason Core) (p. 142) | 3       |

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1. Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).
HIST 358 Post-1949 China (Mason Core) (p. 142) 3
HIST 360 History of South Africa (Mason Core) (p. 142) 3
HIST 364 Revolution and Radical Politics in Latin America (Mason Core) (p. 142) 3
HIST 365 Conquest and Colonization in Latin America (Mason Core) (p. 142) 3
HIST 366 Comparative Slavery 3
HIST 367 History, Fiction, and Film in Latin America 3
HIST 368 Topics in Global History (Mason Core) (p. 142) 3
HIST 426 The Russian Revolution 3
HIST 460 Modern Iran (Mason Core) (p. 142) 3
HIST 461 Arab-Israeli Conflict 3
HIST 462 Women in Islamic Society (Mason Core) (p. 142) 3
HIST 465 The Middle East in the 20th Century 3
JAPA 310 Japanese Culture in a Global World (Mason Core) (p. 142) 3
JAPA 340 Topics in Japanese Literature (Mason Core) (p. 142) 3
KORE 320 Korean Popular Culture in a Global World 3
MUSI 103 Musics of the World (Mason Core) (p. 142) 3
RELI 211 Religions of the West (Mason Core) (p. 142) 3
RELI 212 Religions of Asia (Mason Core) (p. 142) 3
RELI 240 Death and the Afterlife in World Religions 3
RELI 272 Islam 3
RELI 313 Hinduism (Mason Core) (p. 142) 3
RELI 314 Chinese Philosophies and Religious Traditions 3
RELI 315 Buddhism (Mason Core) (p. 142) 3
RELI 337 Mysticism: East and West 3
RELI 365 Muhammad: Life and Legacy 3
RELI 374 Islamic Thought (Mason Core) (p. 142) 3
RELI 375 Qur’an and Hadith 3
RELI 379 Islamic Law, Society, and Ethics 3
RELI 387 Islam, Democracy, and Human Rights 3
RELI 490 Comparative Study of Religions (Mason Core) (p. 142) 3
RUSS 353 Russian Civilization (Mason Core) (p. 142) 3
RUSS 354 Contemporary Post-Soviet Life (Mason Core) (p. 142) 3

**Mason Core**
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Foundation Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Integration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
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<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>40</td>
</tr>
</tbody>
</table>

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2. Minimum 3 credits required.

**Honors**

**Honors in the Major**
Students pursuing departmental honors must complete 6 hours of ECON 495 RS: Honors Thesis in Economics culminating with an original work of research and an oral presentation. Requirements for departmental honors are in addition to the coursework required for the major. Students must complete ECON 495 RS: Honors Thesis in Economics with a grade of B or higher to receive departmental honors.

Economics majors who have completed 90 credits with an overall GPA of 3.50 and a GPA of 3.50 within the major are eligible to apply. Not all applicants who meet the minimum requirements are guaranteed acceptance.

Applications will be available starting May 1st of each year. Applications are due by August 1st.

To be accepted into the program and enroll in ECON 495 RS: Honors Thesis in Economics students must submit a research proposal. Research proposals can be developed independently or by completing ECON 494 Introduction to Independent Research in Economics with a grade of B or higher. Completion of ECON 494 Introduction to Independent Research in Economics is not required for departmental honors.
Accelerated Master's

The accelerated master's program listed below specifies the BA in economics as a feeder degree for its program. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

Economics, BA or BS/Economics, Accelerated MA

Overview

Highly-qualified Mason economics majors may apply to the accelerated master's degree program. If accepted, students will be able to earn both a BA (p. 346) or BS (p. 351) and a M (p. 357) in economics after satisfactory completion of 144 credits. Graduates are exceptionally well-prepared for professional school or a PhD program in economics or a related discipline.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in economics, see Application Requirements and Deadlines (http://economics.gmu.edu/programs/application/LA-MA-ACEL-ECON) on the departmental web site.

Accelerated Option Requirements

While undergraduate students, accelerated master's students will be required to complete two master's courses to be applied to the undergraduate degree as upper level credit. These two courses must be selected from the following five courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 535</td>
<td>Survey of Applied Econometrics</td>
<td>6</td>
</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 612</td>
<td>Microeconomic Theory II</td>
<td></td>
</tr>
<tr>
<td>ECON 615</td>
<td>Macroeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 630</td>
<td>Mathematical Economics I</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework and earn a grade of B or better (3.00 or higher) in coursework applied to their major. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/ Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

While undergraduate students, accelerated master's students may take an additional two master's courses as reserve graduate credit. These two additional master's courses must be selected from the following five courses:

<table>
<thead>
<tr>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 535</td>
<td>Survey of Applied Econometrics</td>
<td>6</td>
</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 612</td>
<td>Microeconomic Theory II</td>
<td></td>
</tr>
<tr>
<td>ECON 615</td>
<td>Macroeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 630</td>
<td>Mathematical Economics I</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/ Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Economics, BS

Banner Code: LA-BS-ECON

D150 Buchanan Hall
Fairfax Campus
Website: economics.gmu.edu/programs/la-bs-econ

Economics is about more than money and profits. It is a way of looking at the world through the lens of incentives, choices, and markets to help uncover new solutions to the persistent problems in our society. This economic perspective sheds light on important issues in the areas of production, education, crime, the environment, international trade, immigration, health care, economic growth, poverty, and more. The bachelor of science in Economics provides a stronger emphasis on quantitative analysis. Students prepare for a career as an analyst in government, consulting, trade associations, or other private sector positions, and for graduate school in economics or more quantitative business administration programs.

Admissions & Policies

Policies

Students pursuing this degree must complete a minimum of 59 credits of required coursework with a minimum GPA of 2.00. Students completing a concentration will complete additional credits.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).
### Requirements

#### Degree Requirements

**Total credits: minimum 120**

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 351) tab.

Some economics courses may fulfill the Mason Core requirement in global understanding. Check with the departmental advising office for more information. Economics majors can fulfill the Mason Core synthesis requirement with ECON 309 Economic Problems and Public Policies (Mason Core) (p. 142).

#### Core Courses without Concentration

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 309</td>
<td>Economic Problems and Public Policies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 311</td>
<td>Intermediate Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 345</td>
<td>Introduction to Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
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</table>

**Total Credits** 26

**Statistics**

Select one from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>STAT 250 &amp; STAT 350</td>
<td>Introductory Statistics I (Mason Core) (p. 142) and Introductory Statistics II</td>
<td>6</td>
</tr>
<tr>
<td>STAT 344 &amp; STAT 354</td>
<td>Probability and Statistics for Engineers and Scientists I and Probability and Statistics for Engineers and Scientists II</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total Credits** 6

1 With departmental permission, BUS 210 Business Analytics I and BUS 310 Business Analytics II may also be substituted for the two required courses in statistics; however, a two-course sequence of STAT 250 Introductory Statistics I (Mason Core) (p. 142) and STAT 350 Introductory Statistics II OR STAT 344 Probability and Statistics for Engineers and Scientists I and STAT 354 Probability and Statistics for Engineers and Scientists II is highly recommended for students who wish to pursue graduate study in economics.

#### Additional Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 203</td>
<td>Survey of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 3

#### Electives without Concentration

**Electives**

Select 18 credits of electives from courses in economics at the 300 or 400 level (p. 1564) 1

Select 6 credits of electives from courses in economics at the 400 level. (p. 1564)

**Total Credits** 24

1 ECON 385 International Economic Policy may not be used to fulfill this requirement.

If ECON 340 Introduction to Mathematical Economics is chosen as an elective, students need not take the 4-credit course MATH 114 Analytic Geometry and Calculus II; however, MATH 114 Analytic Geometry and Calculus II is strongly recommended for students considering graduate school in economics since it is required for admission to most graduate programs. An additional calculus course beyond MATH 114 Analytic Geometry and Calculus II is also advisable for students considering graduate study in economics.

#### Optional Concentrations

Students interested in a degree in economics with a concentration will complete the coursework for one of the concentrations below.

**Available Concentrations**

- Concentration in Managerial Economics (MECN) (p. 352)
- Concentration in Philosophy, Politics, and Economics (PPE) (p. 353)

#### Concentration in Managerial Economics (MECN)

Students who wish to focus their BS in economics for application in the business world may choose to pursue a concentration in managerial economics. They complete 62 credits, 10 of which may be used also to fulfill Mason Core requirements.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 308</td>
<td>Managerial Economics and Strategy</td>
<td>3</td>
</tr>
<tr>
<td>ECON 309</td>
<td>Economic Problems and Public Policies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 310</td>
<td>Money and Banking</td>
<td>3</td>
</tr>
<tr>
<td>ECON 311</td>
<td>Intermediate Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 345</td>
<td>Introduction to Econometrics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 24
Statistics

Code Title Credits
Select one from the following: 1

STAT 250 & STAT 350 Introductory Statistics I (Mason Core) (p. 142) and Introductory Statistics II

STAT 344 & STAT 354 Probability and Statistics for Engineers and Scientists I and Probability and Statistics for Engineers and Scientists II

Total Credits 6

1 With departmental permission, BUS 210 Business Analytics I and BUS 310 Business Analytics II may also be substituted for the two required courses in statistics; however, a two-course sequence of STAT 250 Introductory Statistics I (Mason Core) (p. 142) and STAT 350 Introductory Statistics II OR STAT 344 Probability and Statistics for Engineers and Scientists I and STAT 354 Probability and Statistics for Engineers and Scientists II is highly recommended for students who wish to pursue graduate study in economics.

Required Courses in Math, Accounting, and Information Technology

Code Title Credits
ACCT 203 Survey of Accounting 3
MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142) 4
MATH 114 Analytic Geometry and Calculus II 1 4

Total Credits 11

1 ECON 340 Introduction to Mathematical Economics may not be substituted for MATH 114 Analytic Geometry and Calculus II for the concentration.

Two Required Courses in Business Writing

Code Title Credits
BUS 103 Develop Professional Skills I: Foundational Elements 3
BUS 303 Develop Professional Skills II: Advanced Elements 3

Total Credits 6

Electives in Economics 1

Select 9 credits from the following:

ECON 321 Economics of Labor
ECON 370 Economics of Industrial Organization
ECON 390 International Economics (Mason Core) (p. 142)
ECON 412 Game Theory and Economics of Institutions
ECON 415 Law and Economics
ECON 420 International Money and Finance
ECON 421 Financial Economics
ECON 496 Special Topics in Economics

Total Credits 9

Additional Electives in Economics

Code Title Credits
Select 6 credits of electives in economics from courses at the 300 and 400 level (p. 1564) 2

Total Credits 6

1 At least 6 credits of electives in economics must be at the 400 level.
2 ECON 385 International Economic Policy may not be used to fulfill this requirement.

Elective not in Economics

Code Title Credits
Select one elective from the following:
BULE 303 Legal Environment of Business 3
FNAN 303 Financial Management
MGMT 303 Principles of Management
MKTG 303 Principles of Marketing
MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142)
OM 303 Operations Management

Total Credits 3

Concentration in Philosophy, Politics, and Economics (PPE)

This is a high credit concentration for students interested in a program that explores the interdisciplinary connections between philosophy, political science, and economics.

Required Courses in Economics

Code Title Credits
ECON 103 Contemporary Microeconomic Principles (Mason Core) (p. 142) 3
ECON 104 Contemporary Macroeconomic Principles (Mason Core) (p. 142) 3
ECON 306 Intermediate Microeconomics 3
ECON 311 Intermediate Macroeconomics 3
ECON 345 Introduction to Econometrics 3
ECON 412 Game Theory and Economics of Institutions 3

Total Credits 18

Statistics

Code Title Credits
Select one from the following: 1

STAT 250 & STAT 350 Introductory Statistics I (Mason Core) (p. 142) and Introductory Statistics II

STAT 344 & STAT 354 Probability and Statistics for Engineers and Scientists I and Probability and Statistics for Engineers and Scientists II

Total Credits 6

1 At least 6 credits of electives in economics must be at the 400 level.
2 ECON 385 International Economic Policy may not be used to fulfill this requirement.
With departmental permission, BUS 210 Business Analytics I and BUS 310 Business Analytics II may also be substituted for the two required courses in statistics; however, a two-course sequence of STAT 250 Introductory Statistics I (Mason Core) (p. 142) and STAT 350 Introductory Statistics II OR STAT 344 Probability and Statistics for Engineers and Scientists I and STAT 354 Probability and Statistics for Engineers and Scientists II is highly recommended for students who wish to pursue graduate study in economics.

### Required Courses in Math and Information Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
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<td><strong>Total Credits</strong></td>
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### Electives

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 18 credits of electives in economics at the 300 and 400 level (p. 1564)</td>
<td>18</td>
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<tr>
<td></td>
<td><strong>Total Credits</strong></td>
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</tbody>
</table>

### Philosophy

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL/GOVT 324</td>
<td>Modern Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL/GOVT 327</td>
<td>Contemporary Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL 357</td>
<td>Philosophy of the Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL 371</td>
<td>Philosophy of Natural Sciences</td>
<td></td>
</tr>
<tr>
<td>PHIL 358</td>
<td>Ethics and Economics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 411</td>
<td>Theories of Decision</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
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</tbody>
</table>

### Public and International Affairs

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT/PHIL 323</td>
<td>Classical Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 422</td>
<td>Constitutional Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 467</td>
<td>Current Issues in Economic Policy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
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</tr>
</tbody>
</table>

### Capstone Experience Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 469</td>
<td>Philosophy, Politics, and Economics</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL/ECON 460</td>
<td>Senior Seminar in Philosophy, Politics, and Economics</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

### Writing-Intensive Requirement

The university requires all students to complete at least one course designated as "writing intensive" in their majors at the 300 level or above. Students majoring in economics fulfill this requirement by successfully completing:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 345</td>
<td>Introduction to Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 355</td>
<td>The Political Economy of Nonprofit Institutions</td>
<td></td>
</tr>
<tr>
<td>ECON 365</td>
<td>Topics in Economic History</td>
<td></td>
</tr>
<tr>
<td>ECON 435</td>
<td>Economics of Energy</td>
<td></td>
</tr>
<tr>
<td>ECON 470</td>
<td>Economics of Regulation</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

### Upper Level Requirements

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

### Additional Electives

Any remaining electives may be completed with elective courses to bring the degree total to 120.

### Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Written Communication (ENGH 101)</td>
<td>(p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>(p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td></td>
<td>3</td>
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<td>Information Technology and Computing (p. 143)</td>
<td></td>
<td>3</td>
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<tr>
<td>Exploration Requirements</td>
<td></td>
<td></td>
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<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
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<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### Integration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communications (ENGH 302)</td>
<td>(p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Writing-Intensive (p. 151)</td>
<td>(p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>
Honors in the Major

Students pursuing departmental honors must complete 6 hours of ECON 495 RS: Honors Thesis in Economics culminating with an original work of research and an oral presentation. Requirements for departmental honors are in addition to the coursework required for the major. Students must complete ECON 495 RS: Honors Thesis in Economics with a grade of B or higher to receive departmental honors.

Economics majors who have completed 90 credits with an overall GPA of 3.50 and a GPA of 3.50 within the major are eligible to apply. Not all applicants who meet the minimum requirements are guaranteed acceptance.

Applications will be available starting May 1st of each year. Applications are due by August 1st.

To be accepted into the program and enroll in ECON 495 RS: Honors Thesis in Economics students must submit a research proposal. Research proposals can be developed independently or by completing ECON 494 Introduction to Independent Research in Economics with a grade of B or higher. Completion of ECON 494 Introduction to Independent Research in Economics is not required for departmental honors.

Accelerated Master's

The accelerated master's programs listed below specify the BS in economics as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

Economics, BA or BS/Economics, Accelerated MA

Overview

Highly-qualified Mason economics majors may apply to the accelerated master's degree program. If accepted, students will be able to earn both a BA (p. 346) or BS (p. 351) and a M (p. 357)A (p. 357) in economics after satisfactory completion of 144 credits. Graduates are exceptionally well-prepared for professional school or a PhD program in economics or a related discipline.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in economics, see Application Requirements and Deadlines (http://economics.gmu.edu/programs/application/LA-MA-ACEL-ECON) on the departmental web site.

Accelerated Option Requirements

While undergraduate students, accelerated master's students will be required to complete two master's courses to be applied to the undergraduate degree as upper level credit. These two courses must be selected from the following five courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 535</td>
<td>Survey of Applied Econometrics</td>
<td></td>
</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 612</td>
<td>Microeconomic Theory II</td>
<td></td>
</tr>
<tr>
<td>ECON 615</td>
<td>Macroeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 630</td>
<td>Mathematical Economics I</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework and earn a grade of B or better (3.00 or higher) in coursework applied to their major. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/ Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

While undergraduate students, accelerated master's students may take an additional two master's courses as reserve graduate credit. These two additional master's courses must be selected from the following five courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 535</td>
<td>Survey of Applied Econometrics</td>
<td></td>
</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 612</td>
<td>Microeconomic Theory II</td>
<td></td>
</tr>
<tr>
<td>ECON 615</td>
<td>Macroeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 630</td>
<td>Mathematical Economics I</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/ Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only
to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**BS (selected)/Statistical Science, Accelerated MS**

**Overview**

Highly-qualified students in BS programs have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

No specific undergraduate BS degree is required. Students enrolled in any BS degree may apply to the accelerated Statistical Science, MS (p. 1141) program if such an accelerated Statistical Science, MS pathway is allowable from the student's BS program, which will be determined by the academic advisors of both the BS and MS programs; and if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists</td>
<td></td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 351</td>
<td>Probability</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

**Accelerated Option Requirements**

Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. (Credit may not be received for both STAT 474 and STAT 574; nor for both STAT 460 and STAT 560.) The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master's degree is conferred.

**Economics Minor**

Banner Code: ECON

Academic Advising

D150 Buchanan Hall
Fairfax Campus

Website: economics.gmu.edu/programs/la-minor-econ-econ

Economics is an essential tool for understanding the complexities of modern society. Economics analyzes how people with limited resources make choices and how we might make better choices. A minor in economics is an extremely flexible and marketable choice. Whether a student’s primary interest is in business, communications, policy, data management, international studies, or engineering, a minor in economics provides an additional edge in the workplace.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 21

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 356) tab.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

1 Must be completed with a minimum grade of C.

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select four electives from courses in economics at the 3xx or 4xx level</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12
Economics, MA
Banner Code: LA-MA-ECON

Academic Advising
D150 Buchanan Hall
Fairfax Campus
Email: econgrad@gmu.edu
Website: economics.gmu.edu/programs/la-ma-econ

The master of arts in economics is noted for its emphasis on comparative institutional analysis and its concentration on the relationships among economic, political, and legal institutions. The specific areas associated with the department include experimental economics, Austrian economics, public choice, constitutional political economy, law and economics, and new institutional economics. The program strengthens students’ knowledge of economic theory and improves their skills in applying the theory to economic problems. Graduates are qualified to read and judge other research and conduct their own, either individually or as members of government or business teams. They are also prepared to write policy analyses. Students who plan to pursue a PhD in economics should apply directly to the doctoral program.

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the MA in economics, see Application Requirements and Deadlines (http://economics.gmu.edu/programs/application/LA-MA-ECON) on the departmental website.

Policies
Students must earn a minimum GPA of 3.00 in coursework applied to the degree. No more than two courses with a grade of 2.00 may be applied toward the degree.

For policies governing all graduate degrees, see AP .6 Graduate Policies (p. 90)

Transfer Credits
Students may request to transfer a maximum of 12 credits for prior graduate course work (not applied to a previous graduate degree) subject to approval by the graduate director and dean in accordance with the Program Policies of the department and AP.6.5.3 Transfer of Credit (p. 92).

Reduction of Credit
This program does not permit a reduction of credit based on a previously conferred graduate degree.

Requirements

Degree Requirements
Total credits: 30

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 357) tab.

Core Courses
In place of core courses shown below, students admitted to the PhD in economics who have added the MA as a secondary degree to their record must substitute ECON 637 Econometrics I, ECON 811 Microeconomic Theory I, ECON 812 Microeconomic Theory II, ECON 715 Macroeconomic Theory I, and ECON 830 Mathematical Economics I or ECON 831 Mathematical Economics II.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 535</td>
<td>Survey of Applied Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 612</td>
<td>Microeconomic Theory II</td>
<td>3</td>
</tr>
<tr>
<td>ECON 615</td>
<td>Macroeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 630</td>
<td>Mathematical Economics I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 15 credits of ECON electives (p. 1564)</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

1 Students may substitute up to a maximum of 6 credits or two courses outside economics in closely related fields with prior written approval of the MA director.

Students have the option of writing a thesis for 6 credits in lieu of 6 credits of electives.

Students admitted to the PhD in economics who have added the MA as a secondary degree to their record must apply ECON 816 Macroeconomic Theory II as one of the five electives applied to the MA degree.

Comprehensive Exam
Students must pass one MA comprehensive exam in applied economic theory. This exam is offered twice each year. Students admitted to the PhD in economics who are seeking the MA as a secondary degree must pass both the PhD micro and the PhD macro qualifying exams, which will satisfy the requirement for the MA comprehensive exam.

Thesis (Optional)
Once enrolled in ECON 799 Master's Thesis, students are required to maintain continuous registration until the thesis is submitted to and
accepted by the University Libraries. The continuous registration policy is specified in AP.6.9.3 Master’s Thesis (p. 95).

Students who choose to complete a thesis take six fewer elective credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis Option</td>
<td>Master’s Thesis</td>
<td>6</td>
</tr>
<tr>
<td>ECON 799</td>
<td>Master’s Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total Credits** 6

Accelerated Master’s

**Economics, BA or BS/Economics, Accelerated MA**

**Overview**
Highly-qualified Mason economics majors may apply to the accelerated master’s degree program. If accepted, students will be able to earn both a BA (p. 346) or BS (p. 351) and a M (p. 357) in economics after satisfactory completion of 144 credits. Graduates are exceptionally well-prepared for professional school or a PhD program in economics or a related discipline.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in economics, see Application Requirements and Deadlines (http://economics.gmu.edu/programs/application/LA-MA-ACEL-ECON) on the departmental web site.

**Accelerated Option Requirements**
While undergraduate students, accelerated master’s students will be required to complete two master’s courses to be applied to the undergraduate degree as upper level credit. These two courses must be selected from the following five courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two from the following:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>ECON 535</td>
<td>Survey of Applied Econometrics</td>
<td></td>
</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 612</td>
<td>Microeconomic Theory II</td>
<td></td>
</tr>
<tr>
<td>ECON 615</td>
<td>Macroeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 630</td>
<td>Mathematical Economics I</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits** 6

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**
While undergraduate students, accelerated master’s students may take an additional two master’s courses as reserve graduate credit. These two additional master’s courses must be selected from the following five courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two from the following:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>ECON 535</td>
<td>Survey of Applied Econometrics</td>
<td></td>
</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 612</td>
<td>Microeconomic Theory II</td>
<td></td>
</tr>
<tr>
<td>ECON 615</td>
<td>Macroeconomic Theory</td>
<td></td>
</tr>
<tr>
<td>ECON 630</td>
<td>Mathematical Economics I</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits** 6

These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Economics, PhD**

**Banner Code:** LA-PHD-ECON

**Academic Advising**
D150 Buchanan Hall
Fairfax Campus

Email: econgrad@gmu.edu
Website: economics.gmu.edu/programs/la-phd-econ

The economics PhD prepares students for careers in academia, business, and government. Core courses train students in modern theory and quantitative techniques, while field courses stress the application of theory to relevant economic problems. Dissertation work requires students to master and apply the skills of original research. With an emphasis on writing for publication, many students have had articles accepted and published in professional journals while in the graduate program. Research in the department covers a broad spectrum, from problems of immediate policy importance to fundamental questions of economic and social organization.

**Admissions & Policies**

**Admissions**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information
specific to the PhD in economics, see Application Requirements and Deadlines (http://economics.gmu.edu/programs/application/LA-PHD-ECON) on the departmental web site.

Policies
Students must earn a minimum GPA of 3.00 in coursework applied to the degree. No more than two courses with a grade of 2.00 may be applied toward the degree.

For policies governing all graduate degrees, see AP .6 Graduate Policies (p. 90).

Reduction of Credit
Students who enter with a master’s degree may have their credit requirement reduced by up to 30 credits, depending on the department’s judgment about the degree of closeness of that work to work that would have been taken at George Mason University. Reduction also requires approval of the dean. Requests for reduction of credit are reviewed only after acceptance to the doctoral program.

Program of Study
All students must have an approved program of study as specified in AP.6.10 Requirements for Doctoral Degrees (p. 96).

Requirements

Degree Requirements
Total credits: 72

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 358) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 637</td>
<td>Econometrics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 715</td>
<td>Macroeconomic Theory I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 811</td>
<td>Microeconomic Theory I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 812</td>
<td>Microeconomic Theory II</td>
<td>3</td>
</tr>
<tr>
<td>ECON 816</td>
<td>Macroeconomic Theory II</td>
<td>3</td>
</tr>
<tr>
<td>ECON 830</td>
<td>Mathematical Economics I</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 831</td>
<td>Mathematical Economics II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

Electives

Select 30-42 credits of electives from economics courses in any of the fields offered by the department.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>30-42</td>
</tr>
</tbody>
</table>

Total Credits 30-42

Field Exams
Students must successfully pass field exams in two knowledge areas. Subject to course availability, the department offers courses in the following fields of study on which the knowledge area field exams will be based. Because the specific courses offered each year vary, students should consult the department for the courses that can be used for each field.

- Austrian economics
- Constitutional political economy
- Economic history
- Economic sociology
- Experimental economics
- Industrial organization
- Individualized field exam
- Institutions and development
- Law and economics
- Monetary theory
- Public choice
- Smithian political economy

Advancement to Candidacy
To advance to candidacy, students must complete all course work required on their approved program of study and all exams. In addition, students must have a dissertation committee appointed by the dean as well as an approved proposal. Evidence of the approved proposal must be on file in the Dean's Office before a student can advance to candidacy.

Dissertation
Once enrolled in 998, students in the economics doctoral program must maintain continuous registration in 998 or 999 each semester (excluding summers) until the dissertation is submitted to and accepted by the University Libraries. Once enrolled in 999, students must follow the university’s continuous registration policy as specified in AP.6.10.6 Dissertation Registration (p. 98). Students who defend in the summer must be registered for at least 1 credit of 999.

Students must complete a minimum of 3 credits of 999. They may apply a minimum of 12 and a maximum of 24 dissertation credits (998 and 999 combined) to the degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 998</td>
<td>Doctoral Dissertation Proposal Research.</td>
<td></td>
</tr>
<tr>
<td>ECON 999</td>
<td>Doctoral Dissertation Research (minimum of 3 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12-24

Department of English
B413 Robinson Hall
Fairfax Campus
Phone: 703-993-1160
Website: english.gmu.edu

1 Students may substitute up to a maximum of 6 credits of courses outside economics in closely related fields with prior written approval of the director of the graduate program. ECON 695 Special Topics in Economics cannot be applied toward PhD requirements.
Undergraduate Programs

The department offers a bachelor's of arts degree in English and a bachelor of fine arts degree in creative writing.

English, BA

The bachelor's of arts degree in English is a versatile major with seven concentrations designed to meet students' individual interests and career objectives. English majors can also do an internship in technical writing or linguistics. Students interested in becoming teachers can participate in a program offered in conjunction with the College of Education and Human Development (p. 161) that allows undergraduates to simultaneously complete their BA in English and their licensure requirements to teach English at the secondary school level in Virginia.

English majors learn to read critically and write carefully in classes that are uniquely small for a university the size of Mason. Students develop these abilities not only through reading traditional texts but also through the use of technologies such as blogs, wikis, and multimedia production. Because English majors have excellent skills in written and oral communication, research, critical thinking, and focused creativity they are well prepared for any career - teaching, journalism, creative writing, management, law, and more.

Creative Writing, BFA

The bachelor of fine arts degree in creative writing encourages freedom of thought, speech, and inquiry. Through its innovative courses, the program enables students to exercise analytical and imaginative thinking. Through its combined classroom and work-world curriculum, it prepares students to make well-founded ethical decisions. The degree offers three concentrations allowing for the opportunity to learn the conventions of several genres.

300-level courses in English and linguistics teach the foundational principles for a field of study, include courses of broad scope, and provide an introduction to a genre, literary period, or methodology.

400-level courses in English and linguistics provide an in-depth approach to a field of study, a single genre, literary period, or methodology. They include special topics classes and English honors classes. Some 400-level courses require ENGH 305 Dimensions of Writing and Literature as a prerequisite.

English with a Second Major

Students can combine a major in English with a second major. Students interested in this option are encouraged to discuss their plans with their English advisor. See section AP 5.3.7 Credit for More Than One Undergraduate Major in Undergraduate Policies (p. 90).

Minors

The department offers a minor in English, which is available to students in any major at Mason.

Faculty from English coordinate or co-coordinate the minors: Film and Media Studies, Folklore and Mythology, Linguistics, Native American and Indigenous Studies, Professional and Technical Writing, and Teaching English as a Second Language.

Bachelor's/Accelerated Master's Program

The department offers highly qualified undergraduates in any major the opportunity to apply to an accelerated master's of arts degree program in English with a concentration in linguistics (https://catalog.gmu.edu/colleges-schools/humanities-social-sciences/english/english-ma/ #acceleratedmasterstext). If accepted, students will be able to earn an undergraduate degree in their chosen major and a graduate degree in English with a concentration in linguistics after satisfactory completion of 144 credits, generally within five years.

Undergraduates in Graduate Courses

The English Department permits qualified undergraduates to enroll in its graduate courses numbered 500 through 699. They may apply these credits to their undergraduate degree or mark them for reserve graduate credit. See the department for details on how to register.

Graduate Programs

The department offers graduate programs in the study and practice of literature, writing, rhetoric, and linguistics, as well as course work in related fields such as folklore, film, and cultural studies. The master's of arts degree in English provides concentrations in literature, cultural studies, professional writing and rhetoric, the teaching of writing and literature, and linguistics. The department also has a terminal degree, the master of fine arts in creative writing, with concentrations in fiction, poetry, and nonfiction. Also offered are doctoral programs in linguistics and writing and rhetoric.

The department offers graduate certificates in folklore studies, professional writing and editing with a concentration in professional and technical writing, college teaching with a concentration in English pedagogy, and teaching English as a second language. Students may take these as stand-alone certificates or pursue them concurrently with a graduate degree program. In many cases part of the course work for a certificate may also count toward a degree. Students must apply and be admitted to a graduate certificate program.

Faculty from the department coordinate the concentration in folklore studies in the master's degree in interdisciplinary studies (MAIS) (p. 543).

Funding

The department offers teaching assistantships and fellowships awarded on a competitive basis. Other sources of funding such as grants, loans, and employment on campus are also available. Students awarded assistantships must show satisfactory progress toward their degree.

Writing Center

The Writing Center (http://writingcenter.gmu.edu) offers one-on-one conferencing during all stages of the writing process. Writing Center tutors, who are graduate teaching assistants in the English Department, have been trained in current methods of composition instruction. They help clients overcome writing anxiety, develop organizational and revision skills, and learn useful strategies for editing their own work. To learn more about the Writing Center services or to schedule an appointment, students should consult the Writing Center website (http://writingcenter.gmu.edu).

Northern Virginia Writing Project

The Northern Virginia Writing Project (NVWP) (http://nvwtp.org) is a professional development organization dedicated to improving writing instruction, writing practice, and learning at all educational levels, and to developing teacher leaders across the disciplines.

Each summer, selected teachers attend an intensive four-week institute where they demonstrate successful teaching methods, develop their own writing lives, and study the latest research and theory on the learning and teaching of writing. After the summer institute, participants receive
the designation of Teacher Consultant and join over 900 other teachers in carrying out the work of the NVWP. The NVWP is an affiliate of the National Writing Project and one of the six sites of the Virginia Writing Project.

**Faculty**

**Department Faculty**

**Professors**
Albanese, Ardis, Clark, Foster, Goodwin, Habila, Kaufmann, Keith, Matz, Pankey, Tichy

**Associate Professors**
Amireh, Anderson, Atkinson, Brkic, Burr, Eisner, Eyman, Fuchs, Gallehr, Harvey, Hoefer, James, Lattanzi Shuitka (chair), Lockwood, Malouf, Michals, Reid, Rogers, Samuelian, Scarlata, Streckfus, Weinberger, Wheelock, Wulf, Yadav

**Assistant Professors**
Burek, Chakravarty, Denevi, Dorpenyo, El-Hibri, Gatling, Gilman, Holmes, Kwon, LaFrance, Lawrence, Monea, Schreiner, Wooten

**Term Professors**
Koch, Matthews, Scott, Taciuch, Thompson

**Term Associate Professors**
Berg, King, Lister, Matthews, Nanian, Saunders, Taylor

**Term Assistant Professors**

**Term Instructors**
Baker, Fernandez, Hoy, Killiany, Pettibon, Ready

**Adjunct Assistant Professors**
Broyles, Cabral, Carbo, Casal, DeFazio, Dutta, Fowler, Jacobs, Johnston, Laptad, Kuhta, Orlando, Pabich, Patrick, Sorvillo

**Adjunct Instructors**
Holcomb

**Programs**

- College Teaching Graduate Certificate (ENGL)
- Creative Writing, BFA
- Creative Writing, MFA
- Digital Media and Web Design Minor (CHSS)
- English Minor
- English, BA
- English, MA
- Film and Media Studies Minor
- Folklore Studies Graduate Certificate
- Folklore and Mythology Minor
- Linguistics Minor
- Linguistics, PhD
- Native American and Indigenous Studies Minor
- Professional Writing and Editing Graduate Certificate (ENGL)
- Professional and Technical Writing Minor
- Teaching English as a Second Language Graduate Certificate
- Teaching English as a Second Language Minor
- Writing and Rhetoric, PhD

**College Teaching Graduate Certificate (ENGL)**

**Banner Code:** LA-CERG-CTCH

**Academic Advising**
B413 Robinson Hall
Fairfax Campus

The certificate in College Teaching is designed for graduate students who are planning a career in undergraduate education. The program offers courses that enhance pedagogical skills and explore pedagogical assessment or scholarship with the use of technology in instruction.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/College_Teaching/Gedt.html).

**Admissions & Policies**

**Admissions**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

**Policies**
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

**Concentration in English Pedagogy**
This concentration in the graduate certificate in college teaching requires 18 credits. Students must achieve a minimum grade of 3.00 in each course.

**Concentration in Higher Education Pedagogy**
This concentration in the graduate certificate in college teaching requires 18 credits.

**Requirements**

**Certificate Requirements**

Total credits: 18

This certificate may be pursued on a full-or part-time basis.
Students should be aware of the specific policies associated with this program, located on the Admissions & Policies tab.

Students pursuing this graduate certificate must choose either a concentration in English pedagogy or a concentration in higher education pedagogy.

**Concentration in English Pedagogy (EPGY)**

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 610</td>
<td>Proseminar in Teaching the Reading of Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 615</td>
<td>Proseminar in Composition Instruction</td>
<td>3</td>
</tr>
</tbody>
</table>

**Pedagogy Courses**

Select two courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 620</td>
<td>Topics in Pedagogy</td>
<td></td>
</tr>
<tr>
<td>ENGH 695</td>
<td>Northern Virginia Writing Project Inservice Program</td>
<td></td>
</tr>
<tr>
<td>ENGH 697</td>
<td>Composition Theory</td>
<td></td>
</tr>
<tr>
<td>ENGH 699</td>
<td>Workshop in English</td>
<td></td>
</tr>
<tr>
<td>LING 521</td>
<td>Applied Linguistics: Teaching English as a Second Language</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Credits** 12

1. Offered only to full-time teachers through school district contracts.
2. Topic must be NVWP Summer Institute; open to full-time teachers on an invitation basis.

**Electives**

Select content-area coursework that supports their goals in developing pedagogical expertise. 6

**Total Credits** 6

1. Electives should be selected in consultation with an advisor.

**Concentration in Higher Education Pedagogy (HEDP)**

**Core Courses**

Students may substitute courses with a disciplinary focus for any of the three required courses with prior written approval of the director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 605</td>
<td>Learning Assessment</td>
<td>3</td>
</tr>
<tr>
<td>HE 703</td>
<td>Higher Education in the Digital Age</td>
<td>3</td>
</tr>
<tr>
<td>HE 704</td>
<td>The Scholarship of Teaching and Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

**Practicum**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 685</td>
<td>Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 12

**Electives**

Electives must be chosen in consultation with the HEP Director and are selected from any HE course. (p. 1813)

**Creative Writing, BFA**

Banner Code: LA-BFA-CW

The Bachelor of Fine Arts in Creative Writing is one of only thirty BFAs in creative writing available nationwide. With three concentrations to choose from (fiction, poetry, nonfiction) the BFA is structured to give students ample opportunity to learn to write and think creatively while also developing the vocational writing skills that are desperately needed in the workplace. All students pursuing a BFA are strongly advised to complete on-site workplace internships in writing-intensive environments, and finish the degree with a submission of a portfolio of work as part of a final-semester capstone course, with final approval from the faculty.

**Admissions & Policies**

**Admissions**

Acceptance into the program is competitive. Admission to the university does not guarantee admission to the BFA program.

After acceptance to Mason, students who wish to pursue a major in creative writing should inform the academic coordinator in the English department or the director of the creative writing program of their interest in the program and seek evaluation of any prior coursework as well as guidance on courses to take and the sequence in which to take them. In the program, students enroll in a series of courses intended to introduce them to all forms of creative writing, and then they select a core set of courses built around a specialization in fiction, nonfiction or poetry, along with upper-level writing, literature and advanced studies courses.

Students planning to enter the BFA program are initially designated as "pre-BFA" until they have successfully completed the requirements for full admission. Full admission requires a minimum of three creative writing courses successfully completed with a grade point average (GPA) of 3.00 or higher in those courses. Alternatively, students who have taken creative writing courses at another institution or in their early undergraduate coursework at Mason may gain full admission status to the BFA program on the strength of recommendations from the instructors in those courses, subject to departmental approval, which is obtained from the Mason creative writing faculty and the director of the creative writing program.

A student admitted to the university and intending to enter the BFA program may designate a major in English and complete English major courses before attempting to move into admitted BFA status. Meeting minimum requirements does not guarantee admission to full BFA status.

**Policies**

For policies governing all undergraduate degrees, see AP 5 Undergraduate Policies (p. 87).

Students pursuing this degree must complete 45 credits (15 courses) in English/Linguistics beyond ENGH 300 Cover to Cover (not including ENGH 302 Advanced Composition (Mason Core) (p. 142)) with a minimum GPA of 2.00.

At the discretion of the department, transfer students may substitute transferred lower level creative writing classes for some BFA requirements. With permission of the department, BFA students may
select a substitute for concentration required coursework from the list of courses approved for the writing or literature elective requirement. Substitutions must be justified as specifically relevant to the student’s study. Substitutions will not satisfy more than one requirement within the major.

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 362) tab.

Students will complete 21 credits of BFA core requirements, 12 credits from one of 3 concentrations, and 12 credits in English department requirements. 300-level courses in English and linguistics teach the foundational principles for a field of study, include courses of broad scope, and provide an introduction to a genre, literary period, or methodology. 400-level courses in English and linguistics provide an in-depth approach to a field of study, a single genre, literary period, or methodology. They include special topics classes and English honors classes. Some 400-level courses require ENGH 305 Dimensions of Writing and Literature as a prerequisite.

Students should consult with an English department advisor to learn ways in which the Mason Core (p. 142) requirements can also satisfy college-level requirements or the BFA.

**Core Courses in the Major**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 301</td>
<td>The Fields of English</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 305</td>
<td>Dimensions of Writing and Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 377</td>
<td>Digital Creative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 396</td>
<td>Introduction to Creative Writing (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 495</td>
<td>Capstone and Thesis (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

**English Department Requirements**

**Literature before 1800**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 320</td>
<td>Literature of the Middle Ages</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 321</td>
<td>English Poetry and Prose of the 16th Century</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 322</td>
<td>Shakespeare</td>
<td></td>
</tr>
<tr>
<td>ENGH 323</td>
<td>Shakespeare: Special Topics</td>
<td></td>
</tr>
<tr>
<td>ENGH 324</td>
<td>English Renaissance Drama</td>
<td></td>
</tr>
<tr>
<td>ENGH 325</td>
<td>English Poetry and Prose of the 17th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 330</td>
<td>Augustan Age: 1660-1745</td>
<td></td>
</tr>
<tr>
<td>ENGH 331</td>
<td>Age of Sensibility: 1745-1800</td>
<td></td>
</tr>
<tr>
<td>ENGH 332</td>
<td>Restoration and 18th Century Drama</td>
<td></td>
</tr>
<tr>
<td>ENGH 333</td>
<td>British Novel of the 18th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 340</td>
<td>Early American Literature</td>
<td></td>
</tr>
</tbody>
</table>

**Literature before 1915**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 334</td>
<td>British Poetry of the Romantic Period</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 335</td>
<td>Prose and Poetry of the Victorian Period</td>
<td></td>
</tr>
<tr>
<td>ENGH 336</td>
<td>British Novel of the 19th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 341</td>
<td>Literature of the American Renaissance</td>
<td></td>
</tr>
<tr>
<td>ENGH 343</td>
<td>Development of the American Novel to 1914</td>
<td></td>
</tr>
<tr>
<td>ENGH 348</td>
<td>Beginnings of African American Literature Through 1865</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 349</td>
<td>African American Literature: Reconstruction to 1903</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 360</td>
<td>Continental Fiction, 1770-1880</td>
<td></td>
</tr>
<tr>
<td>ENGH 361</td>
<td>Continental Fiction, 1880-1950</td>
<td></td>
</tr>
</tbody>
</table>

A second course from literature before 1800 list above

Total Credits: 3

**Minority, Folkloric, or Popular Literary and Cultural Traditions**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 310</td>
<td>Topics: Women and Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 315</td>
<td>Folkslore and Folklife</td>
<td></td>
</tr>
<tr>
<td>ENGH 319</td>
<td>Popular Culture</td>
<td></td>
</tr>
<tr>
<td>ENGH 348</td>
<td>Beginnings of African American Literature Through 1865</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 349</td>
<td>African American Literature: Reconstruction to 1903</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 350</td>
<td>African American Literature Through 1946</td>
<td></td>
</tr>
<tr>
<td>ENGH 351</td>
<td>Contemporary African American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 352</td>
<td>Topics in Ethnic American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 366</td>
<td>The Idea of a World Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 367</td>
<td>World Literatures in English</td>
<td></td>
</tr>
<tr>
<td>ENGH 412</td>
<td>Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 414</td>
<td>Folklore and the Supernatural</td>
<td></td>
</tr>
<tr>
<td>ENGH 415</td>
<td>Folk Arts and Folk Artists</td>
<td></td>
</tr>
<tr>
<td>ENGH 416</td>
<td>Ethnicity and Migration in Folklore</td>
<td></td>
</tr>
<tr>
<td>ENGH 417</td>
<td>RS: Topics in Folklore Research (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 419</td>
<td>Topics in Popular Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 451</td>
<td>Science Fiction</td>
<td></td>
</tr>
<tr>
<td>ENGH 452</td>
<td>Critical Study of Children’s Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 484</td>
<td>RS: Writing Ethnography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 388</td>
<td>Professional and Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 402</td>
<td>Honors Independent Study</td>
<td></td>
</tr>
<tr>
<td>ENGH 459</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>ENGH 484</td>
<td>RS: Writing Ethnography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 492</td>
<td>Advanced Fiction Writing Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGH 493</td>
<td>Advanced Workshop in Nonfiction</td>
<td></td>
</tr>
<tr>
<td>ENGH 494</td>
<td>Advanced Poetry Writing Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGH 497</td>
<td>Topics in Creative Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 499</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>ENGH 505</td>
<td>Document Design</td>
<td></td>
</tr>
</tbody>
</table>

**Select one course from the following:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 387</td>
<td>Poetry Writing</td>
<td>6</td>
</tr>
<tr>
<td>ENGH 388</td>
<td>Fiction Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 399</td>
<td>Creative Nonfiction Writing</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 6

**Concentrations in the Major**

Students must complete one of the following concentrations.

**Available Concentrations**

- Concentration in Fiction (FIC) (p. 364)
- Concentration in Nonfiction (NFIC) (p. 364)
- Concentration in Poetry (POE) (p. 364)

**Concentration in Fiction (FIC)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 398</td>
<td>Fiction Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 399</td>
<td>Forms of Fiction</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 355</td>
<td>Recent American Fiction</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 492</td>
<td>Advanced Fiction Writing Workshop</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 12

**Concentration in Nonfiction (NFIC)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 399</td>
<td>Creative Nonfiction Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 393</td>
<td>Forms of Nonfiction</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 456</td>
<td>Topics in Literary Nonfiction</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 493</td>
<td>Advanced Workshop in Nonfiction</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 12

**Concentration in Poetry (POE)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 397</td>
<td>Poetry Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 391</td>
<td>Forms of Poetry</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 356</td>
<td>Recent American Poetry</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 494</td>
<td>Advanced Poetry Writing Workshop</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 12

**Writing-Intensive Requirement**

The university requires all students to complete at least one course designated “writing intensive” in their majors at the 300 level or above. Students majoring in creative writing may fulfill this requirement by successfully completing ENGH 305 Dimensions of Writing and Literature.

**Upper Level Requirement**

Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

**Additional Electives**

Any remaining credits may be completed with elective courses to bring the degree total to 120.

**College Level Requirements for the BA Degree**

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly
prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

**Philosophy or Religious Studies**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL</td>
<td>(p. 2044)</td>
<td>3</td>
</tr>
<tr>
<td>RELI</td>
<td>(p. 2144)</td>
<td></td>
</tr>
</tbody>
</table>

1 Note that the following courses may not be used to fulfill this requirement:
- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

**Social and Behavioral Sciences**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td>(p. 1212)</td>
<td></td>
</tr>
<tr>
<td>CRIM</td>
<td>(p. 1514)</td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td>(p. 1774)</td>
<td></td>
</tr>
<tr>
<td>HIST</td>
<td>(p. 1818)</td>
<td>2</td>
</tr>
<tr>
<td>LING</td>
<td>(p. 1896)</td>
<td></td>
</tr>
<tr>
<td>PSYC</td>
<td>(p. 2074)</td>
<td></td>
</tr>
<tr>
<td>SOCI</td>
<td>(p. 2167)</td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:
- GGS 101 Major World Regions (Mason Core) (p. 142)
- GGS 103 Human Geography (Mason Core) (p. 142)
- GGS 110 Introduction to Geoinformation Technologies
- GGS 301 Political Geography
- GGS 303 Geography of Resource Conservation (Mason Core) (p. 142)
- GGS 304 Population Geography (Mason Core) (p. 142)
- GGS 305 Economic Geography
- GGS 306 Urban Geography
- GGS 315 Geography of the United States
- GGS 316 Geography of Latin America
- GGS 320 Geography of Europe
- GGS 325 Geography of North Africa and the Middle East
- GGS 330 Geography of the Soviet Succession States

The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

2 HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

**Foreign Language**

<table>
<thead>
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<th>Code</th>
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<tr>
<td>ANTH</td>
<td>114 Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH</td>
<td>300 Civilizations</td>
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<tr>
<td>ANTH</td>
<td>302 Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>307 Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH</td>
<td>308 Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH</td>
<td>309 Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH</td>
<td>313 Myth, Magic, and Mind (Mason Core) (p. 142)</td>
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<td>ANTH</td>
<td>314 Zombies</td>
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<tr>
<td>ANTH</td>
<td>330 Peoples and Cultures of Selected Regions: Non-Western</td>
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<td>ANTH</td>
<td>332 Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH</td>
<td>381 Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>396 Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARAB</td>
<td>360 Topics in Arabic Cultural Production</td>
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</tr>
</tbody>
</table>

Intermediate-level proficiency in one foreign language, fulfilled by:

1 Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)

Or achieving a satisfactory score on an approved proficiency test

Or completing the following ASL three course sequence:
- EDSE 115 American Sign Language (ASL) I
- EDSE 116 American Sign Language (ASL) II
- EDSE 219 American Sign Language (ASL) III

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Non-Western Culture**

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
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<tr>
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<td>3</td>
</tr>
<tr>
<td>ANTH</td>
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<td>ANTH</td>
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<td>3</td>
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<td>ANTH</td>
<td>307 Ancient Mesoamerica (Mason Core) (p. 142)</td>
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<td>313 Myth, Magic, and Mind (Mason Core) (p. 142)</td>
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<td>ANTH</td>
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<td>330 Peoples and Cultures of Selected Regions: Non-Western</td>
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<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
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<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
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<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core)</td>
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<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core)</td>
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<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<td>Art of the Islamic World (Mason Core)</td>
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<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core)</td>
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<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
<td>3</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core)</td>
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<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>Major Chinese Writers (Mason Core)</td>
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<td>World Dance (Mason Core) (p. 142)</td>
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<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>ECON 362</td>
<td>African Economic Development (Mason Core)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>Geography of North Africa and the Middle East</td>
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<td>Government and Politics of the Middle East and North Africa</td>
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<td>Government and Politics of Asia</td>
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<td>Government and Politics of Russia</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
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<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
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<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core)</td>
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<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>Rise of Russia (Mason Core) (p. 142)</td>
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<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
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<td>HIST 366</td>
<td>Comparative Slavery</td>
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<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
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<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
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<td>HIST 426</td>
<td>The Russian Revolution</td>
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<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
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<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
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<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core)</td>
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<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
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<td>Japanese Culture in a Global World (Mason Core)</td>
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<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
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<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
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<td>Musics of the World (Mason Core)</td>
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<td>RELI 211</td>
<td>Religions of the West (Mason Core)</td>
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<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
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<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
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<td>RELI 272</td>
<td>Islam</td>
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<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
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<td>Chinese Philosophies and Religious Traditions</td>
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<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
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RELI 337  Mysticism: East and West  3
RELI 365  Muhammad: Life and Legacy  3
RELI 374  Islamic Thought (Mason Core) (p. 142)  3
RELI 375  Qur’an and Hadith  3
RELI 379  Islamic Law, Society, and Ethics  3
RELI 387  Islam, Democracy, and Human Rights  3
RELI 490  Comparative Study of Religions (Mason Core) (p. 142)  3
RUSS 353  Russian Civilization (Mason Core) (p. 142)  3
RUSS 354  Contemporary Post-Soviet Life (Mason Core) (p. 142)  3

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Mason Core
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
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<td></td>
<td><strong>Foundation Requirements</strong></td>
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<td>Written Communication (ENGH 101) (p. 142)</td>
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<td>Oral Communication (p. 142)</td>
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<td></td>
<td>Quantitative Reasoning (p. 143)</td>
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<td>Information Technology and Computing (p. 143)</td>
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<td><strong>Exploration Requirements</strong></td>
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<td></td>
<td>Arts (p. 144)</td>
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<td></td>
<td>Global Understanding (p. 146)</td>
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<td>Literature (p. 147)</td>
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<td>Natural Science (p. 148)</td>
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<td>Social and Behavioral Sciences (p. 150)</td>
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<td></td>
<td>Western Civilization/World History (p. 151)</td>
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<td><strong>Integration Requirements</strong></td>
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<td>Written Communications (ENGH 302) (p. 142)</td>
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<td>Writing-Intensive (p. 151)</td>
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<td></td>
<td>Synthesis/Capstone (p. 153)</td>
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<td><strong>Total Credits</strong></td>
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</table>

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

Honors

Honors in the Major
Highly qualified students in the BFA in Creative Writing (p. 362) program may pursue advanced work leading to graduation with honors in the major. To graduate with honors in the major, students must complete a two-course honors sequence and receive a minimum GPA of 3.50 in all courses counted toward the major and, separately, a minimum GPA of 3.50 in their honors courses. Honors courses may simultaneously satisfy concentration and distribution requirements in the major.

Students may satisfy the honors course sequence in one of the following ways:

- BFA students may take two sections of ENGH 400 Honors Seminar
- BFA students may take one section of ENGH 400 Honors Seminar and ENGH 401 RS: Honors Thesis Writing Seminar (Mason Core) (p. 142)

BFA students may write a creative honors thesis in ENGH 401 RS: Honors Thesis Writing Seminar (Mason Core) (p. 142). BFA students may substitute ENGH 495 Capstone and Thesis (Mason Core) (p. 142) for ENGH 401.

Students interested in pursuing honors in the major should consult the English Department (p. 359) for more information.

Accelerated Master’s

English, BA or Creative Writing, BFA/Curriculum and Instruction, Accelerated MEd (Secondary Education English concentration)

Overview
Highly-qualified Mason undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BA in English (p. 370) or a BFA in Creative Writing (p. 362) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education English) in an accelerated time-frame after satisfactory completion of 149 credits. See AP6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of English (p. 359) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).
Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Students complete the following courses in their senior year:

<table>
<thead>
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<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
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<td>EDCI 569</td>
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<td>EDCI 669</td>
<td>3</td>
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<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
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<tr>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
<td></td>
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</tbody>
</table>

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Creative Writing, MFA
Banner Code: LA-MFA-CW

Academic Advising
B413 Robinson Hall
Fairfax Campus

Email: englgrad@gmu.edu
Website: creativewriting.gmu.edu/programs/la-mfa-cw

The MFA in creative writing is a three-year residency program offering tracks in fiction, nonfiction, and poetry. Students in the program are members of a literary community that includes a student-organized program of readings, potluck dinners with faculty, three journals, a student-run publisher—Stillhouse Press—and the annual Fall for the Book literary festival. Resident faculty members include recipients of prestigious writing awards such as the Guggenheim Foundation, the Yale Series of Younger Poets, the Lannan Foundation, the Whiting Foundation and the National Endowment for the Arts, among others.

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the MFA in creative writing, see Application Requirements and Deadlines (http://english.gmu.edu/programs/application/LA-MFA-CW) on the departmental website.

Policies
For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Reduction of Credit
With the approval of the MFA faculty, the program director, and the dean, the number of credits required for an MFA may be reduced by a maximum of 23 credits on the basis of graduate course work before admission.

Requirements

Degree Requirements
Total credits: 48

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 368) tab.

Core Courses

<table>
<thead>
<tr>
<th>Literature</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>Select two to four courses in consultation with an advisor ^1</td>
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<td></td>
<td>6-12</td>
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<tr>
<td>Craft Seminars</td>
<td>ENGH 608</td>
<td>Craft Seminars ^2</td>
<td>6-12</td>
</tr>
<tr>
<td>Workshop</td>
<td>ENGH 699</td>
<td>Workshop in English</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits = 13-25

^1 ENGH 798 Directed Reading and Research may not be used to fulfill this requirement.

^2 This course may be repeated for credit.

Concentration in Fiction (FIC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 566</td>
<td>Forms of Fiction</td>
<td>3</td>
</tr>
<tr>
<td>Writing Workshops</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>ENGH 618</td>
<td>Fiction Writing Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGH 751</td>
<td>Advanced Workshop in Fiction Writing</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits = 12

Concentration in Nonfiction Writing (NFW)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 506</td>
<td>Research for Narrative Writing ^1</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 565</td>
<td>Forms of Nonfiction</td>
<td>3</td>
</tr>
<tr>
<td>Writing Workshops</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>ENGH 616</td>
<td>Nonfiction Writing Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGH 752</td>
<td>Advanced Workshop in Nonfiction Writing</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits = 15

^1 Students should enroll the first semester it is offered after they enter the program.
Concentration in Poetry (POE)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 564</td>
<td>Form of Poetry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing Workshops</td>
<td></td>
</tr>
<tr>
<td>ENGH 617</td>
<td>Poetry Writing Workshop</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 750</td>
<td>Advanced Workshop in Poetry Writing</td>
<td></td>
</tr>
<tr>
<td>Select at least one course in another genre (fiction or nonfiction)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

1 This requirement may be filled by a section of ENGH 608 Craft Seminars in another genre.

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select up to 15 credits from electives in consultation with the writing program faculty</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits 15

1 The number of electives will vary according to the number of literature courses and workshops that students take.

Exam or Project

Poetry Concentration

Students in poetry must pass a written MFA exam based on the authors they have chosen. The authors are selected in collaboration with the writing faculty any time after completing 12 credits of course work and before completing 32 credits. The exam must be completed at least one semester before the student registers for the final 3 credits of thesis.

Fiction and Nonfiction Concentration

Students in fiction and nonfiction writing must pass an MFA exam or complete an MFA project.

Students who elect to take the MFA exam select, after the completion of 18 credits and with the approval of their faculty advisors, a list of authors and an area of emphasis (for example, the European novel). Students who elect to complete an MFA project (such as editing an anthology) must carry out the project under the direction of a faculty member and may register for ENGH 798 Directed Reading and Research to fulfill this requirement. The project must be completed at least one semester before the student registers for the final 3 credits of thesis.

Digital Media and Web Design Minor (CHSS)

Banner Code: DMWD

Academic Advising

B413 Robinson Hall
Fairfax Campus

Email: english@gmu.edu
Website: english.gmu.edu/programs/

This minor provides students with opportunities to learn and apply advanced strategies for website design, content development, and user interaction and accessibility in website creation. Students interested in pursuing a career in digital media and web content design and management will develop a portfolio that demonstrates their skills, competencies and products produced throughout the minor.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 322) tab.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 798</td>
<td>Directed Reading and Research</td>
<td>1-6</td>
</tr>
</tbody>
</table>

Total Credits 1-6

Thesis

ENGH 798 Directed Reading and Research may not be used as thesis preparation. Students who want to register for thesis credits in the summer need the permission of the thesis committee.

Students should be aware of the university policies governing theses. They must follow the thesis enrollment policy and once enrolled in ENGH 798 Thesis, maintain continuous enrollment. These policies are specified in AP.6.9.3 Master’s Thesis (p. 95).
Select one course from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 415</td>
<td>Web Design and Usability</td>
<td>3</td>
</tr>
<tr>
<td>EDIT 426</td>
<td>Web Accessibility and Design</td>
<td></td>
</tr>
<tr>
<td>SWE 205</td>
<td>Software Usability Analysis and Design</td>
<td></td>
</tr>
</tbody>
</table>

Content Development

Select one course from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 208</td>
<td>Introduction to Media Production</td>
<td></td>
</tr>
<tr>
<td>COMM 435</td>
<td>Digital Communication</td>
<td></td>
</tr>
<tr>
<td>ENGH 376</td>
<td>Rhetoric and New Media</td>
<td></td>
</tr>
<tr>
<td>ENGH 377</td>
<td>Digital Creative Writing</td>
<td></td>
</tr>
</tbody>
</table>

Elective

Select one course not already taken as a required course above from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 180</td>
<td>New Media in the Creative Arts (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>AVT 215</td>
<td>Typography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 311</td>
<td>Graphic Design Methods and Principles</td>
<td></td>
</tr>
<tr>
<td>AVT 319</td>
<td>Mobile App Design</td>
<td></td>
</tr>
<tr>
<td>AVT 411</td>
<td>Motion Design</td>
<td></td>
</tr>
<tr>
<td>AVT 415</td>
<td>Web Design and Usability</td>
<td></td>
</tr>
<tr>
<td>AVT 420</td>
<td>Advanced Web Design</td>
<td></td>
</tr>
<tr>
<td>COMM 208</td>
<td>Introduction to Media Production</td>
<td></td>
</tr>
<tr>
<td>COMM 360</td>
<td>Digital Postproduction</td>
<td></td>
</tr>
<tr>
<td>COMM 435</td>
<td>Digital Communication</td>
<td></td>
</tr>
<tr>
<td>EDIT 426</td>
<td>Web Accessibility and Design</td>
<td></td>
</tr>
<tr>
<td>ENGH 376</td>
<td>Rhetoric and New Media</td>
<td></td>
</tr>
<tr>
<td>ENGH 377</td>
<td>Digital Creative Writing</td>
<td></td>
</tr>
<tr>
<td>IT 315</td>
<td>Mobile Development</td>
<td></td>
</tr>
<tr>
<td>IT 331</td>
<td>Web I: Web Development</td>
<td></td>
</tr>
<tr>
<td>IT 332</td>
<td>Web Server Administration</td>
<td></td>
</tr>
<tr>
<td>IT 335</td>
<td>Web Development using Content Management Systems</td>
<td></td>
</tr>
<tr>
<td>IT 415</td>
<td>Information Visualization</td>
<td></td>
</tr>
<tr>
<td>SWE 205</td>
<td>Software Usability Analysis and Design</td>
<td></td>
</tr>
</tbody>
</table>

Capstone

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT/AVT/COMM 479</td>
<td>Digital Media and Web Design Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 18

English, BA

Banner Code: LA-BA-ENGL

B413 Robinson Hall
Fairfax Campus

Website: english.gmu.edu/programs/la-ba-engl

The bachelor of arts in English offers students the opportunity to study literature, creative writing, film and media studies, writing and rhetoric, linguistics, folklore and mytholgy, and cultural studies. Of these seven concentrations, students pursue one or two that best match their interests and career objectives. Students are encouraged to pursue internships related to their concentrations and receive faculty mentorship throughout that process. In fact, English classes are kept small so faculty members may provide students with personalized attention. Students write in a range of traditional and digital forms and in a variety of contexts; student work culminates in a research project written for the major capstone course in their concentration. For students who want to challenge themselves even further, there is an Honors Program in English, which includes a thesis option, as well as other opportunities to pursue advanced research or creative projects; for those who want to become teachers, there is a bachelor’s/accelerated master’s program (p. 183) that English offers in conjunction with the College of Education and Human Development.

Admissions & Policies

Policies

Students pursuing this degree must complete 36 credits in English/Linguistics beyond ENGH 300 (not including ENGH 302) with a minimum GPA of 2.00. At least 12 credits (including the capstone requirement) must be at the 400 level.

For policies governing all undergraduate degrees, see AP 5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 370) tab.

300-level courses in English and linguistics teach the foundational principles for a field of study, include courses of broad scope, and provide an introduction to a genre, literary period, or methodology.

400-level courses in English and linguistics provide an in-depth approach to a field of study, a single genre, literary period, or methodology. They include special topics classes and English honors classes. Some 400 level courses require ENGH 305 Dimensions of Writing and Literature as a prerequisite.

Students choose at least one and no more than two of seven concentrations.

Students should consult with an English Department advisor to learn ways in which the Mason Core requirements can also satisfy college-level requirements for the English major.

Core Courses in the Major

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Threshold Course
| ENGH 301 | The Fields of English                      | 3       |
| Field Introduction Courses
| ENGH 305 | Dimensions of Writing and Literature       | 3       |
| Select 3 credits from the following: 1
| LING 306 | General Linguistics (Mason Core) (p. 142)  | 3       |
| ENGH 315 | Folklore and Folklife                      |         |
| ENGH 318 | Introduction to Cultural Studies           |         |
| ENGH 372 | Introduction to Film (Mason Core) (p. 142) |         |
| ENGH 380 | Introduction to Writing and Rhetoric        |         |
ENGH 396 Introduction to Creative Writing (Mason Core) (p. 142)

**Theory Course**

ENGH 308 Theory and Inquiry 3

**Capstone Course**

Select 3 credits from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 401</td>
<td>RS: Honors Thesis Writing Seminar (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>ENGH 417</td>
<td>RS: Topics in Folklore Research (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>ENGH 458</td>
<td>RS: Topics in Literary Research (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>ENGH 470</td>
<td>RS: Topics in Film/Media History (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>LING 480</td>
<td>First Language Acquisition (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>ENGH 484</td>
<td>RS: Writing Ethnography (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>ENGH 486</td>
<td>RS: Writing Nonfiction for Publication (Mason Core)</td>
<td>(p. 142)</td>
</tr>
</tbody>
</table>

Total Credits 15

1 For many students this requirement will be met within the concentration. Those students will complete an additional 3 credit ENGH course above ENGH 302 Advanced Composition (Mason Core) (p. 142).

**English Department Requirements**

Courses taken to fulfill this requirement may simultaneously satisfy a concentration. Special topics courses, when relevant, may be used to fulfill this requirement with the prior written approval of the department.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 320</td>
<td>Literature of the Middle Ages</td>
<td></td>
</tr>
<tr>
<td>ENGH 321</td>
<td>English Poetry and Prose of the 16th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 322</td>
<td>Shakespeare</td>
<td></td>
</tr>
<tr>
<td>ENGH 323</td>
<td>Shakespeare: Special Topics</td>
<td></td>
</tr>
<tr>
<td>ENGH 324</td>
<td>English Renaissance Drama</td>
<td></td>
</tr>
<tr>
<td>ENGH 325</td>
<td>English Poetry and Prose of the 17th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 330</td>
<td>Augustan Age: 1660-1745</td>
<td></td>
</tr>
<tr>
<td>ENGH 331</td>
<td>Age of Sensibility: 1745-1800</td>
<td></td>
</tr>
<tr>
<td>ENGH 332</td>
<td>Restoration and 18th Century Drama</td>
<td></td>
</tr>
<tr>
<td>ENGH 333</td>
<td>British Novel of the 18th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 340</td>
<td>Early American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 421</td>
<td>Topics in Medieval and Renaissance Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 422</td>
<td>Chaucer</td>
<td></td>
</tr>
<tr>
<td>ENGH 428</td>
<td>Milton</td>
<td></td>
</tr>
<tr>
<td>ENGH 336</td>
<td>British Novel of the 19th Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 341</td>
<td>Literature of the American Century</td>
<td></td>
</tr>
<tr>
<td>ENGH 343</td>
<td>Development of the American Renaissance</td>
<td></td>
</tr>
<tr>
<td>ENGH 348</td>
<td>Beginnings of African American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 349</td>
<td>African American Literature: Reconstruction</td>
<td></td>
</tr>
<tr>
<td>ENGH 360</td>
<td>Continental Fiction, 1770-1880</td>
<td></td>
</tr>
<tr>
<td>ENGH 361</td>
<td>Continental Fiction, 1880-1950</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

**Electives in the Major**

Students must take 0-12 elective credits in the major as needed to meet the 36-credit requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 310</td>
<td>Topics: Women and Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 315</td>
<td>Folks and Folklife</td>
<td></td>
</tr>
<tr>
<td>ENGH 319</td>
<td>Popular Culture</td>
<td></td>
</tr>
<tr>
<td>ENGH 348</td>
<td>Beginnings of African American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 350</td>
<td>African American Literature Through 1946</td>
<td></td>
</tr>
<tr>
<td>ENGH 351</td>
<td>Contemporary African American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 352</td>
<td>Topics in Ethnic American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>ENGH 366</td>
<td>The Idea of a World Literature (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>ENGH 367</td>
<td>World Literatures in English</td>
<td></td>
</tr>
<tr>
<td>ENGH 412</td>
<td>Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 414</td>
<td>Folklore and the Supernatural</td>
<td></td>
</tr>
<tr>
<td>ENGH 415</td>
<td>Folk Arts and Folk Artists</td>
<td></td>
</tr>
<tr>
<td>ENGH 416</td>
<td>Ethnicity and Migration in Folklore</td>
<td></td>
</tr>
<tr>
<td>ENGH 417</td>
<td>RS: Topics in Folklore Research (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>ENGH 419</td>
<td>Topics in Popular Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 451</td>
<td>Science Fiction</td>
<td></td>
</tr>
<tr>
<td>ENGH 452</td>
<td>Critical Study of Children’s Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 484</td>
<td>RS: Writing Ethnography (Mason Core)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 0-12

**Concentrations in the Major**

Students choose one and no more than two concentrations. Special topics courses may be used to fulfill the requirements for a concentration when so designated by department.

**Available Concentrations**

- Concentration in Creative Writing (CW) (p. 372)
- Concentration in Cultural Studies (CULT) (p. 372)
- Concentration in Film and Media Studies (FILM) (p. 372)
• Concentration in Folklore and Mythology (FOLK) (p. 372)
• Concentration in Linguistics (LING) (p. 373)
• Concentration in Literature (LIT) (p. 373)
• Concentration in Writing and Rhetoric (WRTR) (p. 374)

Concentration in Creative Writing (CW)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 377</td>
<td>Digital Creative Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 397</td>
<td>Poetry Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 398</td>
<td>Fiction Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 399</td>
<td>Creative Nonfiction Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 492</td>
<td>Advanced Fiction Writing Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGH 493</td>
<td>Advanced Workshop in Nonfiction</td>
<td></td>
</tr>
<tr>
<td>ENGH 494</td>
<td>Advanced Poetry Writing Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGH 497</td>
<td>Topics in Creative Writing</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Cultural Studies (CULT)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 310</td>
<td>Topics: Women and Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 315</td>
<td>Folklore and Folklife</td>
<td></td>
</tr>
<tr>
<td>ENGH 318</td>
<td>Introduction to Cultural Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 319</td>
<td>Popular Culture</td>
<td></td>
</tr>
<tr>
<td>ENGH 348</td>
<td>Beginnings of African American Literature Through 1865</td>
<td></td>
</tr>
<tr>
<td>ENGH 349</td>
<td>African American Literature: Reconstruction to 1903</td>
<td></td>
</tr>
<tr>
<td>ENGH 350</td>
<td>African American Literature Through 1946</td>
<td></td>
</tr>
<tr>
<td>ENGH 351</td>
<td>Contemporary African American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 352</td>
<td>Topics in Ethnic American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core) (p. 142) (with department approval)</td>
<td></td>
</tr>
<tr>
<td>ENGH 372</td>
<td>Introduction to Film (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 412</td>
<td>Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 414</td>
<td>Folklore and the Supernatural</td>
<td></td>
</tr>
<tr>
<td>ENGH 415</td>
<td>Folk Arts and Folk Artists</td>
<td></td>
</tr>
<tr>
<td>ENGH 416</td>
<td>Ethnicity and Migration in Folklore</td>
<td></td>
</tr>
<tr>
<td>ENGH 418</td>
<td>Cultural Constructions of Sexualities</td>
<td></td>
</tr>
<tr>
<td>ENGH 419</td>
<td>Topics in Popular Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 452</td>
<td>Critical Study of Children's Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 474</td>
<td>Topics in Film/Media Studies</td>
<td></td>
</tr>
</tbody>
</table>

May include one course from outside the English Department chosen from:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 377</td>
<td>Cyberpunk</td>
<td></td>
</tr>
<tr>
<td>COMM 201</td>
<td>Small Group Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 365</td>
<td>Gender, Race, and Class in the Media</td>
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</tr>
<tr>
<td>COMM 366</td>
<td>Visual Communication</td>
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<tr>
<td>COMM 380</td>
<td>Media Criticism</td>
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<tr>
<td>COMM 465</td>
<td>Topics in Communication and Gender</td>
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</tr>
<tr>
<td>FAVS 225</td>
<td>The History of World Cinema (Mason Core) (p. 142)</td>
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<tr>
<td>FAVS 300</td>
<td>Global Horror Film (Mason Core) (p. 142)</td>
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<td>FAVS 352</td>
<td>Ethics of Film and Video (Mason Core) (p. 142)</td>
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<tr>
<td>FREN 470</td>
<td>French and Francophone Cinema</td>
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<tr>
<td>FRLN 331</td>
<td>Topics in World Cinema (Mason Core) (p. 142)</td>
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<td>JAPA 320</td>
<td>Japanese Cinema</td>
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<tr>
<td>MUSI 301</td>
<td>Music in Motion Pictures (Mason Core) (p. 142)</td>
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<tr>
<td>RUSS 470</td>
<td>Topics in (Post) Soviet Film</td>
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Total Credits 12

Concentration in Film and Media Studies (FILM)

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<tr>
<td>ENGH 318</td>
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<tr>
<td>ENGH 319</td>
<td>Popular Culture (with department approval)</td>
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<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core) (p. 142) (with department approval)</td>
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<tr>
<td>ENGH 370</td>
<td>Introduction to Documentary (Mason Core) (p. 142)</td>
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<td>ENGH 371</td>
<td>Television Studies (Mason Core) (p. 142)</td>
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<td>ENGH 372</td>
<td>Introduction to Film (Mason Core) (p. 142)</td>
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<td>ENGH 373</td>
<td>Film and Video Forms</td>
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<tr>
<td>ENGH 418</td>
<td>Cultural Constructions of Sexualities (with department approval)</td>
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<td>ENGH 470</td>
<td>RS: Topics in Film/Media History (Mason Core) (p. 142)</td>
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<td>ENGH 472</td>
<td>Topics in Film/Media Theory</td>
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May include one course from outside the English Department chosen from:

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<td>COMM 465</td>
<td>Topics in Communication and Gender</td>
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<td>The History of World Cinema (Mason Core) (p. 142)</td>
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<td>Music in Motion Pictures (Mason Core) (p. 142)</td>
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<tr>
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<td>Topics in (Post) Soviet Film</td>
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Total Credits 12

Concentration in Folklore and Mythology (FOLK)

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<td>ENGH 315</td>
<td>Folklore and Folklife</td>
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<tr>
<td>ENGH 316</td>
<td>Topics in Myth and Literature</td>
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<tr>
<td>ENGH 412</td>
<td>Topics in Folklore Studies</td>
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<td>ENGH 414</td>
<td>Folklore and the Supernatural</td>
<td></td>
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<tr>
<td>ENGH 415</td>
<td>Folk Arts and Folk Artists</td>
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<tr>
<td>ENGH 416</td>
<td>Ethnicity and Migration in Folklore</td>
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Select 6 credits in folklore and mythology from the following:

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<th>Title</th>
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<td>ENGH 316</td>
<td>Topics in Myth and Literature</td>
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</tr>
<tr>
<td>ENGH 412</td>
<td>Topics in Folklore Studies</td>
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<td>ENGH 414</td>
<td>Folklore and the Supernatural</td>
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<td>ENGH 415</td>
<td>Folk Arts and Folk Artists</td>
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Total Credits 6
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<td>RS: Topics in Folklore Research (Mason Core) (p. 142)</td>
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<td>ENGH 459</td>
<td>Internship</td>
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<td>RS: Writing Ethnography (Mason Core) (p. 142)</td>
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<td>ENGH 591</td>
<td>Topics in Folklore Studies</td>
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May include one course from outside the English Department chosen from:

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<td>ANTH 450</td>
<td>Qualitative Methods: Nonstatistical Approaches in Culture and Social Research</td>
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<td>CLAS 340</td>
<td>Greek and Roman Epic (Mason Core) (p. 142)</td>
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Select up to 6 credits related to folklore and mythology from the following:

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<td>ENGH 320</td>
<td>Literature of the Middle Ages</td>
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<tr>
<td>ENGH 322</td>
<td>Shakespeare</td>
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<td>ENGH 323</td>
<td>Shakespeare: Special Topics</td>
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<tr>
<td>ENGH 339</td>
<td>British and Irish Drama after 1900</td>
<td></td>
</tr>
<tr>
<td>ENGH 348</td>
<td>Beginnings of African American Literature Through 1865</td>
<td></td>
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<tr>
<td>ENGH 349</td>
<td>African American Literature: Reconstruction to 1903</td>
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<td>ENGH 350</td>
<td>African American Literature Through 1946</td>
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<tr>
<td>ENGH 351</td>
<td>Contemporary African American Literature</td>
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<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core) (p. 142)</td>
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<tr>
<td>ENGH 422</td>
<td>Chaucer</td>
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<td>ENGH 428</td>
<td>Milton</td>
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May include one course from outside the English Department chosen from:

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<tbody>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
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<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
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<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
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<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
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<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 321</td>
<td>Greek Art and Archaeology (Mason Core) (p. 142)</td>
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<td>ARTH 322</td>
<td>Roman Art and Archaeology (Mason Core) (p. 142)</td>
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<td>ARTH 340</td>
<td>Early Renaissance Art in Italy, 1300-1500 (Mason Core) (p. 142)</td>
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<td>ARTH 342</td>
<td>High Renaissance Art in Italy, 1480-1570 (Mason Core) (p. 142)</td>
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<td>ARTH 345</td>
<td>Northern Baroque Art, 1600-1750 (Mason Core) (p. 142)</td>
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<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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Total Credits 12

**Concentration in Linguistics (LING)**

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<td>General Linguistics (Mason Core) (p. 142)</td>
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<tr>
<td>LING 480</td>
<td>First Language Acquisition (Mason Core) (p. 142)</td>
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Select 6 credits from the following:

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<td>LING 307</td>
<td>English Grammar</td>
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<td>LING 450</td>
<td>Introduction to Sociolinguistics</td>
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<td>LING 485</td>
<td>Semantics and Pragmatics</td>
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<td>LING 486</td>
<td>Syntax I</td>
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<td>LING 490</td>
<td>Generative Phonology</td>
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<td>LING 499</td>
<td>Independent Study</td>
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<tr>
<td>LING 507</td>
<td>Field Work in Applied Linguistics</td>
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<td>LING 521</td>
<td>Applied Linguistics: Teaching English as a Second Language</td>
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<td>LING 523</td>
<td>English Phonetics</td>
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<td>LING 581</td>
<td>Psycholinguistics</td>
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<td>LING 582</td>
<td>Second Language Acquisition</td>
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Total Credits 12

**Concentration in Literature (LIT)**

When relevant, ENGH 400 Honors Seminar, ENGH 401 RS: Honors Thesis Writing Seminar (Mason Core) (p. 142), and ENGH 402 Honors Independent Study may be applied to this concentration.

Select four courses from the following:

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<td>ENGH 309</td>
<td>Topics in Literature</td>
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<td>ENGH 310</td>
<td>Topics: Women and Literature</td>
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<td>ENGH 320</td>
<td>Literature of the Middle Ages</td>
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<td>ENGH 321</td>
<td>English Poetry and Prose of the 16th Century</td>
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<td>ENGH 322</td>
<td>Shakespeare</td>
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<td>ENGH 323</td>
<td>Shakespeare: Special Topics</td>
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<td>ENGH 324</td>
<td>English Renaissance Drama</td>
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<td>ENGH 325</td>
<td>English Poetry and Prose of the 17th Century</td>
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<td>ENGH 330</td>
<td>Augustan Age: 1660-1745</td>
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<td>ENGH 331</td>
<td>Age of Sensibility: 1745-1800</td>
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<td>ENGH 332</td>
<td>Restoration and 18th Century Drama</td>
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<td>ENGH 333</td>
<td>British Novel of the 18th Century</td>
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<td>ENGH 334</td>
<td>British Poetry of the Romantic Period</td>
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<td>Prose and Poetry of the Victorian Period</td>
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<td>ENGH 336</td>
<td>British Novel of the 19th Century</td>
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<td>ENGH 337</td>
<td>British Poetry after 1900</td>
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<td>ENGH 338</td>
<td>British Novel after 1900</td>
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<td>British and Irish Drama after 1900</td>
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<td>ENGH 340</td>
<td>Early American Literature</td>
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<td>Course</td>
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<td>Credits</td>
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<td>Development of the American Novel to 1914</td>
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<td>ENGH 344</td>
<td>Development of the American Novel since 1914</td>
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<td>ENGH 345</td>
<td>American Drama of the 20th Century</td>
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<td>African American Literature Through 1946</td>
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<td>Topics in Ethnic American Literature</td>
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<td>ENGH 355</td>
<td>Recent American Fiction</td>
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<td>ENGH 356</td>
<td>Recent American Poetry</td>
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<td>ENGH 360</td>
<td>Continental Fiction, 1770-1880</td>
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<td>ENGH 361</td>
<td>Continental Fiction, 1880-1950</td>
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<td>ENGH 362</td>
<td>Global Voices (Mason Core) (p. 142) (when topic is relevant, with departmental approval)</td>
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<td>The Idea of a World Literature (Mason Core) (p. 142)</td>
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<td>World Literatures in English</td>
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<td>ENGH 368</td>
<td>Modern Drama</td>
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<td>ENGH 408</td>
<td>Topics in Criticism (when topic is relevant, with departmental approval)</td>
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<td>ENGH 409</td>
<td>Literary Modes</td>
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<td>Topics in Popular Literature</td>
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<td>Topics in Medieval and Renaissance Literature</td>
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<td>ENGH 422</td>
<td>Chaucer</td>
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<tr>
<td>ENGH 428</td>
<td>Milton</td>
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<td>ENGH 431</td>
<td>Topics: British Literary Periods</td>
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<td>ENGH 432</td>
<td>Topics: British Authors</td>
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<td>Topics: American Literary Periods</td>
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<td>Science Fiction</td>
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<td>ENGH 452</td>
<td>Critical Study of Children’s Literature</td>
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<td>Topics in Fiction</td>
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<td>Topics in Poetry</td>
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<td>Topics in Drama</td>
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<td>Topics in Literary Nonfiction</td>
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<td>ENGH 458</td>
<td>RS: Topics in Literary Research (Mason Core) (p. 142)</td>
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**Writing Intensive Requirement**

The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in English fulfill this requirement by successfully completing:

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGH 305</td>
<td>Dimensions of Writing and Literature</td>
<td>3</td>
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</table>

**Upper Level Courses**

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

**Additional Electives**

Any remaining credits may be completed with elective courses to bring the degree total to 120.

**College Level Requirements for the BA Degree**

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

**Philosophy or Religious Studies**

<table>
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<tr>
<td>PHIL</td>
<td>Writing Ethnography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI</td>
<td>Writing Nonfiction for Publication (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Concentration in Writing and Rhetoric (WRTR)**

Select four courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 375</td>
<td>Web Authoring and Design</td>
<td></td>
</tr>
<tr>
<td>ENGH 376</td>
<td>Rhetoric and New Media</td>
<td></td>
</tr>
<tr>
<td>ENGH 380</td>
<td>Introduction to Writing and Rhetoric</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**

12
Note that the following courses may not be used to fulfill this requirement:
- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

### Social and Behavioral Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits of social and behavioral sciences from the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>following (additional to the Mason Core social and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>behavioral sciences requirement)</td>
<td></td>
</tr>
<tr>
<td>ANTH</td>
<td>(p. 1212)</td>
<td>3</td>
</tr>
<tr>
<td>CRIM</td>
<td>(p. 1514)</td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td>(p. 1774)</td>
<td></td>
</tr>
<tr>
<td>HIST</td>
<td>(p. 1818)</td>
<td></td>
</tr>
<tr>
<td>LING</td>
<td>(p. 1896)</td>
<td></td>
</tr>
<tr>
<td>PSYC</td>
<td>(p. 2074)</td>
<td></td>
</tr>
<tr>
<td>SOCI</td>
<td>(p. 2167)</td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:
- GGS 101 Major World Regions (Mason Core) (p. 142)
- GGS 103 Human Geography (Mason Core) (p. 142)
- GGS 110 Introduction to Geoinformation Technologies
- GGS 301 Political Geography
- GGS 303 Geography of Resource Conservation (Mason Core) (p. 142)
- GGS 304 Population Geography (Mason Core) (p. 142)
- GGS 305 Economic Geography
- GGS 306 Urban Geography
- GGS 315 Geography of the United States
- GGS 316 Geography of Latin America
- GGS 320 Geography of Europe
- GGS 325 Geography of North Africa and the Middle East
- GGS 330 Geography of the Soviet Succession States
- GGS 357 Urban Planning
- GGS 380 Geography of Virginia

1 The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

2 HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

### Foreign Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intermediate-level proficiency in one foreign language, fulfilled by:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or completing the following ASL three course sequence:</td>
<td></td>
</tr>
<tr>
<td>EDSE</td>
<td>American Sign Language (ASL) I</td>
<td></td>
</tr>
<tr>
<td>EDSE</td>
<td>American Sign Language (ASL) II</td>
<td></td>
</tr>
<tr>
<td>EDSE</td>
<td>American Sign Language (ASL) III</td>
<td></td>
</tr>
</tbody>
</table>

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

### Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH</td>
<td>Introduction to Cultural Anthropology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Peoples and Cultures of Latin America (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Ancient Mesoamerica (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Peoples and Cultures of the Middle East (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Peoples and Cultures of India (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Myth, Magic, and Mind (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Zombies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>Issues in Anthropology: Social Sciences (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ARAB</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
</tr>
<tr>
<td>ARAB</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
</tr>
<tr>
<td>ARAB</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH</td>
<td>Survey of Asian Art (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH</td>
<td>Survey of Latin American Art (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH</td>
<td>Survey of African Art (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH</td>
<td>Art and Archaeology of Ancient Egypt</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>-------------</td>
<td>------------------------------------------------------------------------------</td>
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<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core)</td>
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<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core)</td>
<td>3</td>
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<tr>
<td>ARTH 384</td>
<td>Arts of China (Mason Core)</td>
<td>3</td>
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<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 386</td>
<td>The Silk Road (Mason Core)</td>
<td>3</td>
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<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
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<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core)</td>
<td>3</td>
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<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core)</td>
<td>3</td>
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<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core)</td>
<td>3</td>
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<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core)</td>
<td>3</td>
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<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
<td>3</td>
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<tr>
<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
<td>3</td>
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<td>GGS 101</td>
<td>Major World Regions (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td>3</td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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</tr>
<tr>
<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
</tr>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
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<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
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<tr>
<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
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<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
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<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core)</td>
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<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core)</td>
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<td>HIST 261</td>
<td>Survey of African History (Mason Core)</td>
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<tr>
<td>HIST 262</td>
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<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core)</td>
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<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core)</td>
<td>3</td>
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<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core)</td>
<td>3</td>
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<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core)</td>
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<tr>
<td>HIST 326</td>
<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>HIST 328</td>
<td>Rise of Russia (Mason Core)</td>
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<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core)</td>
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<td>HIST 353</td>
<td>History of Traditional China</td>
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<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core)</td>
<td>3</td>
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<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core)</td>
<td>3</td>
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<td>HIST 357</td>
<td>Postwar Japan (Mason Core)</td>
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<td>HIST 358</td>
<td>Post-1949 China (Mason Core)</td>
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<td>HIST 360</td>
<td>History of South Africa (Mason Core)</td>
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<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core)</td>
<td>3</td>
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<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core)</td>
<td>3</td>
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<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
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<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
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<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core)</td>
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<td>HIST 426</td>
<td>The Russian Revolution</td>
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<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core)</td>
<td>3</td>
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<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td>3</td>
</tr>
<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core)</td>
<td>3</td>
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<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
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<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core)</td>
<td>3</td>
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<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>3</td>
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<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core)</td>
<td>3</td>
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<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core)</td>
<td>3</td>
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<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core)</td>
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<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
</tr>
<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
</tr>
<tr>
<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
<td>3</td>
</tr>
<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 375</td>
<td>Qur'an and Hadith</td>
<td>3</td>
</tr>
<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
<td>3</td>
</tr>
</tbody>
</table>
Students may satisfy the honors course sequence in one of the following ways:

- BA students may take two sections of ENGH 400 Honors Seminar
- BA students may take one section of ENGH 400 Honors Seminar and ENGH 401 RS: Honors Thesis Writing Seminar (Mason Core) (p. 142)

BA students with a concentration in creative writing may write a creative honors thesis in ENGH 401 RS: Honors Thesis Writing Seminar (Mason Core) (p. 142). In special cases, BA students with a concentration in creative writing may apply to the Honors Coordinator and ENGH 495 instructor for permission to use ENGH 495 as a substitute for ENGH 401.

Students interested in pursuing honors in the major should consult the English Department (p. 359) for more information.

### Accelerated Master's

The accelerated master's programs in the list below specify the BA in English as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason. In addition, a student with a BA in English you may be particularly interested in the accelerated MA in English with a concentration in linguistics. (p. 382)

### English, BA or Creative Writing, BFA/ Curriculum and Instruction, Accelerated MEd (Secondary Education English concentration)

#### Overview

Highly-qualified Mason undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BA in English (p. 370) or a BFA in Creative Writing (p. 362) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education English) in an accelerated time-frame after satisfactory completion of 149 credits. See AP6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of English (p. 359) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

#### Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

### Accelerated Option Requirements

Students complete the following courses in their senior year:
they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)**

**Overview**

Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Selected Majors**

Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

**Accelerated Option Requirements**

While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)**

**Overview**

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Selected Majors**

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).
Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

Accelerated Option Requirements

While undergraduate students, accelerated master's students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/ Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP .1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

English Minor

Banner Code: ENGL

Academic Advising

B413 Robinson Hall
Fairfax Campus

Website: english.gmu.edu/programs/la-minor-engl-engl

This minor provides students with a strong background in writing and critical thinking and will also introduce them to significant literary and cultural documents.
English, MA

Banner Code: LA-MA-ENGL

Academic Advising
B413 Robinson Hall
Fairfax Campus
Email: englgrad@gmu.edu
Website: english.gmu.edu/programs/la-ma-engl

The master of arts in English at Mason offers students the opportunity to enhance their skills of reading, writing, research and teaching with courses that encompass the wide range of contemporary English studies. Students can work in and across concentrations in literature, professional writing, rhetoric, cultural studies, film, folklore, linguistics, and the teaching of writing and literature. It offers the MA in field-specific concentrations as well as the opportunity to combine a concentration in one field with a certificate from another one. Many students use the MA for professional enhancement, or as an entry into teaching, professional writing, or doctoral study.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the MA in English, see Application Requirements and Deadlines [http://english.gmu.edu/programs/application/LA-MA-ENGL] on the departmental website.

Policies

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Satisfactory Progress

Students have six years to complete the MA. Students writing a thesis must have an approved proposal by the end of their fifth year as an MA candidate in English and may not make significant changes to that proposal during their sixth year. By the end of the first semester of their sixth year, thesis students need to demonstrate that they have completed their research and are well advanced in developing their analysis and argument, generally by submitting to their advisors a completed rough draft of the thesis or evidence that they have completed their fieldwork and analysis. A student may be dropped from the program if, in the judgment of the thesis advisor and graduate director, evidence of satisfactory progress on the thesis has not been provided by the end of the first semester of a student’s sixth year.

Requirements

Degree Requirements

Total credits: 30

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 380) tab.

Students pursuing this degree must successfully complete 30 credits in one concentration as specified below.

Students in the concentrations of cultural studies, literature, and teaching of writing and literature must demonstrate intermediate proficiency in a foreign language in one of the following ways: submitting an undergraduate (or continuing education) transcript that includes courses corresponding to intermediate proficiency; completing a Mason foreign language course numbered 202 or higher; passing a proficiency exam administered by the English department.

Concentration in Cultural Studies (CULT)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 500</td>
<td>Research in English Studies</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 676</td>
<td>Introduction to Cultural Studies</td>
<td>3</td>
</tr>
<tr>
<td>CULT 802</td>
<td>Histories of Cultural Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Two Courses

Select 6 credits from the following: 6

- ENGH 551 Introduction to Literary Theory
- ENGH 665 Seminar in Global Culture
- ENGH 670 Seminar in Film and Media Studies
- ENGH 675 Feminist Theory and Criticism
- ENGH 685 Selected Topics, Movements, or Genres of Literature in English
- ENGH 705 Literary Theory and Criticism
- ENGH 740 Seminar in English/Cultural Studies

Three to Five Courses of Literature

Select 9-15 credits from the following: 9-15

- ENGH 511 Graduate Literature Survey
- ENGH 513 Topics in Literary and Cultural Studies
- ENGH 514 Theories of Comparative Literature
- ENGH 526 Special Topics in the History and Criticism of Children’s Literature
- ENGH 530 Graduate Survey in African American Literature
- ENGH 590 Topics in Folk Narrative
- ENGH 591 Topics in Folklore Studies
- ENGH 642 Seminar in British Literature
- ENGH 644 Seminar in American Literature
- ENGH 646 Seminar in Advanced Research
- ENGH 661 Seminar in African-American Literature
- ENGH 662 Seminar in Literary Studies
- ENGH 665 Seminar in Global Culture
- ENGH 670 Seminar in Film and Media Studies
- ENGH 681 Advanced Topics in Folklore Studies
- ENGH 685 Selected Topics, Movements, or Genres of Literature in English
- ENGH 705 Literary Theory and Criticism
- ENGH 790 Projects in Literary Studies

Optional Project or Thesis

Select 3-6 credits of a project or a thesis from the following: 3-6

Project: 2
- ENGH 790 Projects in Literary Studies (3 credits)

Thesis: 3
ENGH 799 Thesis (6 credits)
Total Credits 30

1 ENGH 685 Selected Topics, Movements, or Genres of Literature in English, ENGH 705 Literary Theory and Criticism, and ENGH 740 Seminar in English/Cultural Studies may be repeated once with permission of the director of graduate studies.

2 Students who choose a project take 3 fewer credits of literature.
3 Students who choose a thesis take 6 fewer credits of literature.

Concentration in Linguistics (LING)
The linguistics concentration combines courses in linguistics with courses in some related area of language study, such as teaching English as a second language, bilingual education, or foreign language teaching. This course of study is designed to prepare students for teaching in one of these fields or for doctoral work. The certificate in teaching English as a second language (TESL) (p. 390) can be earned concurrently.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 580</td>
<td>First Language Acquisition</td>
<td>3</td>
</tr>
<tr>
<td>LING 690</td>
<td>Generative Phonology</td>
<td>3</td>
</tr>
<tr>
<td>LING 692</td>
<td>Phonology II</td>
<td>3</td>
</tr>
<tr>
<td>LING 785</td>
<td>Semantics and Pragmatics</td>
<td>3</td>
</tr>
<tr>
<td>LING 786</td>
<td>Syntax I</td>
<td>3</td>
</tr>
<tr>
<td>LING 787</td>
<td>Syntax II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**
Select 12 credits of electives

Total Credits 30

1 In consultation with an advisor, chosen from courses that reflect one or more areas of language study. Electives can be in such areas as linguistics, the teaching of reading or writing, literary criticism, bilingual education, or a foreign language, and may include 6 credits of thesis.

Concentration in Literature (LIT)
The concentration in literature is designed to provide students with a solid foundation in the study of literature and literary theory, as well as an opportunity to specialize in a particular area of interest.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 500</td>
<td>Research in English Studies</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 551</td>
<td>Introduction to Literary Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

**Literature**
Select 18 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 511</td>
<td>Graduate Literature Survey</td>
<td></td>
</tr>
<tr>
<td>ENGH 513</td>
<td>Topics in Literary and Cultural Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 514</td>
<td>Theories of Comparative Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 526</td>
<td>Special Topics in the History and Criticism of Children's Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 530</td>
<td>Graduate Survey in African American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 590</td>
<td>Topics in Folk Narrative</td>
<td></td>
</tr>
<tr>
<td>ENGH 591</td>
<td>Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 642</td>
<td>Seminar in British Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 644</td>
<td>Seminar in American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 646</td>
<td>Seminar in Advanced Research</td>
<td></td>
</tr>
<tr>
<td>ENGH 661</td>
<td>Seminar in African-American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGH 662</td>
<td>Seminar in Literary Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 665</td>
<td>Seminar in Global Culture</td>
<td></td>
</tr>
<tr>
<td>ENGH 670</td>
<td>Seminar in Film and Media Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 681</td>
<td>Advanced Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 685</td>
<td>Selected Topics, Movements, or Genres of Literature in English</td>
<td></td>
</tr>
<tr>
<td>ENGH 705</td>
<td>Literary Theory and Criticism</td>
<td></td>
</tr>
<tr>
<td>ENGH 790</td>
<td>Projects in Literary Studies</td>
<td></td>
</tr>
</tbody>
</table>

**Two Electives or Thesis**
Select 6 credits of Electives

ENGH 799 Thesis

Total Credits 30

1 Must be taken in the first 12 credits of the degree. Another course in literary theory and criticism may substitute for ENGH 551 Introduction to Literary Theory with prior written approval of the graduate director.

2 Courses fulfilling this requirement must include at least three 600-level ENGH seminars. Graduate seminars involve focused study of a topic with significant attention to scholarship in the field.

3 Electives taught within the English department may be taken without permission of the graduate director. A maximum of six credits of related study outside the department may substitute for the equivalent number of elective credits, with permission of the graduate director.

4 Students who choose a thesis take 6 fewer credits of literature or electives.

Concentration in Professional Writing and Rhetoric (PWR)

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 501</td>
<td>Introduction to Professional Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 502</td>
<td>Research Methods in Rhetoric and Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 503</td>
<td>Theory and Practice of Editing</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 505</td>
<td>Document Design</td>
<td>3</td>
</tr>
</tbody>
</table>

**Professional Writing**
Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 504</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>ENGH 506</td>
<td>Research for Narrative Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 507</td>
<td>Web Authoring and Design</td>
<td></td>
</tr>
<tr>
<td>ENGH 508</td>
<td>Digital Rhetoric</td>
<td></td>
</tr>
<tr>
<td>ENGH 509</td>
<td>Proposal Writing and Development</td>
<td></td>
</tr>
<tr>
<td>ENGH 609</td>
<td>Online Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 611</td>
<td>Studies in Rhetoric</td>
<td></td>
</tr>
<tr>
<td>ENGH 612</td>
<td>Cultures of Professional Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 613</td>
<td>Technical Communication</td>
<td></td>
</tr>
<tr>
<td>ENGH 615</td>
<td>Proseminar in Composition Instruction</td>
<td></td>
</tr>
<tr>
<td>ENGH 689</td>
<td>Advanced Proposal Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 690</td>
<td>Special Topics in Writing and Rhetoric</td>
<td></td>
</tr>
<tr>
<td>ENGH 696</td>
<td>Northern Virginia Writing Project Teacher/ Research Seminar</td>
<td></td>
</tr>
<tr>
<td>ENGH 697</td>
<td>Composition Theory</td>
<td></td>
</tr>
</tbody>
</table>
Theory
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 508</td>
<td>Digital Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 551</td>
<td>Introduction to Literary Theory</td>
<td></td>
</tr>
<tr>
<td>ENGH 611</td>
<td>Studies in Rhetoric</td>
<td></td>
</tr>
<tr>
<td>ENGH 675</td>
<td>Feminist Theory and Criticism</td>
<td></td>
</tr>
<tr>
<td>ENGH 676</td>
<td>Introduction to Cultural Studies</td>
<td></td>
</tr>
</tbody>
</table>

Electives in English
Select 0-3 credits of electives in English (p. 1637)       0-3

Project or Thesis
Select 3-6 credits of a project or thesis                   3-6

- Project:  
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 797</td>
<td>Projects in Professional Writing and Rhetoric</td>
<td>3</td>
</tr>
</tbody>
</table>

- Thesis:  
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 799</td>
<td>Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits                                      30

1. ENGH 501 Introduction to Professional Writing and Rhetoric should be taken in the first semester of study, if possible.
2. Students who choose a project take one additional elective of 3 credits.

Concentration in the Teaching of Writing and Literature (TWL)

Research Courses
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 500</td>
<td>Research in English Studies</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 602</td>
<td>Pedagogical Research</td>
<td>3</td>
</tr>
</tbody>
</table>

Teaching Writing
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 615</td>
<td>Proseminar in Composition Instruction</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 695</td>
<td>Northern Virginia Writing Project Inservice Program</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 699</td>
<td>Workshop in English</td>
<td>2</td>
</tr>
</tbody>
</table>

Teaching Literature
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 610</td>
<td>Proseminar in Teaching the Reading of Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 695</td>
<td>Northern Virginia Writing Project Inservice Program</td>
<td>3</td>
</tr>
</tbody>
</table>

Composition Theory
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 697</td>
<td>Composition Theory</td>
<td>3</td>
</tr>
<tr>
<td>or ENGH 611</td>
<td>Studies in Rhetoric</td>
<td></td>
</tr>
</tbody>
</table>

Literature Courses
Select 6 credits from courses in the Literature Concentration  6

Linguistics Course
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 520</td>
<td>Introduction to Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>LING 507</td>
<td>Field Work in Applied Linguistics</td>
<td></td>
</tr>
<tr>
<td>LING 521</td>
<td>Applied Linguistics: Teaching English as a Second Language</td>
<td>3</td>
</tr>
<tr>
<td>LING 522</td>
<td>Modern English Grammar</td>
<td></td>
</tr>
</tbody>
</table>

EDCI 519    Methods of Teaching Culturally and Linguistically Diverse Learners
LING 581    Psycholinguistics

Electives
6 credits of electives       6

Optional Thesis
Select 6 credits of thesis in place of elective requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 799</td>
<td>Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits                                      30

1. Offered only to full-time teachers through school district contracts.
2. NVWP Summer Institute, open to full-time teachers on an invitation basis.
3. Open to non-TAs in the spring semester.
4. Note all courses, with exception of LING 520 Introduction to Linguistics, have prerequisites.

Accelerated Master’s

Bachelor’s Degree (any)/English, Accelerated MA (Linguistics Concentration)

Overview
Highly qualified Mason undergraduates in any major may apply to the accelerated master’s degree in English with a concentration in linguistics. If accepted, students will be able to earn a BA in their chosen major and an MA in English with a concentration in linguistics after satisfactory completion of 144 credits.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in English (linguistics concentration), see Application Requirements and Deadlines (http://english.gmu.edu/programs/application/LA-MA-ENGL) on the departmental website.

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses (chosen from LING 690 Generative Phonology, LING 580 First Language Acquisition, LING 692 Phonology II) as indicated on their Accelerated Master’s Program Application with a minimum grade of 3.00 in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students
must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional credits of LING 500-level and 600-level courses as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Film and Media Studies Minor
Banner Code: FILM

Academic Advising
B413 Robinson Hall
Fairfax Campus
Phone: 703-993-2768
Website: english.gmu.edu/programs/la-minor-la-film

The interdisciplinary minor explores mass culture in its visual manifestations and helps students develop an informed awareness of culture and media, ideological tendencies, and effects on daily experience. Committed to interdisciplinary studies, the program addresses the increasing complexity and multiplicity of visual cultures and offers students the tools with which to read a variety of texts, including film, television, video, and new media.

Most coursework is offered through the Departments of Communication (p. 313) and English (p. 359), with other courses available through the Department of Modern and Classical Languages (p. 424) and the Film and Video Studies (p. 821) Program (p. 821). The two required courses provide an introduction to the languages of film and popular media and modes of analysis appropriate to each. They are prerequisites for all advanced work in the minor. Students select four additional courses designed to introduce a more specialized level of study. Students may decide to focus on film, television, or the study of mass culture, or they may choose some mix of courses that suits their interests.

Faculty
Cynthia Fuchs, Program Director
Thomas Britt, Film and Video Studies; Giovanna Chesler, Film and Video Studies; Julie Christensen, Modern and Classical Languages; Mark Cooley, Art and Visual Technology; Jeremy Freer, School of Music; Timothy Gibson, Communication; Carma Hinton, Robinson Professor; Alison Landsberg, History and Art History; Carla Marcantonio, English; David Miller, Communication; Janine Ricouart, Modern and Classical Languages; Jessica Scarlata, English; Benjamin Steger, Film and Video Studies; Gail Scott White, Art and Visual Technology; Martin Winkler, Modern and Classical Languages.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 383) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 372</td>
<td>Introduction to Film (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 380</td>
<td>Media Criticism</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Electives

AVT, COMM, and FAVS majors can only use 6 elective credits from their home department toward the FAMS minor. Only six credits total for any students may be FAVS courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 377</td>
<td>Cyberpunk</td>
<td>12</td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td></td>
</tr>
<tr>
<td>COMM 208</td>
<td>Introduction to Media Production</td>
<td></td>
</tr>
<tr>
<td>COMM 302</td>
<td>Media Theory</td>
<td></td>
</tr>
<tr>
<td>COMM 350</td>
<td>Mass Communication and Public Policy</td>
<td></td>
</tr>
<tr>
<td>COMM 358</td>
<td>Multi-Camera Studio Production</td>
<td></td>
</tr>
<tr>
<td>COMM 360</td>
<td>Digital Postproduction</td>
<td></td>
</tr>
<tr>
<td>COMM 364</td>
<td>Videography</td>
<td></td>
</tr>
<tr>
<td>COMM 365</td>
<td>Gender, Race, and Class in the Media</td>
<td></td>
</tr>
<tr>
<td>COMM 366</td>
<td>Visual Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 372</td>
<td>Sports and the Media</td>
<td></td>
</tr>
<tr>
<td>COMM 452</td>
<td>Media Production Practicum</td>
<td></td>
</tr>
<tr>
<td>COMM 456</td>
<td>Comparative Mass Media (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 318</td>
<td>Introduction to Cultural Studies</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 319</td>
<td>Popular Culture</td>
<td>1,2</td>
</tr>
<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core) (p. 142)</td>
<td>1,2</td>
</tr>
<tr>
<td>ENGH 370</td>
<td>Introduction to Documentary (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 371</td>
<td>Television Studies (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 373</td>
<td>Film and Video Forms</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 418</td>
<td>Cultural Constructions of Sexualities</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 419</td>
<td>Topics in Popular Literature</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 470</td>
<td>RS: Topics in Film/Media History (Mason Core) (p. 142)</td>
<td>2</td>
</tr>
<tr>
<td>ENGH 472</td>
<td>Topics in Film/Media Theory</td>
<td>2</td>
</tr>
</tbody>
</table>
Stories told in both sacred and secular contexts, along with festivals, foods, music, material objects, and other traditional art forms, continue to influence our lives. This interdisciplinary minor offers students tools to explore the compelling meanings within these seemingly simple, everyday cultural texts, and helps them become more aware of the ways these texts are used by individuals and institutions for various goals. Students study folklore and mythology by juxtaposing the multiple viewpoints of anthropology, art history, classical studies, literary studies, and religious studies.

Faculty
Burek, Dakake, Decaroli, Gatling (coordinator), Gilman, Lattanzi Shutika, Usher, Winkler

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. A course used to fulfill the 3 credits of literature required for Mason Core (p. 147) may not also be applied to the minor. To avoid duplication of courses, English majors who choose this minor may not select the English Department’s folklore and mythology concentration.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).
**Folklore Studies Graduate Certificate**

**Banner Code:** LA-CERG-FLKS

**Academic Advising**
B413 Robinson Hall
Fairfax Campus
Website: english.gmu.edu/programs/la-cerg-flks

The certificate in folklore studies enables students to explore the processes of tradition that move through multiple expressive forms, such as folktales, folk beliefs, folk medicine, folk art, folksong, and literature. A discipline based on ethnographic fieldwork, folklore studies offers students a chance to work in communities and collect living traditional materials that are critical to human identity and values. Interdisciplinary by nature, folklore thrives on local particularities as well as compelling global connections.

This certificate prepares students for careers in cultural agencies, governmental organizations, and teaching institutions, and advanced study in folklore and in the humanities.

### Admissions & Policies

#### Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the graduate certificate in folklore studies, see Application Requirements and Deadlines (http://english.gmu.edu/programs/la-cerg-flks/application).

#### Requirements

**Certificate Requirements**

Total credits: 18

This certificate may be pursued on a full- or part-time basis.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

**Core Courses**

**Pathways to Folklore Scholarship**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 681</td>
<td>Advanced Topics in Folklore Studies ¹</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Topic must be Pathways to Folklore Scholarship. May also be repeated for additional credit when topic is different.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 526</td>
<td>Special Topics in the History and Criticism of Children's Literature ¹</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 590</td>
<td>Topics in Folk Narrative ¹</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 591</td>
<td>Topics in Folklore Studies ¹</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 681</td>
<td>Advanced Topics in Folklore Studies ¹</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 798</td>
<td>Directed Reading and Research</td>
<td></td>
</tr>
<tr>
<td>ANTH 750</td>
<td>Ethnographic Genres</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

¹ May be repeated for credit if the topic is different.

**Research Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 500</td>
<td>Research in English Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History</td>
<td></td>
</tr>
<tr>
<td>SOCI 634</td>
<td>Qualitative Research Methods</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits of a relevant elective with the prior written approval of the director.</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### Linguistics Minor

**Banner Code:** LING

**Academic Advising**
B413 Robinson Hall
Fairfax Campus
Email: english@gmu.edu
Website: english.gmu.edu/programs/la-minor-la-ling

Linguistics is the scientific study of language. Language is studied descriptively, theoretically, computationally, psychologically, and as a social phenomenon. The field of linguistics thus informs and is informed by many other areas of study, including philosophy, psychology, sociology, computer science, the study of individual languages and literature, literary studies, and education.
This minor introduces the fundamental concepts of modern linguistic theory and explores how these concepts relate to various other disciplines.

**Faculty**

Back, Goldin, Jones, Leeman, Levine, Morrill, Roman-Mendoza, Serafini, Weinberger (director), Wulf

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 386) tab.

**Core Courses**

**General Linguistics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 306</td>
<td>General Linguistics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

**Syntactic Theory, Phonological Theory, or Linguistic Semantics**

Select one course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 486</td>
<td>Syntax I</td>
<td>3</td>
</tr>
<tr>
<td>LING 490</td>
<td>Generative Phonology</td>
<td></td>
</tr>
<tr>
<td>LING 485</td>
<td>Semantics and Pragmatics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3

**Electives**

Select three from the following: 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any LING course (p. 1896)</td>
<td>9</td>
</tr>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>FRLN 380</td>
<td>Topics in the Sociopolitics of Language</td>
<td></td>
</tr>
<tr>
<td>FRLN 385</td>
<td>Multilingualism, Identity, and Power (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any foreign language course beyond 202 (p. 424)</td>
<td></td>
</tr>
</tbody>
</table>

**Linguistics, PhD**

Banner Code: LA-PHD-LING

**Academic Advising**

B413 Robinson Hall
Fairfax Campus

Email: english@gmu.edu
Website: english.gmu.edu/programs/la-phd-ling

The PhD in linguistics trains students in the science of language. Students become specialists in the core areas of linguistics—phonology, syntax, and semantics—and learn to integrate this core with the study of second language acquisition. The program prepares students for positions in academia, industry, government, and a host of organizations concerned with language and second language acquisition. Graduates may become research and teaching professors, administrators of language-learning programs, and consultants in computational linguistic research.

**Admissions**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

For specific information, see Application Requirements and Deadlines (http://linguistics.gmu.edu/programs/application/LA-PHD-LING).

**Policies**

For policies governing all graduate degrees, see Graduate Policies (p. 90).

**Reduction of Credit**

For students entering the doctoral program with a master’s degree, the number of required credits may be reduced by a maximum of 30 credits, subject to approval of the program faculty and the dean. Requests for reduction of credit are reviewed only after acceptance to the doctoral program.

**Requirements**

**Degree Requirements**

Total credits: 72

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 386) tab.

**Core Courses**

**Phonology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 690</td>
<td>Generative Phonology</td>
<td>3</td>
</tr>
<tr>
<td>LING 692</td>
<td>Phonology II</td>
<td>3</td>
</tr>
<tr>
<td>LING 890</td>
<td>Advanced Phonology Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

**Syntax**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 786</td>
<td>Syntax I</td>
<td>3</td>
</tr>
</tbody>
</table>
LING 787 Syntax II 3
LING 886 Advanced Syntax Seminar 3

Semantics/Pragmatics
LING 785 Semantics and Pragmatics 3
LING 788 Semantics and Pragmatics II 3

Language Acquisition
Select two courses from the following: 6
LING 582 Second Language Acquisition
LING 782 Second Language Acquisition II
LING 882 Seminar in Language Acquisition

Research Methodology
LING 770 Research Methods 3

Qualifying Papers
LING 898 Advanced Qualifying Seminar (Students register for this course twice) 6

Total Credits 39

Two Seminars

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 882</td>
<td>Seminar in Language Acquisition</td>
<td>6</td>
</tr>
<tr>
<td>LING 886</td>
<td>Advanced Syntax Seminar</td>
<td></td>
</tr>
<tr>
<td>LING 890</td>
<td>Advanced Phonology Seminar</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

1 Students take two seminar courses in two chosen fields. Seminar topics change every time they are offered. They may be repeated for credit.

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 507</td>
<td>Field Work in Applied Linguistics</td>
<td></td>
</tr>
<tr>
<td>LING 521</td>
<td>Applied Linguistics: Teaching English as a Second Language</td>
<td></td>
</tr>
<tr>
<td>LING 522</td>
<td>Modern English Grammar</td>
<td></td>
</tr>
<tr>
<td>LING 523</td>
<td>English Phonetics</td>
<td></td>
</tr>
<tr>
<td>LING 525</td>
<td>Practicum in ESL</td>
<td></td>
</tr>
<tr>
<td>LING 580</td>
<td>First Language Acquisition</td>
<td></td>
</tr>
<tr>
<td>LING 581</td>
<td>Psycholinguistics</td>
<td></td>
</tr>
<tr>
<td>LING 650</td>
<td>Introduction to Sociolinguistics</td>
<td></td>
</tr>
<tr>
<td>LING 691</td>
<td>Theories of Language</td>
<td></td>
</tr>
<tr>
<td>LING 798</td>
<td>Directed Reading and Research</td>
<td></td>
</tr>
<tr>
<td>ENGH 592</td>
<td>Historical Studies of the English Language</td>
<td></td>
</tr>
<tr>
<td>FREN 575</td>
<td>Grammatical Analysis</td>
<td></td>
</tr>
<tr>
<td>FRLN 565</td>
<td>Theory of Translation</td>
<td></td>
</tr>
<tr>
<td>SOCI 636</td>
<td>Statistical Reasoning</td>
<td></td>
</tr>
<tr>
<td>SPAN 500</td>
<td>History of the Spanish Language</td>
<td></td>
</tr>
<tr>
<td>SPAN 501</td>
<td>Applied Spanish Grammar</td>
<td></td>
</tr>
<tr>
<td>SPAN 502</td>
<td>Hispanic Sociolinguistics</td>
<td></td>
</tr>
<tr>
<td>PSYC 615</td>
<td>Language Development</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

Advancement to Candidacy
To advance to candidacy, students must complete all coursework required on their approved program of study. Students must also successfully pass a written qualifying exam and an oral qualifying exam. In addition, students must have a dissertation committee appointed by the Dean’s Office as well as an approved proposal. Evidence of the approved proposal must be on file in the Dean’s Office before a student can advance to candidacy.

Dissertation
Once enrolled in LING 999 Doctoral Dissertation, students must follow the university’s continuous registration policy as specified in AP.6.10.6 Dissertation Research (p. 98). Students who defend in the summer must be registered for at least 1 credit of LING 999 Doctoral Dissertation.

Students apply to this degree a minimum of 12 dissertation credits (LING 998 Doctoral Dissertation Proposal and LING 999 Doctoral Dissertation combined) with at least 3 credits of LING 999 Doctoral Dissertation. Because of the continuous registration policy, students may be required to register for additional credits of these courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>12</td>
</tr>
<tr>
<td>LING 999</td>
<td>Doctoral Dissertation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

Native American and Indigenous Studies Minor

Banner Code: NAIS

Academic Advising

B413 Robinson Hall
Fairfax Campus

Website: english.gmu.edu/programs/la-minor-la-nais

Native American and indigenous studies is an interdisciplinary field of study committed to understanding both the unity and the diversity of present and past Native American tribes, cultures, and experiences. This interdisciplinary minor will help students think critically and respectfully about the complex dynamics of Native American cultures, considered both individually and comparatively. In addition to practicing and developing critical thinking and writing skills, students in this interdisciplinary minor will learn how value systems operate in different cultures, examine the roots of conflict and resolution across a broad historical and cultural spectrum, better understand the importance
of language as a means of cultural expression, and heighten their appreciation of the unique status of present-day Native American tribes as nations with certain sovereign powers within the boundaries of the United States.

In addition to a required course that introduces key concepts, events, figures, and methodological approaches, students take five 3-credit elective courses from no fewer than three departments. The coursework for this minor enables students to examine Native American cultures from a variety of disciplinary perspectives, including those that are anthropological, historical, artistic, philosophical, and political.

Faculty
Anderson (coordinator), Benitez, Bristol, Karush, Scully, Snead, Tichy, Yocom

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP5.3.4 Minors (p. 90).

No more than two courses from a single department can be applied to the minor. No more than 3 credits can be applied to both Mason Core (p. 142) requirements and the minor.

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 388) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAIS 201</td>
<td>Introduction to Native American and Indigenous Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Electives

Select five electives (15 credits) from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 399</td>
<td>Issues in Anthropology (with permission of coordinator)</td>
<td></td>
</tr>
<tr>
<td>ENGH 315</td>
<td>Folklore and Folklife</td>
<td></td>
</tr>
<tr>
<td>ENGH 484</td>
<td>RS: Writing Ethnography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 391</td>
<td>History of Virginia to 1800</td>
<td></td>
</tr>
<tr>
<td>HIST 401</td>
<td>Colonial America</td>
<td></td>
</tr>
<tr>
<td>HIST 403</td>
<td>Revolutionary Era in American History, 1763-1812</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

1 Special topics courses and summer field work offerings, when relevant, may be used to fulfill elective credits for the minor with prior written approval of the NAIS coordinator.

Professional Writing and Editing Graduate Certificate (ENGL)
Banner Code: LA-CERG-PWE

Academic Advising
B413 Robinson Hall
Fairfax Campus

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

Policies
For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 94).

Concentration in Professional and Technical Writing
This concentration in the graduate certificate in professional writing and editing may be pursued concurrently with any of several programs in English and elsewhere. Part of the coursework toward the concentration may be applied to those degrees with the approval of the director of the degree program. Students pursuing the certificate in professional and technical writing must complete 18 credits of English graduate courses with a minimum grade of 3.00 in each course.

Concentration in Science Communication
All course choices included in this concentration must be approved by the Department of Communication. Students pursuing the graduate certificate in professional writing and editing with a concentration in science communication must complete 15 credits.

Requirements

Certificate Requirements
Total credits: 15 or 18

This certificate may be pursued on a full-or part-time basis.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies tab.
Students pursuing this graduate certificate must choose either a concentration in professional and technical writing or a concentration in science communication.

**Concentration in Professional and Technical Writing (PTW)**

This concentration in the graduate certificate in professional writing and editing may be pursued on a part-time basis only.

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 501</td>
<td>Introduction to Professional Writing and Rhetoric</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGH 502</td>
<td>Research Methods in Rhetoric and Professional Writing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGH 503</td>
<td>Theory and Practice of Editing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGH 505</td>
<td>Document Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

1. ENGH 501 Introduction to Professional Writing and Rhetoric should be taken in the first semester of study, if possible.

**Emphasis in Technical Writing or Proposal Writing**

<table>
<thead>
<tr>
<th>Emphasis in Technical Writing or Proposal Writing</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take courses from one of the following emphases:</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Technical Writing Emphasis</td>
<td>ENGH 613</td>
<td>Technical Communication</td>
<td></td>
</tr>
<tr>
<td>Select one elective ENGH course (3 credits) chosen in consultation with an advisor (p. 1637)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposal Writing Emphasis</td>
<td>ENGH 509</td>
<td>Proposal Writing and Development</td>
<td></td>
</tr>
<tr>
<td>ENGH 689</td>
<td>Advanced Proposal Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Concentration in Science Communication (SCMN)**

This concentration in the graduate certificate in professional writing and editing may be pursued on a full- or part-time basis.

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 639</td>
<td>Science Communication</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two courses in STEM, Health Sciences, or Science Policy</td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

1. These courses should be chosen from any STEM, health sciences, or science policy discipline. Both courses must be from the same discipline and must be graduate level. Choices must be approved by the program director. Students should select from 500- or 600-level courses offered by CHSS (p. 305), COS (p. 613), CHHS (p. 244), Schar (p. 961), or CEHD (p. 161).

**Teaching English as a Second Language Minor**

**Banner Code**: TESL

**Academic Advising**

B413 Robinson Hall
Fairfax Campus
Website: english.gmu.edu/programs/la-minor-engl-tesl

This minor helps prepare undergraduate students to teach non-native speakers of English in the United States or abroad. This course of study combines linguistic theory, second language acquisition theory, and ESL teaching methodology.

The minor may be pursued concurrently with any undergraduate major. English majors concentrating in linguistics can apply up to nine credits in LING used for the major to the TESL minor.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 389) tab.

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 306</td>
<td>General Linguistics (Mason Core) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LING 307</td>
<td>English Grammar</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LING 521</td>
<td>Applied Linguistics: Teaching English as a Second Language</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LING 523</td>
<td>English Phonetics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LING 582</td>
<td>Second Language Acquisition</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
Teaching English as a Second Language Graduate Certificate

Banner Code: LA-CERG-TESL

Academic Advising
B413 Robinson Hall
Fairfax Campus
Website: english.gmu.edu/programs/la-cerg-tesl

The graduate certificate in teaching English as a second language (TESL) prepares students to teach non-native speakers of English in the United States or abroad. Certificate courses fulfill, in part, requirements for an endorsement in English as a second language to the Virginia state teaching credential. Students who want to earn this endorsement should consult with an advisor.

The certificate may be pursued concurrently with any of several degree programs offered through the College of Education and Human Development, the English Department, and the Modern and Classical Languages Department. Part of the coursework toward the certificate may be applied toward degrees in those departments.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Teaching_English_As_Second_Language/Gedt.html).

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the graduate certificate in teaching English as a second language, see Application Requirements and Deadlines (http://linguistics.gmu.edu/programs/LA-CERG-TESL/application).

Policies
Students pursuing this certificate must complete 18 credits, earning a minimum grade of 3.00 in each course.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements
Total credits: 18
This certificate may be pursued on a full-or part-time basis.
Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 390) tab.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 520</td>
<td>Introduction to Linguistics ¹</td>
<td>3</td>
</tr>
<tr>
<td>LING 521</td>
<td>Applied Linguistics: Teaching English as a Second Language</td>
<td>3</td>
</tr>
<tr>
<td>LING 522</td>
<td>Modern English Grammar</td>
<td>3</td>
</tr>
<tr>
<td>LING 523</td>
<td>English Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>LING 525</td>
<td>Practicum in ESL</td>
<td>3</td>
</tr>
<tr>
<td>LING 582</td>
<td>Second Language Acquisition</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

¹ This course may be waived if student is concurrently pursuing the English, MA with a concentration in linguistics.

Writing and Rhetoric, PhD

Banner Code: LA-PHD-WRTR

Academic Advising
B413 Robinson Hall
Fairfax Campus
Email: wrphd@gmu.edu
Website: http://english.gmu.edu/programs/la-phd-wrtr

The doctoral program in writing and rhetoric offers a curriculum that emphasizes theoretical, practical, and productive approaches to composition, professional writing, and public rhetoric. The program is built on the premise that writing and teaching in twenty-first century organizations require the rigorous, integrated study of rhetoric,
technology, pedagogy, culture, and research methodologies. In addition to our core curriculum, the program’s proximity to Washington, D.C. makes it uniquely situated to provide opportunities for research and internships that go beyond and enrich the student’s writing and rhetoric coursework.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Applicants to the PhD in writing and rhetoric must already have earned a master’s degree in a relevant field before being admitted to the program.

For further information specific to the PhD in writing and rhetoric, see Application Requirements and Deadlines [http://english.gmu.edu/programs/la-phd-wrtr/application] on the college website.

Policies

For policies governing all graduate degrees, see Graduate Policies (p. 90).

Reduction of Credit

Students must have a master’s degree before being admitted to the PhD in writing and rhetoric. Most students receive a reduction of study of 30 credits based on their previous master's degree.

Program Requirements

To receive the PhD in writing and rhetoric, students complete a minimum of 78 credits of coursework, 48 beyond the master’s degree. Beyond the basic coursework, a dissertation is required.

Requirements

Degree Requirements

Total credits: 78

Doctoral Coursework

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 720</td>
<td>Histories of Institutional Rhetorics</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 722</td>
<td>Composition Pedagogies and Programs in Context</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 724</td>
<td>Professional Writing Theory and Research</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 726</td>
<td>Rhetorical Theory and Public Spaces</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Required Research Methods Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 702</td>
<td>Research Methods in Rhetoric and Writing</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Primary Focus Area

With a faculty advisor, students complete any combination of the following courses totaling 12 credits. The selected courses should form a consistent area of research around a specific object, practice, method, set of theories, or sub-field.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 820</td>
<td>Studies in Rhetorical Theory and Practice</td>
<td>12</td>
</tr>
<tr>
<td>ENGH 822</td>
<td>Studies in Composition</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 824</td>
<td>Studies in Professional Writing</td>
<td>1</td>
</tr>
<tr>
<td>ENGH 826</td>
<td>Studies in Public Rhetorics</td>
<td>1</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

1 May be repeated up to four times when topic differs.

Secondary Focus Area

The selected courses form a consistent secondary area of research that supports the student’s primary area and developing research interests. It is strongly suggested that the secondary focus courses be taken in other programs or disciplines.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 720</td>
<td>Histories of Institutional Rhetorics</td>
<td></td>
</tr>
<tr>
<td>ENGH 722</td>
<td>Composition Pedagogies and Programs in Context</td>
<td></td>
</tr>
<tr>
<td>ENGH 724</td>
<td>Professional Writing Theory and Research</td>
<td></td>
</tr>
<tr>
<td>ENGH 726</td>
<td>Rhetorical Theory and Public Spaces</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

Electives

Students receiving a reduction of credit of less than 30 will complete the remaining credits through additional elective courses chosen in consultation with an advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Credits</td>
<td></td>
<td>0-30</td>
</tr>
</tbody>
</table>

Advancement to Candidacy

Prior to beginning dissertation research (normally after completion of 66 hours of coursework), students will take a written examination, successful completion of which will demonstrate a qualification for advancement to candidacy. The examination will cover foundation knowledge acquired in the writing and rhetoric core courses and in the student’s area of primary focus.

Dissertation

The dissertation process, which begins after the student has completed 66 credit hours and passed the written qualifying exam, includes an oral exam on the dissertation proposal, the production of the dissertation, and an oral defense of the dissertation. The student’s progress at all stages will be evaluated by the dissertation committee. The dissertation should
use theoretical, historical, qualitative, and/or quantitative methods to address a rhetorical problem within an institutional or public context that is framed within a disciplinary field. While these projects are often multidisciplinary in approach, they should address a gap in a discipline’s research as well as solve a public rhetorical problem.

Once enrolled in ENGH 998 Doctoral Dissertation Proposal, students in this degree program must maintain continuous registration in ENGH 998 Doctoral Dissertation Proposal or ENGH 999 Doctoral Dissertation each semester (excluding summers) until the dissertation is submitted to and accepted by the University Libraries. Once enrolled in ENGH 999 Doctoral Dissertation, students must follow the university’s continuous registration policy as specified in the Academic Policies section of the catalog. Students who defend in the summer must be registered for at least 1 credit of ENGH 999 Doctoral Dissertation.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 998</td>
<td>Doctoral Dissertation Proposal (3 credits required)</td>
<td>3</td>
</tr>
<tr>
<td>At least 3 credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGH 999</td>
<td>Doctoral Dissertation (minimum of 9 credits)</td>
<td>9</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

### Department of History and Art History

B359 Robinson Hall  
Fairfax Campus  
Phone: 703-993-1250  
Website: historyarthistory.gmu.edu

The department offers a number of degree programs, including undergraduate majors and minors in both history and art history, traditional and accelerated master of arts programs in both history and art history, and a doctoral degree in history. Additional programs include a dual master of arts in art history and arts management, and a graduate certificate in digital public humanities. The department coordinates the ancient mediterranean art and archaeology minor (p. 393). The minor in sport and American culture (p. 238) is offered jointly by the Department of History and Art History and the School of Recreation, Health and Tourism.

### Undergraduate Programs

#### History

Students in the bachelor of arts in history study a variety of places, from Africa to Asia to the Americas, Europe, and the Middle East, and historical time periods, from Greek and Roman antiquity to the late twentieth-century. They learn to interpret and evaluate the past by analyzing a variety of sources, from historical books and novels to images, films, oral interviews, newspapers, and other texts.

History majors have the opportunity to study with faculty who are internationally known for their work on the use of technology in the study of history. They can do an internship with one of them in the Center for History and New Media or at places like the Smithsonian Institution, the Library of Congress, or one of many other institutions in the Washington, D.C. area. There are also many opportunities to study abroad while earning credit towards the history major.

#### Advising

Students majoring or minoring in history are advised by the undergraduate director and a team of faculty advisors. History majors are urged to discuss their program of study periodically with the director.

### Bachelor’s/Accelerated Master’s Programs

#### History, MA

The department offers highly qualified undergraduate majors in history the opportunity to apply to an accelerated master’s degree program in history. If accepted, students will be able to earn both the undergraduate and graduate degrees after satisfactory completion of 144 credits. The BA and MA earned separately require 120 and 30 credits respectively.

#### MEd in Curriculum and Instruction (concentration in secondary education history and social science)

The Department of History and Art History (p. 392) and the Graduate School of Education (p. 162) jointly offer an accelerated MEd option (p. 183) for history majors. A BA in History and an MEd in Curriculum and Instruction with a concentration in secondary education history and social science can be earned after satisfactory completion of 149 credits.

### Graduate Programs

#### History

The department offers a master’s and a doctoral degree in history. In both programs, students select a specialization in American history, European history, or world history. Master’s degree students choose from one of five concentrations: predoctoral history, applied history, enrichment, higher education, or teaching. Doctoral students focus their studies in one of four areas: college/university teaching, new media and information technology, public and applied history, or preprofessional development.

Graduate students in history have the opportunity to take courses in new media, studying with faculty who are internationally known for their use of technology in the study of history. Many students work alongside the faculty in the Center for History and New Media (https://rrchnm.org), a leader in the use of digital media and computer technology to democratize history. The center uses digital media and technology to preserve and present history online, transform scholarship across the humanities, and advance historical education and understanding.

Students can do an internship in applied history at one of the many institutions in the Washington, D.C. area or study abroad while earning credit towards their degrees.

#### Art History

The department offers a richly interdisciplinary master’s degree in art history. It draws on faculty strengths in traditional research and new media and the vast cultural resources of the Washington, D.C. area. Students learn methods of art historical analysis, a variety of art historical interpretations, and practical applications of the field. The program places a special emphasis on the development of skills in new
media, museology, and pre-professional internships - program features that are unique to this region.

The master’s degree in art history is designed to meet the needs of a student population with diverse interests and career goals. Because of the focus on skill building in traditional research as well as new media, graduates of this program have the tools necessary for independent research, professional work, and the dissemination of knowledge in art history.

**Funding**

The department offers teaching and research assistantships, which are awarded on a competitive basis. Other sources of funding such as grants, loans, and employment on campus are also available. Students awarded assistantships must register for a minimum of six credits a semester and show satisfactory progress toward their degree.

### Faculty

#### Department Faculty

**Professor Emeriti**

**History:** Bakhash, J.T. Censer, Deshmukh, ffolliot, Henriques, Holt, Horton, Jensen, Lytton, Petrik, Wade  
**Art History:** Butler, Mattusch, Todd

**Robinson Professors**

**History:** Crew  
**Art History:** Hinton

**Professors**

**History:** Karush, Kelly, Kierner, Landsberg, O'Malley, Ritterhouse, Robertson, Schrag, Sherwin, Smith, Stearns, Zagarri  
**Art History:** DeCaroli, Greet

**Associate Professors**

**History:** Barnes, Bristol, Carton, Chang, Collins, Copelman, Genetin-Pilawa, Hamdani, Hammer, Hooper, Jordan, Lair, Lebovic, Manuel-Scott, Mullen, Pichichero, Platt (chair), Scully, Takats, Yilmaz  
**Art History:** Ho

**Assistant Professors**

**History:** Park  
**Art History:** Schuman, Williamson

**Affiliate Faculty**

**History:** D’Amico, Ferreiro, Harris-Scott, Oberle, Wiggins

**Term Faculty**

**History:** Elzey, McCord, Orens, Schulze, Staklo  
**Art History:** Bauman, Gregg, McGuire

### Programs

- Ancient Mediterranean Art and Archaeology Minor  
- Art History Minor  
- History, BA  
- History, MA  
- History, PhD  
- Sport and American Culture Minor (CHSS)

### Ancient Mediterranean Art and Archaeology Minor

**Banner Code:** ARTM  
**Academic Advising**  
B359 Robinson Hall  
Fairfax Campus  
Website: historyarthistory.gmu.edu/programs/la-minor-la-artm

This interdisciplinary minor is for students with diverse interests in the material culture of the ancient world. Coursework combines the study of archaeology, literature, art, history, philosophy, myth, and religion. The scope of the minor is not limited to Greece and Rome but touches on all the ancient civilizations of the Mediterranean and the heirs of late antiquity such as Byzantium and early Islam.

The minor represents foundation work crucial to graduate study in traditional departments of classical, near Eastern, or Mediterranean art and archaeology. Through this minor, students are given credit for acquiring practical linguistic skills and archaeological field experience as well as scholarly background. Students should consult with the director for help in choosing a program of study that will complement their major.

**Faculty**

Cherubin, Gregg, Williamson (coordinator), Winkler

### Admissions & Policies

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements

**Total credits:** 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 393) tab.

Of the 18 credits required for the minor, at least 3 credits must be taken in ARTH and at least 9 credits must be taken outside of ARTH.

#### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one course (3 credits) from one of the following options:</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Option 1:</strong> A course in Classical Greek:</td>
<td></td>
</tr>
</tbody>
</table>


Art History, BA

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREE 150</td>
<td>Classical Greek I</td>
<td></td>
</tr>
<tr>
<td>GREE 160</td>
<td>Classical Greek II</td>
<td></td>
</tr>
</tbody>
</table>

Option 2: A course in Ancient Literature:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 102</td>
<td>Symbols and Stories in Art (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CLAS 250</td>
<td>Classical Mythology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CLAS 260</td>
<td>The Legacy of Greece and Rome (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Option 3: A course in Latin or a modern research language:

Select a course in any relevant language beyond the language requirement for the BA in the College of Humanities and Social Sciences (p. 424)

Total Credits 3

1 For information on how to complete this requirement, students should consult with the director of the minor.

Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 3 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 420</td>
<td>Advanced Studies in Ancient Art 1</td>
<td></td>
</tr>
<tr>
<td>ARTH 430</td>
<td>Advanced Studies in Medieval or Islamic Art 1</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

1 If topic pertains to region and period

Practicum

Students can also use archaeological field work done for credit to fulfill this requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 3-6 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 394</td>
<td>The Museum (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 322</td>
<td>Pirates, Conquest, and Death: Archaeology and Globalism since 1500</td>
<td></td>
</tr>
<tr>
<td>ARTH 393</td>
<td>Art History Internships 1</td>
<td></td>
</tr>
<tr>
<td>ANTH 325</td>
<td>Field Techniques in Archaeology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3-6

1 If content of internship pertains to region and period. Requires the prior written approval of the director.

Electives

Select two to three electives (6-9 credits) from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 324</td>
<td>Warfare, Violence, and Sacrifice in Antiquity</td>
<td></td>
</tr>
<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 321</td>
<td>Greek Art and Archaeology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 322</td>
<td>Roman Art and Archaeology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 324</td>
<td>From Alexander the Great to Cleopatra: The Hellenistic World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 333</td>
<td>Early Christian and Byzantine Art (Mason Core) (p. 142)</td>
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<tr>
<td>CLAS 340</td>
<td>Greek and Roman Epic (Mason Core) (p. 142)</td>
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<td>CLAS 350</td>
<td>Greek and Roman Tragedy (Mason Core) (p. 142)</td>
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<td>CLAS 360</td>
<td>Greek and Roman Comedy (Mason Core) (p. 142)</td>
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<td>CLAS 380</td>
<td>Greek and Roman Novels (Mason Core) (p. 142)</td>
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<tr>
<td>CLAS 390</td>
<td>Topics in Classical Literature and Culture</td>
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<tr>
<td>HIST 301</td>
<td>Classical Greece</td>
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<tr>
<td>HIST 302</td>
<td>Classical Rome</td>
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</tr>
<tr>
<td>PHIL 301</td>
<td>History of Western Philosophy: Ancient</td>
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</tr>
<tr>
<td>RELI 352</td>
<td>Judaism from Exile to Talmud</td>
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</tr>
<tr>
<td>RELI 381</td>
<td>Beginnings of Christianity</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6-9

1 Other courses pertaining to the region and period, including ARTH 399 Special Topics in the History of Art, may be used to fulfill this requirement with the prior written approval of the director.

Art History, BA

Banner Code: LA-BA-AH

B359 Robinson Hall
Fairfax Campus

Website: historyarthistory.gmu.edu/programs/la-ba-ah

Art History emphasizes the analysis of visual data in a historical context. Faculty expertise extends to many world regions—the United States, Latin America, Europe, the Mediterranean, South and Southeast Asia, China, and the Islamic world—and over all historical periods. Students apply what they learn through internship opportunities available in the Washington DC area, including the world-famous collections of the National Gallery of Art and the Smithsonian Institutions. Students go on to work in areas including museums, arts institutions, galleries, government and managerial positions. They also pursue further studies in fields including art history, library science, design technology, historic preservation, and fashion.

Admissions & Policies

Policies

Students pursuing this degree must complete 33 to 34 credits within the major, with a minimum GPA of 2.00. Up to 6 credits in art history internships may be applied toward ARTH requirements for the major, with permission of the art history undergraduate director. A maximum of 6
credits of ARTH 398 Study Abroad in the History of Art may be applied to
the major with permission of department.

For policies governing all undergraduate degrees, see AP.5 Undergraduate
Policies (p. 87).

Requirements

Degree Requirements
Total credits: minimum 120

Students should be aware of the specific policies associated with this
program, located on the Admissions & Policies (p. 394) tab.

All art history majors are encouraged to pursue internships in art history
(ARTH 393 Art History Internships) in their junior or senior year. Students
are strongly encouraged to participate in a study abroad program.

Students contemplating graduate study in art history should acquire
a reading knowledge of French, German, or other appropriate research
languages in consultation with an advisor.

Core Courses in the Major

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one survey course from the following:</td>
<td></td>
</tr>
<tr>
<td>ARTH 200</td>
<td>History of Western Art I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 201</td>
<td>History of Western Art II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 394</td>
<td>The Museum (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select five courses from ARTH courses at the 300 level (p. 1240)</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits: 21

1 In addition to ARTH (p. 1240) courses, art history majors may use
one 300-level HIST (p. 1818) course to fulfill this requirement.

Elective in the Major

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one elective from any art history course (p. 1240)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

Writing-Intensive Requirement

The university requires all students to complete at least one course
designated as "writing intensive" in their majors at the 300 level or
above. Students majoring in art history fulfill the university’s writing-
intensive requirement by successfully completing any 400-level ARTH
(p. 1240) course.

Additional Electives

Any remaining credits may be completed with elective courses to bring
the degree total to 120.

Upper Level Requirement

Students seeking a bachelor’s degree must apply at least 45 credits
of upper-level courses (numbered 300 or above) toward graduation
requirements.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA
degree must complete the coursework below. Except where expressly
prohibited, a course used to fulfill a college level requirement may also
be used simultaneously to satisfy other requirements (Mason Core
(p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Select 3 credits from the following:</td>
<td>3</td>
</tr>
<tr>
<td>PHIL  (p. 2044)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RELI (p. 2144)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Note that the following courses may not be used to fulfill this requirement:
• PHIL 323 Classical Western Political Theory
• PHIL 324 Modern Western Political Theory
• PHIL 327 Contemporary Western Political Theory
• PHIL 393 Humanities College to Career
• PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement) ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH (p. 1212)</td>
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<td></td>
</tr>
<tr>
<td>CRIM (p. 1514)</td>
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<tr>
<td>ECON (p. 1564)</td>
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<tr>
<td>GOVT (p. 1774)</td>
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<tr>
<td>HIST (p. 1818)</td>
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<tr>
<td>LING (p. 1896)</td>
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<td></td>
</tr>
<tr>
<td>PSYC (p. 2074)</td>
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<td></td>
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<tr>
<td>SOCI (p. 2167)</td>
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<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

| GGS 101 | Major World Regions (Mason Core) (p. 142) | 3 |
| GGS 103 | Human Geography (Mason Core) (p. 142) | 3 |
| GGS 110 | Introduction to Geoinformation Technologies | 3 |
| GGS 301 | Political Geography | 3 |
| GGS 303 | Geography of Resource Conservation (Mason Core) (p. 142) | 3 |
| GGS 304 | Population Geography (Mason Core) (p. 142) | 3 |
| GGS 305 | Economic Geography | 3 |
| GGS 306 | Urban Geography | 3 |
| GGS 315 | Geography of the United States | 3 |
| GGS 316 | Geography of Latin America | 3 |
| GGS 320 | Geography of Europe | 3 |
| GGS 325 | Geography of North Africa and the Middle East | 3 |
| GGS 330 | Geography of the Soviet Succession States | 3 |
| GGS 357 | Urban Planning | 3 |
| GGS 380 | Geography of Virginia | 3 |

¹ Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
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<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
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<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
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<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
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<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
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<td>ARTH 204</td>
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<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
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<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art (Mason Core)</td>
<td>3</td>
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<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core)</td>
<td>3</td>
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<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
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<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
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<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<td>Geography of the Soviet Succession States</td>
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<td>GOVT 328</td>
<td>Global Political Theory</td>
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<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
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<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
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<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>Rise of Russia (Mason Core) (p. 142)</td>
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<td>Modern Russia and the Soviet Union (Mason Core)</td>
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<td>History of Traditional China</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>History of South Africa (Mason Core) (p. 142)</td>
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<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
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<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
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<td>HIST 366</td>
<td>Comparative Slavery</td>
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<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
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<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
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<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
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<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
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<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
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<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
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<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
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<td>Religions of Asia (Mason Core) (p. 142)</td>
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<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
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<td>RELI 272</td>
<td>Islam</td>
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<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
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<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
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<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
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<td>RELI 337</td>
<td>Mysticism: East and West</td>
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<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
<td>3</td>
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<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
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<td>RELI 375</td>
<td>Qur'an and Hadith</td>
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<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
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<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
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</tbody>
</table>
A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
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<td>Written Communication (ENGH 101) (p. 142)</td>
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<td></td>
<td>Oral Communication (p. 142)</td>
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<td></td>
<td>Quantitative Reasoning (p. 143)</td>
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<td>Information Technology and Computing (p. 143)</td>
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<td></td>
<td><strong>Exploration Requirements</strong></td>
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<td>Arts (p. 144)</td>
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<td></td>
<td>Global Understanding (p. 146)</td>
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<td>Literature (p. 147)</td>
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<td>Natural Science (p. 148)</td>
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<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
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<td></td>
<td>Western Civilization/World History (p. 151)</td>
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<td><strong>Integration Requirements</strong></td>
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<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>40</td>
</tr>
</tbody>
</table>

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2. Minimum 3 credits required.

**Honors**

**Honors in the Major**

**Eligibility**

Majors who have completed 75 credits (a minimum of 15 credits in art history, with 6 credits taken at Mason) with an overall GPA of 3.50 and a GPA of 3.80 in art history are eligible to apply to graduate with honors in art history. Eligible students should apply to the undergraduate director by November 15 or April 15 with a statement of application including the names of two references from Mason art history faculty members. Transfer students should also submit transcripts. Not all applicants who meet the minimum requirements are guaranteed acceptance into honors in the major.

**Honors Requirements**

Students pursuing honors in the major complete ARTH 492 Honors Directed Readings and ARTH 493 Honors Directed Research, linked individualized courses that culminate in a research paper. Students must have completed at least one course in the field (or with the professor) chosen for these honors courses. ARTH 492 Honors Directed Readings should be taken before ARTH 493 Honors Directed Research, but they may be taken concurrently. To graduate with honors in the major, students must earn a minimum GPA of 3.50 in honors courses and a minimum GPA of 3.50 in art history courses applied to the degree. The two honors courses (6 credits) may be applied toward the requirement of 33- to 34-credits in art history, but they cannot replace the 6 required credits in the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 400</td>
<td>Historiography and Methods of Research in Art History (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>ARTH 420</td>
<td>Advanced Studies in Ancient Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 430</td>
<td>Advanced Studies in Medieval or Islamic Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 440</td>
<td>RS: Advanced Studies in Renaissance and Baroque Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 460</td>
<td>RS: Advanced Studies in 20th-Century European Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 471</td>
<td>Advanced Studies in Art of the United States</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 472</td>
<td>RS: Advanced Studies in 20th-Century Latin American Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 474</td>
<td>Advanced Studies in Contemporary Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 495</td>
<td>RS: Objects and Archives in Art History</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 499</td>
<td>Advanced Studies in Art History</td>
<td>3</td>
</tr>
</tbody>
</table>

**Accelerated Master’s**

The accelerated master’s program listed below specifies the BA in art history as a feeder degree for its program. It is important to note, however, that many accelerated master’s programs are available for any bachelor’s degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason. In addition, as a student with a BA in art history you may be particularly interested in the accelerated MA in art history (p. 401).

**Bachelor’s Degree (selected)/ Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)**

**Overview**

Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150
credits, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Selected Majors

- Art history (p. 394)
- Philosophy (p. 442)
- Conflict analysis and resolution (p. 936)
- Global affairs (p. 523)
- History (p. 402)
- Religious studies (p. 491)
- Russian and Eurasian studies (p. 568)
- Sociology (p. 507)
- Anthropology (p. 497)

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious studies (p. 496).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

Code | Title | Credits
--- | --- | ---
RELI 600 | Interdisciplinary Pathways in the Study of Religion | 6
RELI 630 | Theories and Methods in the Study of Religion | 6
RELI 632 | Interreligious Dialogue | 6
RELI 633 | Issues in Religious Ethics | 6
RELI 636 | Religion and the Natural Environment | 6
RELI 637 | Religion and Secularity in State and Society | 6

Total Credits 6

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td>6</td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td>6</td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td>6</td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Art History Minor

Banner Code: AH

Academic Advising

B359 Robinson Hall
Fairfax Campus

Website: historyarthistory.gmu.edu/programs/la-minor-hist-arth

This minor covers a broad spectrum of periods, cultures, and themes, with an emphasis on historical context.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. A maximum of 6 credits of ARTH 398 Study Abroad in the History of Art may be applied to the minor with permission of department.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 399) tab.
Students are strongly encouraged to participate in a study abroad program. ARTH 394 The Museum (Mason Core) (p. 142) is not required for the minor but is strongly encouraged.

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one to two 100- or 200-level courses in art history (p. 1240)</td>
<td></td>
<td></td>
<td>3-6</td>
</tr>
<tr>
<td>Select four to five 300- or 400-level courses in art history (p. 1240)</td>
<td></td>
<td></td>
<td>12-15</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

Art History, MA

Banner Code: LA-MA-AH

Academic Advising

B359 Robinson Hall
Fairfax Campus

Website: historyarthistory.gmu.edu/programs/la-ma-ah

Art history MA students combine traditional research with the application of new media, while accessing the opportunities offered through the cultural resources of the Washington, D.C. area. The program emphasizes new media skills, museum studies, and pre-professional internship training. Students study a broad range of art-historical periods, theory, and research methods. Faculty specialize in periods from ancient to contemporary, and in areas covering Europe, North and South America, Asia, and the Middle East. Graduates are well-prepared for art museum and gallery professional work, where a master’s degree is now routinely required, or for further study in doctoral programs.

Admissions & Policies

Admissions

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68) section of this catalog. For information specific to the MA in Art History, see Application Requirements and Deadlines (http://historyarthistory.gmu.edu/programs/la-ma-ah/application).

Policies

For policies governing all graduate degrees, see Graduate Policies (p. 90).

This program does not permit a reduction of credit based on a previously-conferred graduate degree.

Requirements

Degree Requirements

Total credits: 30

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 400) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 600</td>
<td>Methods and Research in Art History</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 601</td>
<td>Colloquium in Art History</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 599</td>
<td>Special Topics in Art History and the Decorative Arts</td>
<td>3</td>
</tr>
<tr>
<td>or ARTH 699</td>
<td>Topics in Art History</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Applied Preprofessional Learning

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 593</td>
<td>Internship in Art History and the Decorative Arts</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 594</td>
<td>The Museum</td>
<td>3</td>
</tr>
<tr>
<td>Other coursework approved by the program director</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

1 Students who enter the MA program through the accelerated MA option, and received credit for ARTH 394 The Museum (Mason Core) (p. 142) as an undergraduate, are expected to fulfill this requirement with an internship or alternate course rather than ARTH 594 The Museum.

Technology and New Media

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 696</td>
<td>Clio Wired: An Introduction to History and New Media</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 697</td>
<td>Creating History in New Media</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 680</td>
<td>Introduction to Digital Humanities</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select four to five electives</td>
<td></td>
<td>12-15</td>
</tr>
<tr>
<td>HIST courses (p. 1818)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH courses (p. 1240)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVT courses (p. 1250)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH courses (p. 1212)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CULT courses (p. 1526)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12-15</td>
</tr>
</tbody>
</table>

1 Students who choose to write a thesis complete 12 elective credits; others complete 15.

2 Students may choose electives in AVT, ANTH, or CULT with prior written permission of the graduate director.

Research Language Proficiency

Students must demonstrate reading ability in one relevant research language that must be approved by the graduate director. To meet this requirement, students must either achieve a satisfactory score on a proficiency exam or present coursework equivalent to a grade of B or
better in an intermediate-level foreign language course (202 or higher at George Mason).

**Written Comprehensive Exam**

Students who do not pass may retake the exam once, following the original process. The second exam must be taken within 12 months of the first exam.

**Optional Thesis**

Students who choose to write a thesis should be aware of the policies governing theses as stated in AP.6.9.3 Master’s Thesis (p. 95) policies. They must follow the thesis enrollment policy (p. 95) of the university and once enrolled in ARTH 799 Master’s Thesis, maintain continuous enrollment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>ARTH 799</em></td>
<td>Master's Thesis</td>
<td>3</td>
</tr>
</tbody>
</table>

**Accelerated Master’s**

**Bachelor’s Degree (any)/Art History, Accelerated MA**

**Application Requirements**

Highly qualified undergraduates in any major who have taken at least two 300-level art history courses with a minimum grade of B+ in each may apply to the accelerated master’s degree in art history. If accepted, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in art history after satisfactory completion of 144 credits, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MA in art history, see Application Requirements and Deadlines on the departmental web site.

**Accelerated Option Requirements**

Applicants accepted to the accelerated MA program must have completed 90 credits including two 300-level ARTH courses with a minimum grade of B+ in each.

While undergraduate students, accelerated master’s students complete two graduate courses (two ARTH 599 Special Topics in Art History and the Decorative Arts courses on different topics or one ARTH 599 Special Topics in Art History and the Decorative Arts and one ARTH 699 Topics in Art History course) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework and earn a grade of B or better (3.00 or higher) in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Digital Public Humanities Graduate Certificate**

**Banner Code: LA-CERG-DPH**

**Academic Advising**

B359 Robinson Hall
Fairfax Campus
Website: historyarthistory.gmu.edu/programs/la-cerg-dph

The graduate certificate in digital public humanities is a fully online program that trains students in a wide range of digital tools that are in increasingly high demand in humanities careers. Students will use these tools in developing their own digital projects, thus enhancing their professional portfolio. Students will also gain professional experience through an internship with the Smithsonian Institution, focused on applying skills learned from coursework. Internships will be coordinated remotely, allowing students to work from their locations.

**Admissions & Policies**

**Admissions**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admissions (p. 68). For information specific to the graduate certificate in cognitive neuroscience, see Application Requirements and Deadlines (http://historyarthistory.gmu.edu/programs/la-cerg-dph/application).

**Policies**

Students pursuing this certificate must complete 15 credits of history graduate courses with a minimum grade of 3.00 in each course.

For policies governing all certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

**Requirements**

**Certificate Requirements**

Total credits: 15
This certificate may be pursued on a part-time basis only.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 401) tab.

Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 680</td>
<td>Introduction to Digital Humanities</td>
<td>3</td>
</tr>
<tr>
<td>HIST 689</td>
<td>Teaching and Learning History in the Digital Age</td>
<td>3</td>
</tr>
<tr>
<td>HIST 694</td>
<td>Digital Public History</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

Internship Requirement

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST 794</td>
<td>Internship in Applied History</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

History, BA

Banner Code: LA-BA-HIST

B359 Robinson Hall
Fairfax Campus

Website: historyarthistory.gmu.edu/programs/la-ba-hist

The bachelor of arts in history looks at the range of human experience: how people have lived in the past, how they live and coexist in the present, and the links between the two. Students learn to interpret the past by examining a variety of original sources: newspapers, letters and diaries, literature, government records, images, films, oral interviews, and more. Majors hone their skills in collecting, interpreting, and communicating information. Majors move on to careers in government, law, and management, as well as teaching and graduate study.

Admissions & Policies

Policies

Students pursuing this degree must complete 36 credits within the major with at least 18 credits at the 300 and 400 levels. Additional credits of history in excess of 36 may be presented as elective credits to be counted toward graduation. Students must have a minimum GPA of 2.00 in courses applied to the major.

HIST 300 Introduction to Historical Method (Mason Core) (p. 142) and HIST 499 RS: Senior Seminar in History (Mason Core) (p. 142) may not be used to satisfy the geographic distribution requirements in U.S. history, European history, and global, Latin American, African, Asian, or Middle Eastern history. No more than 3 credits of ARTH coursework may apply to the History BA. For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 402) tab.

Before registering, students should see an advisor to help plan their history program to meet Mason Core (p. 142) and college-level requirements. The advisor also can help students choose electives or a minor.

Major without Concentration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 300</td>
<td>Introduction to Historical Method (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 499</td>
<td>RS: Senior Seminar in History (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

U.S. History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two courses from the following:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>HIST 121</td>
<td>Formation of the American Republic (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>HIST 122</td>
<td>Development of Modern America (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>HIST 331</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST 332</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST 333</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST 335</td>
<td>The African American Experience in the United States: African Background to 1885</td>
<td></td>
</tr>
<tr>
<td>HIST 336</td>
<td>The African American Experience in the United States: Reconstruction to the Present</td>
<td></td>
</tr>
<tr>
<td>HIST 337</td>
<td>Race and Gender in American Sports</td>
<td></td>
</tr>
<tr>
<td>HIST 338</td>
<td>History of College Athletics</td>
<td></td>
</tr>
<tr>
<td>HIST 339</td>
<td>History of Baseball</td>
<td></td>
</tr>
<tr>
<td>HIST 340</td>
<td>Basketball and the American Experience</td>
<td></td>
</tr>
<tr>
<td>HIST 341</td>
<td>History of Sport in the United States</td>
<td></td>
</tr>
<tr>
<td>HIST 342</td>
<td>History of the Olympics and the United States</td>
<td></td>
</tr>
<tr>
<td>HIST 350</td>
<td>U.S. Women’s History</td>
<td></td>
</tr>
<tr>
<td>HIST 351</td>
<td>History of the Old South</td>
<td></td>
</tr>
<tr>
<td>HIST 352</td>
<td>The South since 1865</td>
<td></td>
</tr>
<tr>
<td>HIST 370</td>
<td>War and American Society</td>
<td></td>
</tr>
<tr>
<td>HIST 373</td>
<td>The Civil War and Reconstruction</td>
<td></td>
</tr>
<tr>
<td>HIST 377</td>
<td>The Vietnam War</td>
<td></td>
</tr>
<tr>
<td>HIST 378</td>
<td>History of Aviation</td>
<td></td>
</tr>
<tr>
<td>HIST 380</td>
<td>Uncovering the U.S. Past Through Film</td>
<td></td>
</tr>
<tr>
<td>HIST 389</td>
<td>Topics in U.S. History</td>
<td></td>
</tr>
<tr>
<td>HIST 391</td>
<td>History of Virginia to 1800</td>
<td></td>
</tr>
<tr>
<td>HIST 392</td>
<td>History of Virginia Since 1800</td>
<td></td>
</tr>
</tbody>
</table>
HIST 401 Colonial America
HIST 403 Revolutionary Era in American History, 1763-1812
HIST 404 Jacksonian America, 1812-1854

Total Credits 6

### European History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 100</td>
<td>History of Western Civilization (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>HIST 101</td>
<td>Foundations of Western Civilization</td>
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<td>Development of Western Civilization</td>
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</tbody>
</table>

Total Credits 6

1 Used to fulfill the Mason Core requirement in Western civilization may also fulfill 3 credits of this requirement

### Global, Latin American, African, Asian, or Middle Eastern History

Approved courses in history used to fulfill the Mason Core requirement in global understanding and the college-level requirement in non-Western culture may be used to fulfill this requirement.

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<tr>
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<tr>
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<td>Freshman/Sophomore Seminar in Global History</td>
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<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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</tbody>
</table>

Total Credits 12

1 Students should choose courses in history at the 300 or 400 levels to meet this requirement if they need credits to complete the 18-credit, upper-level history requirement. In addition to HIST courses, history majors may use one 300-level ARTH course and HNRS 240 Reading the Past (Topic Varies) to fulfill this requirement.

### Electives in the Major

Students may also meet the elective requirement by completing an optional concentration.

<table>
<thead>
<tr>
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<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
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<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>HIST 359</td>
<td>Modern Iraq</td>
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<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
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<td>Comparative Slavery</td>
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<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
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<td>HIST 384</td>
<td>Global History of Christianity (Mason Core) (p. 142)</td>
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<tr>
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<td>Topics in Global History (Mason Core) (p. 142)</td>
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<td>HIST 394</td>
<td>Globalization and History</td>
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<td>HIST 460</td>
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<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
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<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
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Total Credits 12

### Major with Concentration

#### Available Concentrations

- Concentration in Digital History (HISD) (p. 404)
- Concentration in Public History (HISP) (p. 405)
• Concentration in Global History (HISG) (p. 406)
• Concentration in U.S. History (HISU) (p. 408)
• Individualized Concentration (IND) (p. 409)

**Concentration in Digital History (HISD)**

In this concentration, students explore and develop skills in using digital methods for the research, analysis, and presentation of history. Students interested in graduate education or careers in the digital humanities and new media or in working with digital methods in museums, archives, and other public history institutions should consider this concentration.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
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<tr>
<td>HIST 499</td>
<td>RS: Senior Seminar in History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 390</td>
<td>The Digital Past (Mason Core) (p. 142)</td>
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Select three electives with at least 6 credits in HIST from the following:

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<tbody>
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<td>Topics in Digital History</td>
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<tr>
<td>ENGH 375</td>
<td>Web Authoring and Design</td>
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<tr>
<td>ENGH 376</td>
<td>Rhetoric and New Media</td>
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<tr>
<td>INTS 345</td>
<td>Introduction to Multimedia (Mason Core) (p. 142)</td>
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</table>

Other coursework, including internships, approved by the program director.

Total Credits: 18

**U.S. History**

<table>
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<tr>
<td>HIST 122</td>
<td>Development of Modern America (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 331</td>
<td>The African American Experience in the United States: African Background to 1885</td>
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<tr>
<td>HIST 332</td>
<td>The African American Experience in the United States: Reconstruction to the Present</td>
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<tr>
<td>HIST 333</td>
<td>Race and Gender in American Sports</td>
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<tr>
<td>HIST 334</td>
<td>History of College Athletics</td>
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<td>HIST 340</td>
<td>Basketball and the American Experience</td>
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<td>HIST 341</td>
<td>History of Sport in the United States</td>
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<td>HIST 342</td>
<td>History of the Olympics and the United States</td>
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<td>HIST 350</td>
<td>U.S. Women's History</td>
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<td>HIST 351</td>
<td>History of the Old South</td>
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<td>HIST 352</td>
<td>The South since 1865</td>
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<td>HIST 370</td>
<td>War and American Society</td>
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<tr>
<td>HIST 373</td>
<td>The Civil War and Reconstruction</td>
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Total Credits: 6

**European History**

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<tr>
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<td>Foundations of Western Civilization</td>
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<td>Development of Western Civilization</td>
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<td>HIST 480</td>
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Total Credits: 6

1 Used to fulfill the Mason Core requirement in Western civilization may also fulfill 3 credits of this requirement

**Global, Latin American, African, Asian, or Middle Eastern History**

Approved courses in history used to fulfill the Mason Core requirement in global understanding and the college-level requirement in non-Western culture may be used to fulfill this requirement.

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</tbody>
</table>
Concentration in Public History (HISP)

In this concentration, students explore a variety of issues related to preserving historical materials and presenting historical information to a broader public. Students interested in graduate education in public history or in working in public history institutions such as museums, libraries, archives, and historic sites should consider this concentration.

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Select one elective from the following:

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<td>HIST 380</td>
<td>Uncovering the U.S. Past Through Film</td>
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<td>ARTH 394</td>
<td>The Museum (Mason Core) (p. 142)</td>
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<td>ENGH 370</td>
<td>Introduction to Documentary (Mason Core) (p. 142)</td>
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</table>

Other coursework, not including internships, approved by the program director.

Total Credits: 18

1 Students work individually with the department’s internship coordinator to find appropriate internships. HIST 399 may be repeated up to a maximum of 9 credits, and students in the public history concentration are encouraged to take more than 3 credits of internships, with additional credits beyond the first 3 counting as general electives.

### U.S. History

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### Core Courses

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<td>Jacksonian America, 1812-1854</td>
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**Total Credits 6**

### European History

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<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
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<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>HIST 359</td>
<td>Modern Iraq</td>
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<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td></td>
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<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 384</td>
<td>Global History of Christianity (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 394</td>
<td>Globalization and History</td>
<td></td>
</tr>
<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td></td>
</tr>
<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits 6**

### Concentration in Global History (HISG)

In this concentration, students explore the interconnected histories of major world regions beyond the United States and Europe. Students interested in graduate education in global history or careers in government or business or with non-governmental organizations or other employers operating in the international arena should consider this concentration. Students in the global history concentration are especially encouraged to study abroad as part of their undergraduate program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 125</td>
<td>Introduction to Historical Method (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 499</td>
<td>RS: Senior Seminar in History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 394</td>
<td>Globalization and History</td>
<td>3</td>
</tr>
</tbody>
</table>
Select five courses chosen from the following lists. Three of the five courses must be chosen from one of the following areas: Asian, African, Latin American, Middle Eastern and North African, or Russian and Central Asian history. No more than 3 credits of ARTH coursework may apply to the History BA.

### Asian History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

Other HIST coursework approved by the program director

- ARTH 203 Survey of Asian Art (Mason Core) (p. 142)
- ARTH 382 Arts of India (Mason Core) (p. 142)
- ARTH 383 Arts of Southeast Asia (Mason Core) (p. 142)
- ARTH 384 Arts of China (Mason Core) (p. 142)
- ARTH 385 Arts of Japan (Mason Core) (p. 142)

### African History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

Other HIST coursework approved by the program director

- ARTH 206 Survey of African Art (Mason Core) (p. 142)

### Latin American History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
</tr>
<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

Other HIST coursework approved by the program director

- ARTH 204 Survey of Latin American Art (Mason Core) (p. 142)

### Middle Eastern & North African History

### Russian & Central Asian History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 326</td>
<td>Stalinism</td>
</tr>
<tr>
<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

Other HIST coursework approved by the program director

- ARTH 386 The Silk Road (Mason Core) (p. 142)

### World History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 125</td>
<td>Introduction to World History (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 384</td>
<td>Global History of Christianity (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

Other HIST coursework approved by the program director

Optional foreign language skills development course in history

- HIST 386 Topics in History

Select four electives in history

Total Credits: 36

1 Depending on topic.
2 Working individually with their instructor for an upper-level HIST course, students may pursue historical reading or other work to develop skills in an appropriate foreign language in which they have already met the CHSS requirement for intermediate-level proficiency.
Students should choose courses in history at the 300- or 400-levels to meet this requirement if they need to complete the 18-credit, upper-level history requirement. In addition to HIST courses, students may apply HNRS 240 Reading the Past (Topic Varies) and/or one 300-level ARTH course not counted above toward this requirement. In total, no more than 3 credits of ARTH may be applied to the history BA.

**Concentration in U.S. History (HISU)**

In this concentration, students focus in-depth on the history of the United States while developing research and writing skills and completing at least one course in applied history. Students interested in law, government, and other career paths or in graduate education in U.S. history should consider this concentration.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 300</td>
<td>Introduction to Historical Method (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 499</td>
<td>RS: Senior Seminar in History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one applied history elective from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 390</td>
<td>The Digital Past (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 395</td>
<td>Topics in Digital History</td>
<td></td>
</tr>
<tr>
<td>HIST 396</td>
<td>Introduction to Public History</td>
<td></td>
</tr>
<tr>
<td>HIST 397</td>
<td>Topics in Public History</td>
<td></td>
</tr>
<tr>
<td>HIST 399</td>
<td>Internship</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

**U.S. History**

Select five U.S. history courses from the following, with at least two from each list. 15

**Origins to 1877**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 121</td>
<td>Formation of the American Republic (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 335</td>
<td>The African American Experience in the United States: African Background to 1885</td>
</tr>
<tr>
<td>HIST 350</td>
<td>U.S. Women's History</td>
</tr>
<tr>
<td>HIST 351</td>
<td>History of the Old South</td>
</tr>
<tr>
<td>HIST 370</td>
<td>War and American Society</td>
</tr>
<tr>
<td>HIST 373</td>
<td>The Civil War and Reconstruction</td>
</tr>
<tr>
<td>HIST 391</td>
<td>History of Virginia to 1800</td>
</tr>
<tr>
<td>HIST 401</td>
<td>Colonial America</td>
</tr>
<tr>
<td>HIST 403</td>
<td>Revolutionary Era in American History, 1763-1812</td>
</tr>
<tr>
<td>HIST 404</td>
<td>Jacksonian America, 1812-1854</td>
</tr>
<tr>
<td>HIST 389</td>
<td>Topics in U.S. History</td>
</tr>
</tbody>
</table>

**1877 - Present**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 122</td>
<td>Development of Modern America (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 331</td>
<td></td>
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<tr>
<td>HIST 332</td>
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<tr>
<td>HIST 333</td>
<td></td>
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</tbody>
</table>

Total Credits 15

1 When topic applies and with department approval.

**European History**

Select two courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>HIST 100</td>
<td>History of Western Civilization (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 101</td>
<td>Foundations of Western Civilization</td>
</tr>
<tr>
<td>HIST 102</td>
<td>Development of Western Civilization</td>
</tr>
<tr>
<td>HIST 301</td>
<td>Classical Greece</td>
</tr>
<tr>
<td>HIST 302</td>
<td>Classical Rome</td>
</tr>
<tr>
<td>HIST 304</td>
<td>Western Europe in the Middle Ages</td>
</tr>
<tr>
<td>HIST 305</td>
<td>The Renaissance</td>
</tr>
<tr>
<td>HIST 306</td>
<td>The Reformation</td>
</tr>
<tr>
<td>HIST 307</td>
<td>Old Regime and Revolutionary Europe</td>
</tr>
<tr>
<td>HIST 308</td>
<td>Nineteenth-Century Europe</td>
</tr>
<tr>
<td>HIST 309</td>
<td>Europe in Crisis: 1914-1948</td>
</tr>
<tr>
<td>HIST 312</td>
<td>Nationalism in Eastern Europe</td>
</tr>
<tr>
<td>HIST 314</td>
<td>History of Germany</td>
</tr>
<tr>
<td>HIST 322</td>
<td>Modern Britain</td>
</tr>
<tr>
<td>HIST 326</td>
<td>Stalinism</td>
</tr>
<tr>
<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>HIST 388</td>
<td>Topics in European History</td>
</tr>
<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
</tr>
<tr>
<td>HIST 436</td>
<td>European Society and Culture: 19th and 20th Centuries</td>
</tr>
</tbody>
</table>

Total Credits 6
Global, Latin American, African, Asian, or Middle Eastern History

Students in the concentration in U.S. History are encouraged to take at least one course with a broadly global perspective such as HIST 394 Globalization and History. Approved courses in history used to fulfill the Mason Core requirement in global understanding and the college-level requirement in non-Western culture may be used to fulfill this requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIST 125</td>
<td>Introduction to World History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 202</td>
<td>Freshman/Sophomore Seminar in Global History</td>
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<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
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<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>HIST 359</td>
<td>Modern Iraq</td>
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<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
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<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
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<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
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<td>HIST 366</td>
<td>Comparative Slavery</td>
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<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
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<tr>
<td>HIST 384</td>
<td>Global History of Christianity (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 394</td>
<td>Globalization and History</td>
<td></td>
</tr>
<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
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<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
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</tbody>
</table>

Individualized Concentration (IND)

Students who wish to design their own concentration must submit a one-page proposal and create a curriculum plan to be approved by the program director. This option may be particularly appropriate for students who want to focus on U.S. history or European history without emphasis on digital or public history methods.

All students in the individualized concentration will be required to complete HIST 300 Introduction to Historical Method (Mason Core) (p. 142), HIST 499 RS: Senior Seminar in History (Mason Core) (p. 142), and 15-18 credits of breadth requirements modeled on the geographic distribution coursework in the history BA without concentration. For their remaining 12-15 credits in history, students will work with the program director to plan coursework that explores their chosen concentration across time periods and geographical lines as appropriate.

Writing-Intensive Requirement

The university requires all students to complete at least one course designated as “writing intensive” in their majors at the 300 level or above. Students majoring in history may fulfill this requirement by successfully completing:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 300</td>
<td>Introduction to Historical Method (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 499</td>
<td>RS: Senior Seminar in History (Mason Core) (p. 142)</td>
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</tr>
</tbody>
</table>

Upper Level Requirement

Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RELI</td>
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</tbody>
</table>

Select 3 credits from the following:

- PHIL (p. 2044)
- RELI (p. 2144)
Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement) ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td>(p. 1212)</td>
<td>3</td>
</tr>
<tr>
<td>CRIM</td>
<td>(p. 1514)</td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td>(p. 1774)</td>
<td></td>
</tr>
<tr>
<td>HIST</td>
<td>(p. 1818)</td>
<td>²</td>
</tr>
<tr>
<td>LING</td>
<td>(p. 1896)</td>
<td></td>
</tr>
<tr>
<td>PSYC</td>
<td>(p. 2074)</td>
<td></td>
</tr>
<tr>
<td>SOCI</td>
<td>(p. 2167)</td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

- GGS 101 Major World Regions (Mason Core) (p. 142)
- GGS 103 Human Geography (Mason Core) (p. 142)
- GGS 110 Introduction to Geoinformation Technologies
- GGS 301 Political Geography
- GGS 303 Geography of Resource Conservation (Mason Core) (p. 142)
- GGS 304 Population Geography (Mason Core) (p. 142)
- GGS 305 Economic Geography
- GGS 306 Urban Geography
- GGS 315 Geography of the United States
- GGS 316 Geography of Latin America
- GGS 320 Geography of Europe
- GGS 325 Geography of North Africa and the Middle East
- GGS 330 Geography of the Soviet Succession States
- GGS 357 Urban Planning
- GGS 380 Geography of Virginia

¹ The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

² HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

Foreign Language

Intermediate-level proficiency in one foreign language, fulfilled by: ¹

- Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)
- Or achieving a satisfactory score on an approved proficiency test
- Or completing the following ASL three course sequence:
  - EDSE 115 American Sign Language (ASL) I
  - EDSE 116 American Sign Language (ASL) II
  - EDSE 219 American Sign Language (ASL) III

¹ Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>ANTH</td>
<td>114 Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH</td>
<td>300 Civilizations</td>
<td>3</td>
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<tr>
<td>ANTH</td>
<td>302 Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>307 Ancient Mesoamerica (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH</td>
<td>308 Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH</td>
<td>309 Peoples and Cultures of India (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ANTH</td>
<td>313 Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH</td>
<td>314 Zombies</td>
<td>3</td>
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<tr>
<td>ANTH</td>
<td>330 Peoples and Cultures of Selected Regions: Non-Western</td>
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<tr>
<td>ANTH</td>
<td>332 Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH</td>
<td>381 Medical Anthropology</td>
<td>3</td>
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<td>ANTH</td>
<td>396 Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
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<tr>
<td>ARAB</td>
<td>360 Topics in Arabic Cultural Production</td>
<td>3</td>
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<td>ARAB</td>
<td>420 Survey of Arabic Literature</td>
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<td>ARAB</td>
<td>440 Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH</td>
<td>203 Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH</td>
<td>204 Survey of Latin American Art (Mason Core) (p. 142)</td>
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<td>ARTH</td>
<td>206 Survey of African Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH</td>
<td>318 Art and Archaeology of Ancient Egypt</td>
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<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
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<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td>3</td>
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<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
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<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>Geography of North Africa and the Middle East</td>
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<td>Geography of the Soviet Succession States</td>
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<td>GOVT 328</td>
<td>Global Political Theory</td>
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<td>Government and Politics of the Middle East and North Africa</td>
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<td>Government and Politics of Asia</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
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<td>Political Economy of East Asia</td>
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<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>HIST 325</td>
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<td>The Soviet Union and Russia Since World War II</td>
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<td>Rise of Russia (Mason Core) (p. 142)</td>
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<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
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<td>History of Traditional China</td>
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<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
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<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
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<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
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<td>HIST 366</td>
<td>Comparative Slavery</td>
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<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
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<td>Topics in Global History (Mason Core) (p. 142)</td>
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<td>HIST 426</td>
<td>The Russian Revolution</td>
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<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
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<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
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<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
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<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
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<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
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<td>KORE 320</td>
<td>Korean Popular Culture in a Global World (Mason Core)</td>
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<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
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<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
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<td>Religions of Asia (Mason Core) (p. 142)</td>
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<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
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<td>RELI 272</td>
<td>Islam</td>
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<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
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<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
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<td>Buddhism (Mason Core) (p. 142)</td>
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<td>RELI 337</td>
<td>Mysticism: East and West</td>
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<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
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<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
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<td>RELI 375</td>
<td>Qur'an and Hadith</td>
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<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
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<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
<td>3</td>
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</table>
Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
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<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td>3</td>
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</table>

1. A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Honors

Honors in the Major

History majors who have completed 75 credits (a minimum of 15 in history, 6 of which must have been taken at Mason) with an overall GPA of 3.50 and a GPA of 3.50 in history courses are eligible to apply to graduate with honors in history. Applicants must have completed or be enrolled in HIST 300 Introduction to Historical Method (Mason Core) (p. 142). The statement of application should include references from at least one Mason history faculty member. If a major part of the student’s work includes transfer credit, transcripts may be required.

Not all applicants who meet the minimum requirements are guaranteed acceptance into honors in the major.

Students pursuing honors in the major will take a two-semester course sequence: HIST 490 Honors Directed Readings and HIST 491 Honors Directed Research. HIST 490 Honors Directed Readings will focus on the design of a major research project and HIST 491 Honors Directed Research will focus on completing that project. To graduate with honors in the major, students must earn a minimum GPA of 3.50 in the honors courses and a minimum GPA of 3.50 in history courses applied to the degree. A grade of B or higher in HIST 490 Honors Directed Readings is required to proceed to HIST 491 Honors Directed Research. The two honors courses (6 credits) may be applied to the requirement of 36 credits in history and successful completion of HIST 491 Honors Directed Research satisfies the seminar course requirement in place of HIST 499 RS: Senior Seminar in History (Mason Core) (p. 142).

Accelerated Master’s

The accelerated master’s programs in the list below specify the BA in history as a feeder degree for their programs. It is important to note, however, that many accelerated master’s programs are available for any bachelor’s degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

History, BA/History, Accelerated MA Overview

Highly-qualified Mason undergraduates may apply to the accelerated master’s degree program and obtain both a BA (p. 402) and a MA in history (p. 416) after satisfactory completion of 144 credits. The BA (p. 402) and MA (p. 416) earned separately require 120 and 30 credits respectively. If accepted into the program, they must have completed 90 credits including HIST 300 Introduction to Historical Method (Mason Core) (p. 142) with a minimum grade of B+ before they can enter the program.

Interested students should contact the Director of Undergraduate Programs for details about the application process.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in history, see Application Requirements and Deadlines (http://historyarthistory.gmu.edu/programs/la-ma-acel-hist/application) on the departmental web site.

Accelerated Option Requirements

Applicants accepted to the accelerated MA program must have completed 90 credits including HIST 300 Introduction to Historical Method (Mason Core) (p. 142) with a minimum grade of B+ as a condition to entry into the program.

While undergraduate students, accelerated master’s students complete two graduate courses (HIST 610 The Study and Writing of History and one additional 3 credit HIST course at the 500-level or 600-level),
as indicated on their Accelerated Master’s Program Application, with a minimum grade of B in each course. These credits cannot replace HIST 499 RS: Senior Seminar in History (Mason Core) (p. 142). Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework and earn a B or better (3.00 or higher) in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional credits of HIST courses at the 500-level or 600-level as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP 1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

History, BA / Curriculum and Instruction, Accelerated MEd (Secondary Education History and Social Science Concentration)

Overview

Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BA in History (p. 402) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education history and social science) in an accelerated time-frame after satisfactory completion of 149 credits. See AP 6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of History and Art History (p. 392) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program) on the College of Education and Human Development web site.

Accelerated Option Requirements

Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
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<tbody>
<tr>
<td>Fall Semester</td>
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<tr>
<td>EDCI 567</td>
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<tr>
<td>EDUC 672</td>
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</tbody>
</table>

Total Credits 12

Bachelor’s Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)

Overview

Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Selected Majors

- Art history (p. 394)
- Philosophy (p. 442)
- Conflict analysis and resolution (p. 936)
- Global affairs (p. 523)
- History (p. 402)
- Religious studies (p. 491)
- Russian and Eurasian studies (p. 568)
- Sociology (p. 507)
- Anthropology (p. 497)

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious study (p. 496).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.
INTERDISCIPLINARY PATHWAYS IN THE STUDY OF RELIGION

Overview

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master’s in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

SELECTED MAJORS

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

APPLICATION REQUIREMENTS

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 69). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

ACCELERATED OPTION REQUIREMENTS

While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, the Bachelor’s/ Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

RESERVE GRADUATE CREDIT

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

Code | Title | Credits
--- | --- | ---
RELI 600 | Interdisciplinary Pathways in the Study of Religion | 6
RELI 630 | Theories and Methods in the Study of Religion | 6
RELI 632 | Interreligious Dialogue | 6
RELI 633 | Issues in Religious Ethics | 6
RELI 636 | Religion and the Natural Environment | 6
RELI 637 | Religion and Secularity in State and Society | 6

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

BACHELOR’S DEGREE (SELECTED)/ INTERDISCIPLINARY STUDIES, ACCELERATED MAIS (SOCIAL JUSTICE AND HUMAN RIGHTS CONCENTRATION)

Overview

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master’s in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

SELECTED MAJORS

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

APPLICATION REQUIREMENTS

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 69). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

ACCELERATED OPTION REQUIREMENTS

While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, the Bachelor’s/ Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

RESERVE GRADUATE CREDIT

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

Code | Title | Credits
--- | --- | ---
RELI 600 | Interdisciplinary Pathways in the Study of Religion | 6
RELI 630 | Theories and Methods in the Study of Religion | 6
RELI 632 | Interreligious Dialogue | 6
RELI 633 | Issues in Religious Ethics | 6
RELI 636 | Religion and the Natural Environment | 6
RELI 637 | Religion and Secularity in State and Society | 6

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).
Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)

Overview
Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Selected Majors
Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td>3</td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td>3</td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP 1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

History Minor

Banner Code: HIST

Academic Advising
B359 Robinson Hall
Fairfax Campus
Website: historyarthistory.gmu.edu/programs/la-minor-hist-hist

The history minor allows majors in other disciplines to round out their education by completing a three-course concentration in the history of a world region and taking three additional history courses of their own choosing. History minors have opportunities to conduct independent research, engage in globally relevant activities through coursework and language study at Mason and abroad, and prepare for their future careers through internships and other college-to-career activities.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. Of the 18 credits applied to the minor, 12 credits must be at the 300 or 400-level.

For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 415) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Select three courses (9 credits) concentrated in a region or topic. (p. 402) 9

Total Credits 9
Students choose courses to meet this requirement that are concentrated in a region or topic. The region or topic should relate, if possible, to their major. Lists of courses, by region, can be found in the BA in history without concentration degree requirements (p. 402). Students should review their plan with the director of the minor.

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three electives (9 credits) in History (p. 1818)</td>
<td>9</td>
</tr>
</tbody>
</table>

In addition to HIST (p. 1818) courses, students may use HNRS 240 Reading the Past (Topic Varies) to fulfill this requirement.

**History, MA**

**Banner Code:** LA-MA-HIST

**Academic Advising**

B359 Robinson Hall
Fairfax Campus

Website: historyarthistory.gmu.edu/programs/la-ma-hist

The faculty in the master of arts History program are at the forefront of traditional historical study, digital approaches to the past, and applied history. Students select from a variety of course topics while also selecting an area of historical specialization that accommodates their interests and furthers their career objectives. Students come to the program with diverse career objectives, and the program is designed with that diversity in mind. Students take classes in which they discuss history alongside future academics, public historians, teachers, military officers, non-profit professionals, government officials, entrepreneurs, and future academics.

**Admissions & Policies**

**Admissions**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information, see Application Requirements and Deadlines (http://historyarthistory.gmu.edu/programs/application/LA-MA-HIST) on the departmental website.

**Policies**

For policies governing all graduate degrees, see Graduate Policies (p. 90).

**Reduction of Credit**

The program does not permit a reduction of credit based on a previously conferred graduate degree. Students may apply no more than 6 credits earned through study abroad courses toward their degree.

**Requirements**

**Degree Requirements**

Total credits: 30 or 36

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 416) tab.

Students pursuing this degree must complete the requirements for one of the concentrations below. The concentrations in higher education and teaching require 36 credits, all others require 30 credits.

**Concentrations**

- Concentration in Predoctoral History (AH1, EH1, WH1) (p. 416)
- Concentration in Applied History (AH2, EH2, WH2) (p. 417)
- Concentration in Applied History with New Media and Information Technology Emphasis (AH4, EH4, WH4) (p. 419)
- Concentration in Enrichment (AH3, EH3, WH3) (p. 420)
- Concentration in Higher Education (HEDU) (p. 421)
- Concentration in Teaching (HS4) (p. 422)

**Concentration in Predoctoral History (AH1, EH1, WH1)**

This concentration is for students planning to pursue doctoral studies. Students choose one of three geographic specializations and a chronological or thematic minor field within that specialization. Students complete coursework and a research seminar in their geographic specialization and an additional independent project or thesis in their minor field.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

Must be taken within the first 9 credits

**Specialization**

Students complete one of the following geographic specializations.

**Specialization in U.S. History**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select four courses from the following:</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

**Origins to 1861**

- HIST 613 The Colonial Origins of American Society
- HIST 618 The Age of Jackson, 1815-1854
- HIST 620 Development of the Early Republic, 1783-1815

**1861-1914**

- HIST 617 Topics in the American Civil War Era
- HIST 622 U.S. South Since 1865
- HIST 627 Disasters in U.S. History
- HIST 629 The Gilded Age and Progressive Era
- HIST 633 Reconstruction
- HIST 662 U.S. Religion since 1870
- HIST 615 Problems in American History (when topic applies and with department approval)

Other appropriate course with department approval
### 1914 World War I to the Present

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 622</td>
<td>U.S. South Since 1865</td>
<td></td>
</tr>
<tr>
<td>HIST 623</td>
<td>Recent U.S. History, 1945 to Present</td>
<td></td>
</tr>
<tr>
<td>HIST 627</td>
<td>Disasters in U.S. History</td>
<td></td>
</tr>
<tr>
<td>HIST 634</td>
<td>Interwar America: 1918-1939</td>
<td></td>
</tr>
<tr>
<td>HIST 662</td>
<td>U.S. Religion since 1870</td>
<td></td>
</tr>
<tr>
<td>HIST 677</td>
<td>The Vietnam War</td>
<td></td>
</tr>
<tr>
<td>HIST 615</td>
<td>Problems in American History (when topic applies and with department approval)</td>
<td></td>
</tr>
</tbody>
</table>

Other appropriate course with department approval

1 Select at least 3 credits from each group.

### Specialization in European History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select four courses from the following: 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Ancient, Medieval, Early Modern to 1789

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 576</td>
<td>The Crusades</td>
<td></td>
</tr>
<tr>
<td>HIST 642</td>
<td>Humanism and the Renaissance</td>
<td></td>
</tr>
<tr>
<td>HIST 643</td>
<td>Religion and Society in the Reformation Era</td>
<td></td>
</tr>
<tr>
<td>HIST 644</td>
<td>Society and Culture in Early Modern Europe</td>
<td></td>
</tr>
<tr>
<td>HIST 635</td>
<td>Problems in European History (when topic applies and with department approval)</td>
<td></td>
</tr>
</tbody>
</table>

Other appropriate course with department approval

#### 1789-1914

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 637</td>
<td>Great Britain: Empire to Commonwealth, 1870-1970</td>
<td></td>
</tr>
<tr>
<td>HIST 639</td>
<td>Society and Politics in Western Europe, 1750-1914</td>
<td></td>
</tr>
<tr>
<td>HIST 640</td>
<td>Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries</td>
<td></td>
</tr>
<tr>
<td>HIST 635</td>
<td>Problems in European History (when topic applies and with department approval)</td>
<td></td>
</tr>
</tbody>
</table>

Other appropriate course with department approval

#### 1914 to the Present

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 637</td>
<td>Great Britain: Empire to Commonwealth, 1870-1970</td>
<td></td>
</tr>
<tr>
<td>HIST 640</td>
<td>Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries</td>
<td></td>
</tr>
<tr>
<td>HIST 646</td>
<td>Stalinism</td>
<td></td>
</tr>
<tr>
<td>HIST 635</td>
<td>Problems in European History (when topic applies and with department approval)</td>
<td></td>
</tr>
</tbody>
</table>

Other appropriate course with department approval

1 Select at least 3 credits from each group.

### Specialization in World History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select four courses from the following: 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### World

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 510</td>
<td>Approaches to Modern World History</td>
<td></td>
</tr>
<tr>
<td>HIST 535</td>
<td>Problems in Comparative World History</td>
<td></td>
</tr>
<tr>
<td>HIST 565</td>
<td>Problems in African History</td>
<td></td>
</tr>
</tbody>
</table>

### Research Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 797</td>
<td>Research Seminar in History</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

### Minor Field Concentration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>In consultation with the graduate director and other faculty, students identify a chronological or topical subspecialty and select two courses that relate directly to that subspecialty.</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

### Language Proficiency

Language proficiency sufficient to conduct primary source research in the student’s intended area of concentration, as demonstrated by thesis or independent research project.

### Project or Thesis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits of Project or Thesis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Project and additional Elective

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 798</td>
<td>Directed Research and Writing in History 1</td>
<td>6</td>
</tr>
</tbody>
</table>

Additional 3 credits from Specialization

### Thesis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 799</td>
<td>Thesis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

1 Requires the completion of a major paper that is a substantial and original contribution to historical knowledge on the model of an article in a scholarly journal. If students choose to take , they complete an additional 3 credits in their specialization.

### Concentration in Applied History (AH2, EH2, WH2)

This concentration is for students seeking expertise in applied history fields, such as archival management, museum studies, historic preservation, and historical editing. It is also suitable for professionally employed historians who desire to further their careers.
### Required Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History ¹</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Must be taken within the first 9 credits

### Specialization

Students complete one of the following geographic specializations.

#### Specialization in U.S. History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four courses from the following: ¹</td>
<td>12</td>
</tr>
</tbody>
</table>

**Origins to 1861**

- HIST 613 | The Colonial Origins of American Society
- HIST 618 | The Age of Jackson, 1815-1854
- HIST 620 | Development of the Early Republic, 1783-1815
- HIST 627 | Disasters in U.S. History
- HIST 631 | Era of the American Revolution
- HIST 661 | Religion in North America to 1870
- HIST 615 | Problems in American History (when topic applies and with department approval)

Other appropriate course with department approval

**1861-1914**

- HIST 617 | Topics in the American Civil War Era
- HIST 622 | U.S. South Since 1865
- HIST 627 | Disasters in U.S. History
- HIST 629 | The Gilded Age and Progressive Era
- HIST 633 | Reconstruction
- HIST 662 | U.S. Religion since 1870
- HIST 615 | Problems in American History (when topic applies and with department approval)

Other appropriate course with department approval

**1914 World War I to the Present**

- HIST 622 | U.S. South Since 1865
- HIST 623 | Recent U.S. History, 1945 to Present
- HIST 627 | Disasters in U.S. History
- HIST 634 | Interwar America: 1918-1939
- HIST 662 | U.S. Religion since 1870
- HIST 677 | The Vietnam War
- HIST 615 | Problems in American History (when topic applies and with department approval)

Other appropriate course with department approval

¹ Select at least 3 credits from each group.

#### Specialization in European History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four courses from the following: ¹</td>
<td>12</td>
</tr>
</tbody>
</table>

**Ancient, Medieval, Early Modern to 1789**

- HIST 576 | The Crusades
- HIST 642 | Humanism and the Renaissance
- HIST 643 | Religion and Society in the Reformation Era

**1789-1914**

- HIST 637 | Great Britain: Empire to Commonwealth, 1870-1970
- HIST 639 | Society and Politics in Western Europe, 1750-1914
- HIST 640 | Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries
- HIST 635 | Problems in European History (when topic applies and with department approval)

Other appropriate course with department approval

**1914 to the Present**

- HIST 637 | Great Britain: Empire to Commonwealth, 1870-1970
- HIST 640 | Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries
- HIST 646 | Stalinism
- HIST 635 | Problems in European History (when topic applies and with department approval)

Other appropriate course with department approval

¹ Select at least 3 credits from each group.

#### Specialization in World History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four courses from the following: ¹</td>
<td>12</td>
</tr>
</tbody>
</table>

**World**

- HIST 510 | Approaches to Modern World History
- HIST 535 | Problems in Comparative World History

**Africa**

- HIST 565 | Problems in African History

Other appropriate course with department approval

**Asia**

- HIST 555 | Problems in Asian History

Other appropriate course with department approval

**Middle East**

- HIST 575 | Approaches to Middle East and Islamic History
- HIST 576 | The Crusades
- HIST 585 | Problems in Middle Eastern History

Other appropriate course with department approval

**Latin America**

- HIST 525 | Problems in Latin American History

Other appropriate course with department approval

¹ Select at least 3 credits from two regions.

### Research Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 797</td>
<td>Research Seminar in History</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3
Applied History
These include courses in historic preservation, museum studies, archives, historical editing, or new media and information technology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two to three courses from the following:</td>
<td>6-9</td>
</tr>
<tr>
<td>HIST 680</td>
<td>Introduction to Digital Humanities</td>
<td></td>
</tr>
<tr>
<td>HIST 685</td>
<td>Topics in Applied History</td>
<td></td>
</tr>
<tr>
<td>HIST 688</td>
<td>Topics in History and New Media</td>
<td></td>
</tr>
<tr>
<td>HIST 689</td>
<td>Teaching and Learning History in the Digital Age</td>
<td></td>
</tr>
<tr>
<td>HIST 690</td>
<td>The Administration of Archives and Manuscripts</td>
<td></td>
</tr>
<tr>
<td>HIST 691</td>
<td>Museum Studies</td>
<td></td>
</tr>
<tr>
<td>HIST 692</td>
<td>Historical Editing</td>
<td></td>
</tr>
<tr>
<td>HIST 693</td>
<td>Historic Preservation</td>
<td></td>
</tr>
<tr>
<td>HIST 694</td>
<td>Digital Public History</td>
<td></td>
</tr>
<tr>
<td>HIST 695</td>
<td>History Symposium</td>
<td></td>
</tr>
<tr>
<td>HIST 696</td>
<td>Clio Wired: An Introduction to History and New Media</td>
<td></td>
</tr>
<tr>
<td>HIST 697</td>
<td>Creating History in New Media</td>
<td></td>
</tr>
<tr>
<td>HIST 698</td>
<td>Programming in History and New Media</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other appropriate course with department approval</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6-9</td>
</tr>
</tbody>
</table>

Internship
If students chose to do a 3-credit internship, they will take an additional 3 credits in applied history course work from the list of courses above (HIST 680 - HIST 698).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 794</td>
<td>Internship in Applied History</td>
<td>3-6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3-6</td>
</tr>
</tbody>
</table>

Proficiency in a Relevant Research Tool
Students fulfill the requirement by completing one of the following:

- Coursework, work or internship experience, or exam in computers, statistics, or a modern foreign language.
- HIST 680 Introduction to Digital Humanities
- HIST 696 Clio Wired: An Introduction to History and New Media
- Other course by approval of department

Total Credits 6-9

Concentration in Applied History with New Media and Information Technology Emphasis (AH4, EH4, WH4)

Students pursuing this concentration take:

Required Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History ¹</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Must be taken within the first 9 credits

Specialization
Students complete one of the following geographic specializations.

Specialization in U.S. History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four courses from the following: ¹</td>
<td>12</td>
</tr>
</tbody>
</table>

Origins to 1861

- HIST 613 The Colonial Origins of American Society
- HIST 618 The Age of Jackson, 1815-1854
- HIST 620 Development of the Early Republic, 1783-1815
- HIST 627 Disasters in U.S. History
- HIST 631 Era of the American Revolution
- HIST 661 Religion in North America to 1870
- HIST 615 Problems in American History (when topic applies and with department approval)
- Other appropriate course with department approval

1861-1914

- HIST 617 Topics in the American Civil War Era
- HIST 622 U.S. South Since 1865
- HIST 627 Disasters in U.S. History
- HIST 629 The Gilded Age and Progressive Era
- HIST 633 Reconstruction
- HIST 662 U.S. Religion since 1870
- HIST 615 Problems in American History (when topic applies and with department approval)
- Other appropriate course with department approval

1914 World War I to the Present

- HIST 622 U.S. South Since 1865
- HIST 623 Recent U.S. History, 1945 to Present
- HIST 627 Disasters in U.S. History
- HIST 634 Interwar America: 1918-1939
- HIST 662 U.S. Religion since 1870
- HIST 677 The Vietnam War
- HIST 615 Problems in American History (when topic applies and with department approval)
- Other appropriate course with department approval

Ancient, Medieval, Early Modern to 1789

- HIST 576 The Crusades
- HIST 642 Humanism and the Renaissance
- HIST 643 Religion and Society in the Reformation Era
- HIST 644 Society and Culture in Early Modern Europe
- HIST 635 Problems in European History (when topic applies and with department approval)
- Other appropriate course with department approval

1789-1914
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 637</td>
<td>Great Britain: Empire to Commonwealth, 1870-1970</td>
<td></td>
</tr>
<tr>
<td>HIST 639</td>
<td>Society and Politics in Western Europe, 1750-1914</td>
<td></td>
</tr>
<tr>
<td>HIST 640</td>
<td>Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries</td>
<td></td>
</tr>
<tr>
<td>HIST 635</td>
<td>Problems in European History (when topic applies with department approval)</td>
<td></td>
</tr>
<tr>
<td>Other appropriate course with department approval</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 1914 to the Present

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 637</td>
<td>Great Britain: Empire to Commonwealth, 1870-1970</td>
<td></td>
</tr>
<tr>
<td>HIST 640</td>
<td>Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries</td>
<td></td>
</tr>
<tr>
<td>HIST 646</td>
<td>Stalinism</td>
<td></td>
</tr>
<tr>
<td>HIST 635</td>
<td>Problems in European History (when topic applies with department approval)</td>
<td></td>
</tr>
<tr>
<td>Other appropriate course with department approval</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[1\] Select at least 3 credits from each group.

### Specialization in World History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four courses from the following: [1]</td>
<td>12</td>
</tr>
</tbody>
</table>

#### World

- HIST 510 Approaches to Modern World History
- HIST 535 Problems in Comparative World History

#### Africa

- HIST 565 Problems in African History
  Other appropriate course with department approval

#### Asia

- HIST 555 Problems in Asian History
  Other appropriate course with department approval

#### Middle East

- HIST 575 Approaches to Middle East and Islamic History
- HIST 576 The Crusades
- HIST 585 Problems in Middle Eastern History
  Other appropriate course with department approval

#### Latin America

- HIST 525 Problems in Latin American History
  Other appropriate course with department approval

\[1\] Select at least 3 credits from two regions.

### Research Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 797</td>
<td>Research Seminar in History</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### New Media and Information Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two courses in new media and information technology [1]</td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

\[1\] Students should consult the department for relevant courses.

### Internship in Information Technology

If students chose to do a 3-credit internship, they will take an additional 3 credits in applied history course work from courses numbered HIST 680 - HIST 698.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 794</td>
<td>Internship in Applied History</td>
<td>3-6</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3-6</td>
</tr>
</tbody>
</table>

### Proficiency in a Relevant Research Tool

Students fulfill the requirement by completing one of the following:

- Coursework, work or internship experience, or exam in computers, statistics, or a modern foreign language.
- HIST 680 Introduction to Digital Humanities
- HIST 696 Clio Wired: An Introduction to History and New Media

Other course by approval of department

### Concentration in Enrichment (AH3, EH3, WH3)

This concentration is for students who want to study history for intellectual self-fulfillment or vocational reasons. It allows more flexibility in the selection of courses and does not have a foreign language requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History [1]</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

\[1\] Must be taken within the first 9 credits.

### Specialization

Students complete one of the following specializations.

### Specialization in U.S. History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four courses from the following: [1]</td>
<td>12</td>
</tr>
</tbody>
</table>

#### Origins to 1861

- HIST 613 The Colonial Origins of American Society
- HIST 618 The Age of Jackson, 1815-1854
- HIST 620 Development of the Early Republic, 1783-1815
- HIST 627 Disasters in U.S. History
- HIST 631 Era of the American Revolution
- HIST 661 Religion in North America to 1870
- HIST 615 Problems in American History (when topic applies with department approval)
  Other appropriate course with department approval

### 1861-1914

- HIST 617 Topics in the American Civil War Era
- HIST 622 U.S. South Since 1865
- HIST 627 Disasters in U.S. History
- HIST 629 The Gilded Age and Progressive Era
- HIST 633 Reconstruction
HIST 662  U.S. Religion since 1870
HIST 615  Problems in American History (when topic applies and with department approval)
Other appropriate course with department approval

1914 World War I to the Present
HIST 622  U.S. South Since 1865
HIST 623  Recent U.S. History, 1945 to Present
HIST 627  Disasters in U.S. History
HIST 634  Interwar America: 1918-1939
HIST 662  U.S. Religion since 1870
HIST 677  The Vietnam War
HIST 615  Problems in American History (when topic applies and with department approval)
Other appropriate course with department approval

Select at least 3 credits from each group.

Specialization in European History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Specialization in European History</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Select four courses from the following:</td>
<td></td>
</tr>
</tbody>
</table>

Ancient, Medieval, Early Modern to 1789
HIST 576  The Crusades
HIST 642  Humanism and the Renaissance
HIST 643  Religion and Society in the Reformation Era
HIST 644  Society and Culture in Early Modern Europe
HIST 635  Problems in European History (when topic applies and with department approval)
Other appropriate course with department approval

1789-1914
HIST 637  Great Britain: Empire to Commonwealth, 1870-1970
HIST 639  Society and Politics in Western Europe, 1750-1914
HIST 640  Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries
HIST 635  Problems in European History (when topic applies and with department approval)
Other appropriate course with department approval

1914 to the Present
HIST 637  Great Britain: Empire to Commonwealth, 1870-1970
HIST 640  Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries
HIST 646  Stalinism
HIST 635  Problems in European History (when topic applies and with department approval)
Other appropriate course with department approval

Select at least 3 credits from two regions.

Research Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research Seminar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one course from U.S., European, or world history (listed above) that is not in their chosen specialization.</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits

Course in a Field Outside of Geographic Specialization

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Select one course from U.S., European, or world history (listed above) that is not in their chosen specialization.

Total Credits

Elective Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Students can choose to pursue a Thesis in lieu of two electives
Select three elective courses

Select one elective course

Total Credits

Concentration in Higher Education (HEDU)

The concentration in higher education is intended for students who want to teach history at community college. It includes coursework in both history and education, including a course on college teaching. Students are required to take at least one history course in each of three areas (U.S., European, and world history), and they are encouraged to take two courses in each area to prepare them to teach the U.S., western civilization, and world history survey courses most commonly offered at the community college level.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

1  Select at least 3 credits from each group.

Specialization in World History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Select four courses from the following: 1

World

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

1  Must be taken with the first 9 credits.
Additional Courses in History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select six courses in history</td>
<td>18</td>
</tr>
</tbody>
</table>

Total Credits 18

1 Must include at least one course each from U.S. European, and world history.

Research Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 797</td>
<td>Research Seminar in History</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

College of Education and Human Development Graduate Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 567</td>
<td>Teaching Social Studies in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 522</td>
<td>Foundations of Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 619</td>
<td>Literacy in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>Human Development and Learning: Secondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Graduate Education

Select four courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 602</td>
<td>College Teaching</td>
</tr>
<tr>
<td>HE 685</td>
<td>Practicum</td>
</tr>
</tbody>
</table>

Six credits of HE electives

Total Credits 12

Concentration in Teaching (HS4)

This concentration offers students interested in a career in secondary education the option to devote part of their History MA to graduate coursework that can be applied toward the requirements for licensure in the Commonwealth of Virginia. Students who have an interest in obtaining licensure to teach should meet with a pre-Education advisor in the College Of Education and Human Development at the beginning of their program to create a plan for completion of the required content-coursework prerequisites (Endorsements). You can view information here: https://cehd.gmu.edu/endorse/ or contact the Pre-Education Advising Coordinator at endorse@gmu.edu. Students seeking licensure must also enroll in the Secondary Education Licensure Graduate Certificate, students will be eligible for recommendation for an initial teaching license in Secondary Education History and Social Science.

Required Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

1 Must be taken within the first 9 credits.

History

Select six courses in history, at least one course each from U.S., European, and world history

Total Credits 18

Accelerated Master’s

History, BA/History, Accelerated MA

Overview

Highly-qualified Mason undergraduates may apply to the accelerated master’s degree program and obtain both a BA (p. 402) and a MA in history (p. 416) after satisfactory completion of 144 credits. The BA (p. 402) and MA (p. 416) earned separately require 120 and 30 credits respectively. If accepted into the program, they must have completed 90 credits including HIST 300 Introduction to Historical Method (Mason Core) (p. 142) with a minimum grade of B+ before they can enter the program.

Interested students should contact the Director of Undergraduate Programs for details about the application process.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in history, see Application Requirements and Deadlines (http://historyarthistory.gmu.edu/programs/la-ma-accel-hist/application) on the departmental web site.

Accelerated Option Requirements

Applicants accepted to the accelerated MA program must have completed 90 credits including HIST 300 Introduction to Historical Method (Mason Core) (p. 142) with a minimum grade of B+ as a condition to entry into the program.

While undergraduate students, accelerated master’s students complete two graduate courses (HIST 610 The Study and Writing of History and one additional 3 credit HIST course at the 500-level or 600-level), as indicated on their Accelerated Master’s Program Application, with a minimum grade of B in each course. These credits cannot replace HIST 499 RS: Senior Seminar in History (Mason Core) (p. 142). Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework and earn a B or better (3.00 or higher) in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester...
indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional credits of HIST courses at the 500-level or 600-level as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**History, PhD**

**Banner Code: LA-PHD-HIST**

**Academic Advising**

B359 Robinson Hall
Fairfax Campus

Website: historyarthistory.gmu.edu/programs/la-phd-hist

The History, PhD prepares students for careers in college teaching, digital media, publishing, educational administration, public history, and historical research. Students gain expertise in conventional historical methods and web-based technologies. Major fields include U.S. history, European history, and world history. Minor fields are chosen by the student and may include such areas as public history, constitutional studies, and new media and information technology.

The PhD program allows students to develop programs of study to fit with a variety of career goals and interests - preparation to teach and research at the community college, college, or university level; work in the fields of digital humanities, new media and technology; work in the fields of public and applied history, such as museums, archives, preservation, and editing; and professional development.

**Admissions & Policies**

**Admissions**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information see Application Requirements and Deadlines (http://historyarthistory.gmu.edu/programs/application/LA-PHD-HIST) on the departmental web site.

**Policies**

For policies governing all graduate degrees, see Graduate Policies (p. 90).

**Reduction of Credit**

For students entering the doctoral program with a master’s degree, the number of required credits may be reduced by a maximum of 30 credits, subject to approval of the program faculty and the dean. Requests for reduction of credit are reviewed only after acceptance to the doctoral program.

**Requirements**

**Degree Requirements**

Total credits: 72

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 423) tab.

Students will be terminated from the program if they receive more than one unsatisfactory grade (C or F). No more than 6 credits earned through study abroad courses may be applied towards the degree.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 696</td>
<td>Clio Wired: An Introduction to History and New Media</td>
<td>3</td>
</tr>
<tr>
<td>HIST 697</td>
<td>Creating History in New Media</td>
<td>3</td>
</tr>
<tr>
<td>HIST 810</td>
<td>History Doctoral Colloquium</td>
<td>1-6</td>
</tr>
<tr>
<td>HIST 811</td>
<td>Doctoral Research Seminar</td>
<td>3</td>
</tr>
<tr>
<td>HIST 797</td>
<td>Research Seminar in History</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 16-21

1 Students take 1 credit a semester until they advance to candidacy or reach a maximum of 6 credits.

**Major Field**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 15 credits of courses in one of three possible fields:</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>U.S. History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparative World History</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

**Minor Fields**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two minor fields and take 9 credits in each</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

1 Minor fields may include areas such as public history, digital history, cultural history, women’s and gender history, the Atlantic World.

**Doctoral Research Skills**

Students must demonstrate basic competency in computers. Students whose research requires knowledge of a foreign language must also demonstrate a reading knowledge of one foreign language. The department sets specific research skills requirements for students, depending on their field of study.
Comprehensive Exam

Students need to pass a comprehensive exam that consists of a written field exam for each minor field and an oral exam for the major field.

Advancement to Candidacy

To advance to candidacy, students must complete all course work required on their approved program of study. Students must also successfully complete and pass an oral comprehensive exam in a major field and written examinations in two minor fields. In addition, students must have a dissertation committee appointed by the Dean's Office as well as an approved proposal. Evidence of the approved proposal must be on file in the Dean's Office before a student can be advanced to candidacy.

Dissertation

Once enrolled in HIST 998 Doctoral Dissertation Proposal, students in this degree program must maintain continuous registration in HIST 998 Doctoral Dissertation Proposal or HIST 999 Doctoral Dissertation Research each semester (excluding summers) until the dissertation is submitted to and accepted by the University Libraries. Once enrolled in HIST 999 Doctoral Dissertation Research, students must follow the university's continuous registration policy as specified in AP.6.10.6 Dissertation Research (p. 98). Students who defend in the summer must be registered for at least 1 credit of HIST 999 Doctoral Dissertation Research.

Students who complete less than 6 credits of HIST 810 History Doctoral Colloquium must take additional credits of HIST 998 Doctoral Dissertation Proposal or HIST 999 Doctoral Dissertation Research to reach the 72 credits required for the program.

Students may apply to this degree a minimum of 3 and a maximum of 6 credits of HIST 998 Doctoral Dissertation Proposal and a minimum of 15 credits of HIST 999 Doctoral Dissertation Research.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 998</td>
<td>Doctoral Dissertation Proposal (minimum of 3 credits)</td>
<td>18</td>
</tr>
<tr>
<td>HIST 999</td>
<td>Doctoral Dissertation Research (minimum of 15 credits)</td>
<td>18</td>
</tr>
</tbody>
</table>

Total Credits 18

Foreign Languages with a Second Major

Majors in foreign language are encouraged to complete a second major in another field. Students who want to pursue a second undergraduate major should plan a program of study in consultation with advisors from both degrees and be familiar with the relevant policies on more than one major. See the Academic Policies (p. 89) section of the catalog.

Minors

Language majors are encouraged to complete a minor in another field.

The department offers minors in Arabic, Chinese, French, German Studies, Latin, Russian, Spanish, Classical Studies, Italian Studies, Japanese Studies, and Korean Studies. They are available to students in any major at Mason. Except for Classical Studies, all the minors have as a prerequisite the completion of 202 (or equivalent) in the relevant language.
Bachelor's/Accelerated Master's Programs
The department offers highly qualified undergraduates concentrating in Spanish the opportunity to apply to an accelerated master's degree program in Foreign Languages with a concentration in Spanish or a concentration in Spanish/bilingual-multicultural education (p. 433). If accepted, students will be able to earn an undergraduate degree and a graduate degree in Foreign Languages after satisfactory completion of 144-150 credits, generally within five years.

Graduate Programs
The department offers a distinctive interdisciplinary master's degree in foreign languages designed to meet the needs and interests of prospective and practicing teachers and other professionals. It also prepares students for doctoral study at other institutions. Within the master's degree, students choose one of four concentrations: French, Spanish, French and Spanish, and Spanish/bilingual-multicultural education.

Funding
The department has a limited number of teaching assistantships for highly qualified graduate students with excellent language preparation. Students develop valuable language teaching experience by working with faculty experts in language teaching pedagogy.

Faculty

Department Faculty
Professors
Berroa (chair), Winkler

Associate Professors
Carreño-Rodríguez, Leeman, Levine, Markx (associate chair), Olson, Pichichero, Rabin, Roman-Mendoza, Vivancos-Pérez, K. Zhang

Assistant Professors
Arans, Burns, Chanethom, J. Chen, Greenberg, Hemmann, Jeck, Mahmoud Hussein, Mulholland, Quintana, Repinecz, Serafini, Serigos, Sun, Zach

Term Assistant Professors
Bonilla, Dudnik, Fujiwara, Jung, Romaniuc, Sweet, Vikis

Term Instructors

Arabic Minor
Banner Code: ARBC

Academic Advising
336 Aquia Building
Fairfax Campus

Email: language@gmu.edu
Website: mcl.gmu.edu/programs/la-minor-mcl-arab

The minor has an emphasis on developing strong language skills: oral communication and the reading of texts. Students are also introduced to important works of Arabic literature and culture. A minor in Arabic can easily and effectively be combined with majors in other disciplines. It is especially valuable in combination with global affairs, international relations, security, journalism, philosophy, and religion.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor. Students must complete 18 credits at the 300-level or above with a minimum grade of 2.00 in each course. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 425) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAB 300</td>
<td>Advanced Arabic</td>
<td>9</td>
</tr>
<tr>
<td>ARAB 330</td>
<td>Reading and Conversation I</td>
<td></td>
</tr>
<tr>
<td>ARAB 331</td>
<td>Reading and Conversation II</td>
<td></td>
</tr>
<tr>
<td>ARAB 350</td>
<td>Media Arabic I (Written Media)</td>
<td></td>
</tr>
<tr>
<td>ARAB 351</td>
<td>Media Arabic II (Spoken Media) (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARAB 355</td>
<td>Advanced Arabic Media: Debates Context</td>
<td></td>
</tr>
<tr>
<td>ARAB 390</td>
<td>Translation Methods: Arabic to English</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9
Chinese Minor

Banner Code: CHIN

Academic Advising
336 Aquia Building
Fairfax Campus

Email: language@gmu.edu
Website: https://mcl.gmu.edu/programs/la-minor-mcl-chin

The minor in Chinese offers students the opportunity to study one of the rapidly developing ancient cultures of the world. The emphasis is on developing strong language skills: oral communication and the reading of texts.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. Students must complete 18 credits at the 300-level or above with a minimum grade of 2.00 in each course. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 426) tab.

Language Emphasis

Select three courses in language from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN 300</td>
<td>Reading Skills Development</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 301</td>
<td>Advanced Grammar and Syntax</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 305</td>
<td>Chinese for the Business World</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 480</td>
<td>Fourth-Year Chinese I</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 481</td>
<td>Fourth-Year Chinese II</td>
<td>3</td>
</tr>
</tbody>
</table>

History and Cultural Emphasis

Select two courses in content taught in Chinese from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN 310</td>
<td>Survey of Chinese Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 311</td>
<td>Modern Chinese Literature in Translation (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 470</td>
<td>Special Topics in Chinese Studies</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
<td>3</td>
</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
</tr>
</tbody>
</table>

The emphasis is on developing strong language skills: oral communication and the reading of texts.
Select two courses in content taught in Chinese from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN 305</td>
<td>Chinese for the Business World</td>
<td></td>
</tr>
<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 355</td>
<td>Readings in Chinese Poetry and Poetics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 365</td>
<td>Readings in Chinese Fiction after Mao</td>
<td></td>
</tr>
<tr>
<td>CHIN 475</td>
<td>Chinese Popular Culture (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 485</td>
<td>China on Stage: Introduction to Chinese Theatrical Dramas in the 20th Century</td>
<td></td>
</tr>
</tbody>
</table>

Select two courses taught in English from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN 310</td>
<td>Survey of Chinese Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 311</td>
<td>Modern Chinese Literature in Translation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td></td>
</tr>
<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 470</td>
<td>Special Topics in Chinese Studies</td>
<td></td>
</tr>
<tr>
<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
<td></td>
</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 18

Relevant courses offered by other department may be allowed with Chinese program director’s approval.

### Classical Studies Minor

**Banner Code:** CLA

**Academic Advising**

336 Aquia Building  
Fairfax Campus  
Email: language@gmu.edu  
Website: mcl.gmu.edu/programs/LA-MINOR-MCL-CLA/requirements

The minor is designed for students who wish to become familiar with Classical cultures and broaden their knowledge of the foundations of Western civilization. It is especially relevant to students who are studying other areas of the humanities such as English, languages, comparative literature, history, art history, philosophy, or religious studies. The requirements of the minor provide flexibility so students can choose courses that are relevant to their primary interests.

### Admissions & Policies

#### Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum grade of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 427) tab.

#### Core Courses

##### Classics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLAS 250</td>
<td>Classical Mythology (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLAS 260</td>
<td>The Legacy of Greece and Rome (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CLAS 340</td>
<td>Greek and Roman Epic (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CLAS 350</td>
<td>Greek and Roman Tragedy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CLAS 360</td>
<td>Greek and Roman Comedy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CLAS 380</td>
<td>Greek and Roman Novels (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CLAS 390</td>
<td>Topics in Classical Literature and Culture</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

##### Classical History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 301</td>
<td>Classical Greece</td>
<td></td>
</tr>
<tr>
<td>HIST 302</td>
<td>Classical Rome</td>
<td></td>
</tr>
<tr>
<td>HIST 388</td>
<td>Topics in European History (when the topic deals with antiquity)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3

##### Classical Art History or Classical Philosophy

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 321</td>
<td>Greek Art and Archaeology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 322</td>
<td>Roman Art and Archaeology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 333</td>
<td>Early Christian and Byzantine Art (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 399</td>
<td>Special Topics in the History of Art (when the topic is relevant to Classical art history)</td>
<td></td>
</tr>
</tbody>
</table>
Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 420</td>
<td>Advanced Studies in Ancient Art</td>
<td></td>
</tr>
<tr>
<td>PHIL 301</td>
<td>History of Western Philosophy: Ancient</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

**Foreign Languages, BA**

**Banner Code:** LA-BA-FRLN

336 Aquia Building
Fairfax Campus

Email: language@gmu.edu
Website: mcl.gmu.edu/programs/LA-BA-FRLN

The BA in Foreign Languages prepares students for teaching, graduate study in languages and cultures, research, professional work, as well as service in government, nonprofits, or business. Our graduates are particularly valued for their multilingual and cross-cultural knowledge. Majors are encouraged to complete a minor or a second major in another field. Concentrations are offered in Arabic, Chinese, French, Korean, and Spanish. Minors are offered in Arabic, Chinese, Classical Studies, French, German Studies, Italian Studies, Japanese Studies, Korean Studies, Latin, Russian and Spanish.

Double majors in foreign language and another subject should plan a program of study with advisors from both disciplines and follow the steps outlined in AP.5.3.3 Second Bachelor’s Degree (p. 89).

**Admissions & Policies**

**Policies**

Students pursuing this degree must complete 30-33 credits within the major, with a minimum GPA of 2.00

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 428) tab.

**Concentrations in the Major**

In addition to the other college and university requirements for a degree, provided in the tabs below, students pursuing this degree complete a 30-33 credit concentration chosen from the following:

- Concentration in Arabic (ARBC) (p. 428)
- Concentration in Chinese (CHIN) (p. 429)
- Concentration in French (FRN) (p. 429)
- Concentration in Korean (KORE) (p. 429)
- Concentration in Spanish (SPN) (p. 430)

**Concentration in Arabic (ARBC)**

The concentration in Arabic has an emphasis on developing strong language skills, including literacy and oral communication, along with an in-depth understanding of modern Arabic culture and society. Students concentrating in Arabic are expected to gain fluency in Modern Standard Arabic and a working knowledge of at least one Arabic dialect. Additionally, students will graduate with a strong background in Arab intellectual history, literature, and culture.

Students pursuing the concentration in Arabic must complete a minimum of 30 credits in Arabic at the 300 level and above, each with a minimum grade of C. Only two courses (6 credits) taught in English may be applied to the major. Students are highly encouraged to participate in study abroad.

A minor in Arabic is also offered, which can easily and effectively be combined with majors in other disciplines, such as global affairs, international relations, government, journalism, philosophy, and religion.

**Electives**

Select two courses from the following: 6

- ARAB 325 Major Arab Writers/Stories (Mason Core) (p. 142)
- ARAB 360 Topics in Arabic Cultural Production
- ARAB 470 Special Topics in Modern Arabic Studies
- Anth (p. 1212) 1
- ARTH (p. 1240) 1
- ENGH (p. 1637) 1
- GOVT (p. 1774) 1
- HIST (p. 1818) 1
- PHIL (p. 2044) 1
- RELI (p. 2144) 1
Concentration in Chinese (CHIN)
The concentration in Chinese prepares students for research and professional work in government and private enterprise, teaching careers at the secondary school level, and graduate study in Chinese. Language majors with the Chinese concentration are encouraged to complete a minor or, if possible, a second major in another field.

Students pursuing the concentration in Chinese must complete a minimum of 30 credits in Chinese at the 300 level and above, each with a minimum grade of C. Students are expected to complete a balanced program that includes courses in language, culture, and civilization, and literature. Only two courses (6 credits) taught in English may be applied to the major. Students are highly encouraged to participate in study abroad.

A minor in Chinese (p. 426) is also offered, which can easily and effectively be combined with majors in other disciplines, such as global affairs, international relations, government, journalism, philosophy, and religion.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN 300</td>
<td>Reading Skills Development</td>
<td>6</td>
</tr>
<tr>
<td>CHIN 301</td>
<td>Advanced Grammar and Syntax</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 305</td>
<td>Chinese for the Business World</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 355</td>
<td>Readings in Chinese Poetry and Poetics (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 365</td>
<td>Readings in Chinese Fiction after Mao</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 475</td>
<td>Chinese Popular Culture (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 480</td>
<td>Fourth-Year Chinese I</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 481</td>
<td>Fourth-Year Chinese II</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 485</td>
<td>China on Stage: Introduction to Chinese Theatrical Dramas in the 20th Century</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in French (FRN)
Students pursuing the concentration in French must complete a minimum of 33 credits in French at the 300 level and above, each with a minimum grade of C. No more than two courses (6 credits) conducted in English may be used to fulfill requirements for the concentration. These may be chosen from FREN 325 Major French Writers (Topic Varies) (Mason Core) (p. 142) or FREN 329 Problems of Western Civilization in French Literature (Mason Core) (p. 142) or a FRLN or non-MCL course at the 300- or 400-level with approval. Students are expected to complete a balanced program that includes courses in language, culture and civilization, and literature.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 309</td>
<td>Reading and Writing Skills Development</td>
<td>6</td>
</tr>
<tr>
<td>FREN 380</td>
<td>The Making of Modern France</td>
<td>3</td>
</tr>
<tr>
<td>FREN 340</td>
<td>Francophone Identities</td>
<td>3</td>
</tr>
<tr>
<td>or FREN 385</td>
<td>Introduction to French Linguistics</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in Korean (KORE)
The major in Korean prepares students to perform professional work in the field of translation, international relations, local and federal government, transnational enterprise, cultural industry and teaching careers in Korea or at local public schools and to pursue graduate studies in Korean or Korean studies. The concentration in Korean has an emphasis on developing solid Korean language proficiency skills, technical translation skills, and in-depth understanding of both South and North Korean society and culture.

Students majoring in Korean need to complete a minimum of 30 credits in Korean at the 300 level and above, each with a minimum grade of C. Students are expected to take well-balanced courses including language, culture, literature and translation. Only two courses (6 credits) taught in English are applied to the major requirements. Students are strongly recommended to participate in study abroad.

The major in Korean can ideally be combined with majors or minors in other disciplines, such as global affairs, international relations, government, journalism, conflict analysis and resolution, philosophy, religion, and education.
### Courses in Korean
Select eight courses from the following. Some courses may be repeated for credit.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>KORE 305</td>
<td>Business Korean</td>
<td>4</td>
</tr>
<tr>
<td>KORE 321</td>
<td>Korean Proficiency through Visual Culture</td>
<td>4</td>
</tr>
<tr>
<td>KORE 330</td>
<td>Advanced Korean Language and Culture</td>
<td>4</td>
</tr>
<tr>
<td>KORE 331</td>
<td>Special Topics in Advanced Korean Reading</td>
<td>4</td>
</tr>
<tr>
<td>KORE 340</td>
<td>Transformation of Language and Culture in North and South Korea</td>
<td>4</td>
</tr>
<tr>
<td>KORE 370</td>
<td>Advanced Korean Writing</td>
<td>4</td>
</tr>
<tr>
<td>KORE 440</td>
<td>Special Topics in Translation of Korean</td>
<td>4</td>
</tr>
<tr>
<td>KORE 450</td>
<td>Korean Cultural Studies</td>
<td>4</td>
</tr>
</tbody>
</table>

### Courses in English
Select two courses taught in English on Korean subject matter from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>KORE 310</td>
<td>Traditional Korean Literature in Translation</td>
<td>4</td>
</tr>
<tr>
<td>KORE 311</td>
<td>Modern Korean Literature in Translation (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>4</td>
</tr>
<tr>
<td>KORE 325</td>
<td>Major North and South Korean Writers</td>
<td>4</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>4</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>4</td>
</tr>
<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 30

### Concentration in Spanish (SPN)
With more than 400 million people speaking Spanish worldwide - nearly 40 million in the US - and the growing influence of Hispanic cultures around the globe, knowledge of Spanish and the Spanish-speaking world has never been more important. The Spanish courses and degree programs provide students with the opportunity for language development and interdisciplinary study of the cultures, film, history, linguistics and literature of the 20 Spanish-speaking countries, including the United States. Students can also receive Spanish credit through participation study-abroad programs.

Students pursuing the concentration in Spanish must complete a minimum of 33 credits in Spanish courses at the 300-level and above, each with a minimum grade of C. Only one course taught in English (3 credits) may be applied toward the concentration.

### Core Courses
Select one or two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 305 &amp; SPAN 306</td>
<td>Spanish in Context I and Spanish in Context II</td>
<td>4</td>
</tr>
<tr>
<td>SPAN 309</td>
<td>Intensive Spanish in Context</td>
<td>4</td>
</tr>
<tr>
<td>SPAN 315</td>
<td>Spanish in Context for Heritage Speakers (and one additional 3-credit SPAN course)</td>
<td>4</td>
</tr>
</tbody>
</table>

### Additional Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 370</td>
<td>Spanish Writing and Stylistics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 385</td>
<td>Introduction to Spanish Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 390</td>
<td>Introduction to Hispanic Literary Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

### Spanish at the 400 Level
Select four courses in Spanish at the 400 level (p. 2186) 12

### Electives
Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN courses at the 300- or 400-level</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>FRLN 385</td>
<td>Multilingualism, Identity, and Power (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 33

### Writing-Intensive Requirement
The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in foreign language may fulfill this requirement by successfully completing CHIN 480 Fourth-Year Chinese I, FREN 309 Reading and Writing Skills Development, or SPAN 370 Spanish Writing and Stylistics.

### Upper Level Requirement
Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

### Additional Electives
Any remaining credits may be completed with elective courses to bring the degree total to 120.

### College Level Requirements for the BA Degree
In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

### Philosophy or Religious Studies
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL (p. 2044)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RELI (p. 2144)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.
**Social and Behavioral Sciences**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement) ¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH (p. 1212)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CRIM (p. 1514)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON (p. 1564)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVT (p. 1774)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST (p. 1818)</td>
<td></td>
<td>²</td>
</tr>
<tr>
<td>LING (p. 1896)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC (p. 2074)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCI (p. 2167)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

- GGS 101 Major World Regions (Mason Core) (p. 142)
- GGS 103 Human Geography (Mason Core) (p. 142)
- GGS 110 Introduction to Geoinformation Technologies
- GGS 301 Political Geography
- GGS 303 Geography of Resource Conservation (Mason Core) (p. 142)
- GGS 304 Population Geography (Mason Core) (p. 142)
- GGS 305 Economic Geography
- GGS 306 Urban Geography
- GGS 315 Geography of the United States
- GGS 316 Geography of Latin America
- GGS 320 Geography of Europe
- GGS 325 Geography of North Africa and the Middle East
- GGS 330 Geography of the Soviet Succession States
- GGS 357 Urban Planning
- GGS 380 Geography of Virginia

¹ The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

² HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

**Foreign Language**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate-level proficiency in one foreign language, fulfilled by:¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or completing the following ASL three course sequence:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDSE 115 American Sign Language (ASL) I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDSE 116 American Sign Language (ASL) II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDSE 219 American Sign Language (ASL) III</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Non-Western Culture**

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114 Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 300 Civilizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 302 Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 307 Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 308 Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 309 Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 311 Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 313 Zombies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 330 Peoples and Cultures of Selected Regions: Non-Western</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 332 Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 381 Medical Anthropology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTH 396 Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARAB 360 Topics in Arabic Cultural Production</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARAB 420 Survey of Arabic Literature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARAB 440 Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 203 Survey of Asian Art (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 204 Survey of Latin American Art (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 206 Survey of African Art (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 318 Art and Archaeology of Ancient Egypt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 319 Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 320 Art of the Islamic World (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 382 Arts of India (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 383 Arts of Southeast Asia (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 384 Arts of China (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 385 Arts of Japan (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 386 The Silk Road (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTH 482 RS: Advanced Studies in Asian Art</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHIN 318 Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHIN 320 Contemporary Chinese Film 3
CHIN 325 Major Chinese Writers (Mason Core) (p. 142) 3
DANC 118 World Dance (Mason Core) (p. 142) 3
ECON 361 Economic Development of Latin America (Mason Core) (p. 142) 3
ECON 362 African Economic Development (Mason Core) (p. 142) 3
FREN 451 Topics in Sub-Saharan Francophone Literature and Culture 3
FREN 454 Topics in Caribbean Francophone Literature and Culture 3
GGS 101 Major World Regions (Mason Core) (p. 142) 3
GGS 316 Geography of Latin America 3
GGS 325 Geography of North Africa and the Middle East 3
GGS 330 Geography of the Soviet Succession States 3
GGS 399 Select Topics in GGS 3
GOVT 328 Global Political Theory 3
GOVT 332 Government and Politics of the Middle East and North Africa 3
GOVT 333 Government and Politics of Asia 3
GOVT 338 Government and Politics of Russia 3
GOVT 340 Central Asian Politics 3
GOVT 341 Chinese Foreign Policy 3
GOVT 345 Islam and Politics 3
GOVT 433 Political Economy of East Asia 3
HIST 251 Survey of East Asian History (Mason Core) (p. 142) 3
HIST 252 Survey of East Asian History (Mason Core) (p. 142) 3
HIST 261 Survey of African History (Mason Core) (p. 142) 3
HIST 262 Survey of African History (Mason Core) (p. 142) 3
HIST 271 Survey of Latin American History (Mason Core) (p. 142) 3
HIST 272 Survey of Latin American History (Mason Core) (p. 142) 3
HIST 281 Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 282 Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 326 Stalinism 3
HIST 327 The Soviet Union and Russia Since World War II 3
HIST 328 Rise of Russia (Mason Core) (p. 142) 3
HIST 329 Modern Russia and the Soviet Union (Mason Core) (p. 142) 3
HIST 353 History of Traditional China 3
HIST 354 Modern China (Mason Core) (p. 142) 3
HIST 356 Modern Japan (Mason Core) (p. 142) 3
HIST 357 Postwar Japan (Mason Core) (p. 142) 3
HIST 358 Post-1949 China (Mason Core) (p. 142) 3
HIST 360 History of South Africa (Mason Core) (p. 142) 3
HIST 364 Revolution and Radical Politics in Latin America (Mason Core) (p. 142) 3
HIST 365 Conquest and Colonization in Latin America (Mason Core) (p. 142) 3
HIST 366 Comparative Slavery 3
HIST 367 History, Fiction, and Film in Latin America 3
HIST 387 Topics in Global History (Mason Core) (p. 142) 3-6
HIST 426 The Russian Revolution 3
HIST 460 Modern Iran (Mason Core) (p. 142) 3
HIST 461 Arab-Israeli Conflict 3
HIST 462 Women in Islamic Society (Mason Core) (p. 142) 3
HIST 465 The Middle East in the 20th Century 3
JAPA 310 Japanese Culture in a Global World (Mason Core) (p. 142) 3
JAPA 340 Topics in Japanese Literature (Mason Core) (p. 142) 3
KORE 320 Korean Popular Culture in a Global World 3
MUSI 103 Musics of the World (Mason Core) (p. 142) 3
RELI 211 Religions of the West (Mason Core) (p. 142) 3
RELI 212 Religions of Asia (Mason Core) (p. 142) 3
RELI 240 Death and the Afterlife in World Religions 3
RELI 272 Islam 3
RELI 313 Hinduism (Mason Core) (p. 142) 3
RELI 314 Chinese Philosophies and Religious Traditions 3
RELI 315 Buddhism (Mason Core) (p. 142) 3
RELI 337 Mysticism: East and West 3
RELI 365 Muhammad: Life and Legacy 3
RELI 374 Islamic Thought (Mason Core) (p. 142) 3
RELI 375 Qur’an and Hadith 3
RELI 379 Islamic Law, Society, and Ethics 3
RELI 387 Islam, Democracy, and Human Rights 3
RELI 490 Comparative Study of Religions (Mason Core) (p. 142) 3
RUSS 353 Russian Civilization (Mason Core) (p. 142) 3
RUSS 354 Contemporary Post-Soviet Life (Mason Core) (p. 142) 3

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).
Mason Core
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Integration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communications (ENGH 302)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>40</td>
</tr>
</tbody>
</table>

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.

Accelerated Master's
The accelerated master’s programs in the list below specify the BA in foreign languages with a Spanish concentration as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

Foreign Languages, BA (Spanish Concentration)/Foreign Languages, Accelerated MA (Spanish Concentration)
Overview
Highly-qualified Mason undergraduates may apply to the accelerated master’s degree. If accepted, students may earn both a bachelor's degree in foreign languages with a concentration in Spanish (p. 428) and a master's degree in foreign languages with a concentration in Spanish/Bilingual-Multicultural Education Concentration (p. 434) after satisfactory completion of 144 credits.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in Foreign Languages (Spanish concentration) (p. 434), see Application Requirements on the departmental website (http://mcl.gmu.edu).

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses (SPAN 510 Methods of Literary and Cultural Studies and SPAN 502 Hispanic Sociolinguistics) as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Foreign Languages, BA (Spanish Concentration)/Foreign Languages, Accelerated MA (Spanish/Bilingual-Multicultural Education Concentration)
Overview
Highly-qualified Mason undergraduates may apply to the accelerated master's degree. If accepted, students may earn both a bachelor's degree in foreign languages with a concentration in Spanish (p. 428) and a master's degree in foreign languages with a concentration in Spanish/Bilingual-Multicultural Education Concentration (p. 434) after satisfactory completion of 150 credits.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in Foreign Languages (Spanish/Bilingual Multicultural Education concentration) (p. 434), see Application Requirements on the departmental website (http://mcl.gmu.edu).
Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses (SPAN 510 Methods of Literary and Cultural Studies and SPAN 502 Hispanic Sociolinguistics) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/ Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP 1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Foreign Languages, MA
Banner Code: LA-MA-FRLN

Admissions & Policies
Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information, see Application Requirements and Deadlines (http://mcl.gmu.edu/programs/application/LA-MA-FRLN) on the departmental website.

Policies
For policies governing all graduate degrees, see AP6 Graduate Policies.

Requirements
Degree Requirements
Total credits: 30-42
For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).
Each concentration has a different number of required credits. In all four concentrations, 6 of the total credits may be earned with a thesis. Regardless of the concentration selected, all students must meet the core and distribution requirements given below and pass a comprehensive exam or write a thesis.

Concentration in French (FRN)
18 credits must be in courses with the subject code FREN.

Concentration in Spanish (SPN)

Concentration in French (FRN)
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 798</td>
<td>Directed Reading and Thesis Research</td>
<td></td>
</tr>
<tr>
<td>FREN 799</td>
<td>Thesis</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Concentration in Spanish (SPN)

Concentration in French (FRN)
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 502</td>
<td>Hispanic Sociolinguistics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 510</td>
<td>Methods of Literary and Cultural Studies</td>
<td>3</td>
</tr>
<tr>
<td>Latino, Latin American, or Spanish cultures, literatures, or linguistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select any five courses with the SPAN subject code</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select three electives in consultation with an advisor</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>SPAN 798</td>
<td>Directed Reading and Research</td>
<td></td>
</tr>
<tr>
<td>SPAN 799</td>
<td>Thesis</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>
1 Students must take the core courses within their first 15 credits.
2 They can include additional courses in Latin American or Spanish culture, linguistics, or literature, courses with the subject code FRLN, up to 6 credits of courses in related fields, and up to 6 credits of thesis research and writing. Students who do not complete their thesis during one semester of SPAN 799 will need to register for additional credits. Independent studies courses are not available for graduate students of Spanish.

Concentration in Spanish and French (SF)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td>Select six required courses (not electives) specified under the concentration in French.</td>
<td>18</td>
</tr>
<tr>
<td>Latino, Latin American, or Spanish cultures, literatures, or linguistics</td>
<td>Take the two required core courses specified under the concentration in Spanish, plus four electives with the SPAN subject code.</td>
<td>18</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 798</td>
<td>Directed Reading and Thesis Research</td>
<td>6</td>
</tr>
<tr>
<td>SPAN 798</td>
<td>Directed Reading and Research</td>
<td>6</td>
</tr>
<tr>
<td>FREN 799</td>
<td>Thesis</td>
<td>6</td>
</tr>
<tr>
<td>SPAN 799</td>
<td>Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 42

Students who elect to complete a thesis may apply 6 credits of 798 and 799 to fulfill this requirement.

Concentration in Spanish/Bilingual-Multicultural Education (SBM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Core Courses</td>
<td>Select four courses with the SPAN subject code.</td>
<td>12</td>
</tr>
<tr>
<td>SPAN 502</td>
<td>Hispanic Sociolinguistics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 510</td>
<td>Methods of Literary and Cultural Studies</td>
<td>3</td>
</tr>
<tr>
<td>Latino, Latin American or Spanish cultures, literatures, or linguistics</td>
<td>Select two courses from the following list in consultation with an advisor.</td>
<td>6</td>
</tr>
<tr>
<td>EDUC 511</td>
<td>Child and Adolescent Development in Global Contexts</td>
<td></td>
</tr>
<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td></td>
</tr>
<tr>
<td>EDCI 516</td>
<td>Bilingualism and Language Acquisition Research</td>
<td></td>
</tr>
<tr>
<td>EDCI 520</td>
<td>Assessment of Language Learners</td>
<td></td>
</tr>
<tr>
<td>EDCI 560</td>
<td>Methods of Teaching in Foreign/World Languages</td>
<td></td>
</tr>
<tr>
<td>EDCI 684</td>
<td>Advanced Methods of Teaching Foreign/Second Languages in PK-12 Schools</td>
<td></td>
</tr>
<tr>
<td>EDRD 620</td>
<td>Reading/Writing in Foreign/World Languages</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 36

Students who elect to complete a thesis may apply 6 credits of 798 and 799 to fulfill this requirement.

Dual Degree Options

Foreign Languages, MA and Global Affairs, MA Dual Degree

Students interested in pursuing a dual master’s program linking foreign languages or global affairs with another discipline should discuss their interest with the graduate program directors of both programs and review the university policies regarding Individualized Dual Master’s Degree Programs (p. 96).

Students approved to pursue a dual master’s program linking the foreign languages MA with a concentration in French, Spanish, or Spanish bilingual/multicultural education with the global affairs MA can share 12 credits between the two programs. Application to the second master’s program should be pursued with consultation of the directors of both programs. Admission to the second master’s program will require that the student has met the minimum prerequisites for admissions to the second program.

Accelerated Master’s

Foreign Languages, BA (Spanish Concentration)/Foreign Languages, Accelerated MA (Spanish Concentration)

Overview

Highly-qualified Mason undergraduates may apply to the accelerated master’s degree. If accepted, students may earn both a bachelor’s degree (p. 428) and a master’s degree in foreign languages with a concentration in Spanish (p. 434) after satisfactory completion of 144 credits.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in Foreign Languages (Spanish concentration) (p. 434), see Application Requirements on the departmental website (http://mcl.gmu.edu).

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete two graduate courses (SPAN 510 Methods of Literary and Cultural Studies and SPAN 502 Hispanic Sociolinguistics) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway,
students must maintain a minimum cumulative GPA of 3.25 in all course work. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**French Minor**

Banner Code: FRN

Academic Advising

336 Aquia Building
Fairfax Campus

Website: mcl.gmu.edu/programs/LA-MINOR-MCL-FRN/

The minor in French provides students with the components of a well-rounded education in French: knowledge of the language (through conversation, composition, and grammar) combined with the study of literature and civilization.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must complete 18 credits at the 300-level or above with a minimum grade of 2.00 in each course. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 436) tab.

**Core Courses**

**Advanced Language Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 309</td>
<td>Reading and Writing Skills Development</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6
**German Studies Minor**

**Banner Code:** GRMS

**Academic Advising**

336 Aquia Building
Fairfax Campus

Website: mcl.gmu.edu/programs/la-minor-mcl-grm/

The emphasis of the minor is on developing strong language skills: oral communication and the reading of texts. Students are introduced to important works of German literature and to the culture of German-speaking countries.

A German Studies minor can easily and effectively be combined with majors in other disciplines. It is especially valuable in combination with business, computer science, international studies, history, music, philosophy, or another language.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor. Students pursuing this minor must complete 18 credits at the 300-level or above with a minimum grade of 2.00 in each course. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

A maximum of two courses (6 credits) conducted in English can be applied to the minor.

**Requirements**

**Minor Requirements**

Total credits: 18

---

**Literature and Civilization**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 380</td>
<td>The Making of Modern France</td>
<td>3</td>
</tr>
<tr>
<td>FREN 340</td>
<td>Francophone Identities</td>
<td>3</td>
</tr>
<tr>
<td>or FREN 385</td>
<td>Introduction to French Linguistics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two electives in FREN at the 300 level or above (p. 1723)</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

1. One elective course in English may be applied to the minor. This may be chosen from FREN 325 Major French Writers (Topic Varies) (Mason Core) (p. 142) or FREN 329 Problems of Western Civilization in French Literature (Mason Core) (p. 142), or from a FRLN or non-MCL course with approval. Students choose electives in consultation with an advisor.

---

**Core Courses**

**Language Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three courses from the following:</td>
<td>9</td>
</tr>
<tr>
<td>GERM 310</td>
<td>Conversation and Composition</td>
<td></td>
</tr>
<tr>
<td>GERM 316</td>
<td>German for the Business World</td>
<td></td>
</tr>
<tr>
<td>GERM 312</td>
<td>Great Cities in Germany, Austria and Switzerland</td>
<td></td>
</tr>
<tr>
<td>GERM 315</td>
<td>German for the Global World</td>
<td></td>
</tr>
<tr>
<td>GERM 318</td>
<td>Translation of Texts</td>
<td></td>
</tr>
<tr>
<td>GERM 370</td>
<td>German Through the Arts</td>
<td></td>
</tr>
<tr>
<td>GERM 415</td>
<td>Advanced Grammar and Style</td>
<td></td>
</tr>
<tr>
<td>GERM 418</td>
<td>Advanced Composition</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

**Literature and Culture Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two courses from the following:</td>
<td>6</td>
</tr>
<tr>
<td>GERM 301</td>
<td>Culture and Civilization</td>
<td></td>
</tr>
<tr>
<td>GERM 325</td>
<td>Major Writers (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GERM 340</td>
<td>Topics in German Literature and Film</td>
<td></td>
</tr>
<tr>
<td>GERM 355</td>
<td>Readings in Poetry (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>GERM 365</td>
<td>Topics in German History and Culture</td>
<td></td>
</tr>
<tr>
<td>GERM 375</td>
<td>Readings in Drama</td>
<td></td>
</tr>
<tr>
<td>GERM 442</td>
<td>The Age of Goethe</td>
<td></td>
</tr>
<tr>
<td>GERM 444</td>
<td>The Literature of Romanticism</td>
<td></td>
</tr>
<tr>
<td>GERM 450</td>
<td>Modern Literature: 1880-1925</td>
<td></td>
</tr>
<tr>
<td>GERM 451</td>
<td>Modern Literature: 1925 to the Present</td>
<td></td>
</tr>
<tr>
<td>GERM 480</td>
<td>Special Topics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

**Elective**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>GERM 300- or 400-Level Course (p. 1756)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST 306</td>
<td>The Reformation</td>
<td></td>
</tr>
<tr>
<td>HIST 308</td>
<td>Nineteenth-Century Europe</td>
<td></td>
</tr>
<tr>
<td>HIST 309</td>
<td>Europe in Crisis: 1914-1948</td>
<td></td>
</tr>
<tr>
<td>HIST 314</td>
<td>History of Germany</td>
<td></td>
</tr>
<tr>
<td>PHIL 325</td>
<td>Karl Marx’s Social and Political Thought</td>
<td></td>
</tr>
<tr>
<td>PHIL 335</td>
<td>Nineteenth-Century Philosophy</td>
<td></td>
</tr>
<tr>
<td>PHIL 340</td>
<td>Hermeneutic Philosophy</td>
<td></td>
</tr>
<tr>
<td>MUSI 332</td>
<td>Music History in Society II</td>
<td></td>
</tr>
<tr>
<td>MUSI 338</td>
<td>Music History in Society A</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

1. The courses listed may apply to the minor with prior written approval of the advisor.
Italian Studies Minor

Banner Code: ITLN

Academic Advising

336 Aquia Building
Fairfax Campus

Website: mcl.gmu.edu/programs/la-minor-mcl-itln

The minor enables students to advance their Italian language skills and to study Italian culture, history, and literature from an interdisciplinary perspective.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 438) tab.

Students complete coursework with a language emphasis or a history and culture emphasis. Special topics courses, such as HIST 388 Topics in European History, GOVT 520 Political Theory, and RELI 235 Religion and Literature (Mason Core) (p. 142), when relevant, may be applied to the minor with prior written approval of the coordinator.

Language Emphasis

Select five language courses from the following repeatable courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITAL 330</td>
<td>Advanced Italian: Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 331</td>
<td>Advanced Italian Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 340</td>
<td>Italian through Arts</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 360</td>
<td>Southern Italy</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 420</td>
<td>Global and Local Italy</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one course in Italian literature and film in translation from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITAL 320</td>
<td>Topics in Italian Film and Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 325</td>
<td>Major Italian Writers (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

Japanese Studies Minor

Banner Code: JPNS

Academic Advising

336 Aquia Building
Fairfax Campus

Website: mcl.gmu.edu/programs/la-minor-mcl-jpns/requirements

The minor enables students to advance their Japanese language skills and develop a sound understanding of Japanese culture and history from a global perspective.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor. Special topics courses, when relevant, may be applied to the minor with prior written approval of the director. Students who wish to declare this minor need to obtain the signature of the director. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 438) tab.

History and Culture Emphasis

Select three language courses from the following repeatable courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITAL 330</td>
<td>Advanced Italian: Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 331</td>
<td>Advanced Italian Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 340</td>
<td>Italian through Arts</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 360</td>
<td>Southern Italy</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 420</td>
<td>Global and Local Italy</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one course in Italian literature and film in translation from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITAL 320</td>
<td>Topics in Italian Film and Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ITAL 325</td>
<td>Major Italian Writers (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18
Students must select an emphasis in either the study of Japanese language or the history and culture of Japan.

### Language Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Japanese Language</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Select four courses from the following:</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td>JAPA 330</td>
<td>Advanced Reading and Speaking I</td>
<td></td>
</tr>
<tr>
<td>JAPA 331</td>
<td>Advanced Reading and Speaking II</td>
<td></td>
</tr>
<tr>
<td>JAPA 350</td>
<td>Readings in Japanese Culture</td>
<td></td>
</tr>
<tr>
<td>JAPA 440</td>
<td>Integrated Study of Japanese Language</td>
<td></td>
</tr>
<tr>
<td>JAPA 441</td>
<td>Integrated Study of Japanese Language</td>
<td></td>
</tr>
</tbody>
</table>

|        | **Japanese and Japan-Related History**            | **6**   |
|        | **Select two courses from the following:**       |         |
| HIST 251 | Survey of East Asian History (Mason Core)        |         |
| HIST 252 | Survey of East Asian History (Mason Core)        |         |
| HIST 356 | Modern Japan (Mason Core)                        |         |
| HIST 357 | Postwar Japan (Mason Core)                       |         |
| ARTH 385 | Arts of Japan (Mason Core)                       |         |

|        | **Electives**                                     | **6**   |
|        | **Select one course from the following:**        |         |
| JAPA 240 | Introduction to Japanese Culture                 |         |
| JAPA 310 | Japanese Culture in a Global World (Mason Core)  |         |
| JAPA 320 | Japanese Cinema                                  |         |
| JAPA 340 | Topics in Japanese Literature (Mason Core)       |         |
| JAPA 350 | Readings in Japanese Culture (if not used to fulfill the Japanese language requirement) |         |
| JAPA 360 | Topics in Japanese Popular Culture               |         |
| JAPA 370 | Video Games and Japan                            |         |
| JAPA 420 | Animals and Nature in Japan                      |         |
| ARTH 482 | RS: Advanced Studies in Asian Art                |         |
| CHIN 328 | Asian American Women Writers (Mason Core)        |         |
| GOVT 333 | Government and Politics of Asia                  |         |
| GOVT 433 | Political Economy of East Asia                   |         |
| RELI 212 | Religions of Asia (Mason Core)                   |         |
| RELI 315 | Buddhism (Mason Core)                            |         |

**Total Credits: 18**

### History and Culture Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Japanese Language</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>JAPA 330</td>
<td>Advanced Reading and Speaking I</td>
<td></td>
</tr>
<tr>
<td>JAPA 331</td>
<td>Advanced Reading and Speaking II</td>
<td></td>
</tr>
<tr>
<td>JAPA 350</td>
<td>Readings in Japanese Culture</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits: 18**

### Korean Studies Minor

**Banner Code: KRNS**

**Academic Advising**

336 Aquia Building
Fairfax Campus
Website: mcl.gmu.edu

The minor in Korean studies focuses on the acquisition of Korean linguistic and cultural knowledge from various language and interdisciplinary courses.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor.
For policies governing all minors, see AP.5.3.4 Minors (p. 90). A maximum of 6 credits of KORE courses, conducted in English, can be applied to the minor.

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 439) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three courses in Korean from the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>KORE 305</td>
<td>Business Korean</td>
<td></td>
</tr>
<tr>
<td>KORE 321</td>
<td>Korean Proficiency through Visual Culture</td>
<td></td>
</tr>
<tr>
<td>KORE 330</td>
<td>Advanced Korean Language and Culture</td>
<td></td>
</tr>
<tr>
<td>KORE 331</td>
<td>Special Topics in Advanced Korean Reading</td>
<td></td>
</tr>
<tr>
<td>KORE 340</td>
<td>Transformation of Language and Culture in North and South Korea</td>
<td></td>
</tr>
<tr>
<td>KORE 370</td>
<td>Advanced Korean Writing</td>
<td></td>
</tr>
<tr>
<td>KORE 440</td>
<td>Special Topics in Translation of Korean</td>
<td></td>
</tr>
<tr>
<td>KORE 450</td>
<td>Korean Cultural Studies</td>
<td></td>
</tr>
</tbody>
</table>

Select one course in English from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>KORE 310</td>
<td>Traditional Korean Literature in Translation</td>
<td>3</td>
</tr>
<tr>
<td>KORE 311</td>
<td>Modern Korean Literature in Translation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td></td>
</tr>
<tr>
<td>KORE 325</td>
<td>Major North and South Korean Writers</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

The elective requirement (6 credits) can be met with one of the following options:

Option 1

Select two courses from outside the department from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td></td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td></td>
</tr>
<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Option 2

One course outside the department selected from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td></td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td></td>
</tr>
<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Latin Minor

Banner Code: LATN

Academic Advising

336 Aquia Building
Fairfax Campus

Website: mcl.gmu.edu/programs/la-minor-mcl-latn/requirements

The minor offers students the opportunity to develop and refine their knowledge of the Latin language by reading classical Latin literature. Students gain an understanding and appreciation of the literature, culture, and intellectual achievements of Roman antiquity that have contributed to the development of Western civilization.

A Latin minor complements majors in literature, language, history, philosophy, and the arts, all of which find their roots in classical antiquity. Majors in the natural and the social sciences are also strengthened by the historical perspective and the advanced training in language and terminology afforded by the minor in Latin.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. Students must complete 18 credits in Latin at the 300-level or above with a minimum grade of 2.00 in each course. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 440) tab.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students complete 18 credits of the following courses which vary in content and may be repeated for credit when content is different.</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>LATN 351</td>
<td>Roman Prose Literature</td>
<td></td>
</tr>
<tr>
<td>LATN 352</td>
<td>Roman Poetry</td>
<td></td>
</tr>
<tr>
<td>LATN 451</td>
<td>Studies in Roman Literature</td>
<td></td>
</tr>
</tbody>
</table>
Russian Minor
Banner Code: RUS
Academic Advising
336 Aquia Building
Fairfax Campus
Website: mcl.gmu.edu/programs/la-minor-mcl-rus/requirements

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor. Students must complete 18 credits at the 300-level or above with a minimum grade of 2.00 in each course. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 441) tab.

Core Courses

Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RUSS 302</td>
<td>Russian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>or RUSS 303</td>
<td>Russian Advanced Conversation</td>
<td></td>
</tr>
<tr>
<td>RUSS 380</td>
<td>Advanced Russian I</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 381</td>
<td>Advanced Russian II</td>
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<td><strong>Total Credits</strong></td>
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Literature

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 310</td>
<td>Readings in Russian Literature</td>
<td>3</td>
</tr>
<tr>
<td>or RUSS 311</td>
<td>Contemporary Russian Short Fiction</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
<td></td>
</tr>
</tbody>
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Additional Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
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Elective

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td><strong>Select one elective at the 3xx level or above</strong></td>
<td><strong>3</strong></td>
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<tr>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
<td></td>
</tr>
</tbody>
</table>

Spanish Minor
Banner Code: SPN
Academic Advising
336 Aquia Building
Fairfax Campus
Website: mcl.gmu.edu/programs/la-minor-mcl-spn

The minor in Spanish focuses on developing skill in understanding, speaking, reading, and writing Spanish at an advanced level.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor. Students must complete 18 credits at the 300-level or above with a minimum grade of 2.00 in each course. One course taught in English may be applied toward the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 441) tab.

Core Courses

Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SELECT ONE OR TWO COURSES FROM THE FOLLOWING: &amp; SPAN 306</td>
<td><strong>6</strong></td>
<td></td>
</tr>
<tr>
<td>SPAN 305</td>
<td>Spanish in Context I</td>
<td></td>
</tr>
<tr>
<td>SPAN 309</td>
<td>Intensive Spanish in Context</td>
<td></td>
</tr>
<tr>
<td>SPAN 315</td>
<td>Spanish in Context for Heritage Speakers</td>
<td></td>
</tr>
<tr>
<td>(and one elective course in Spanish)</td>
<td><strong>6</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
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</table>

Two Additional Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SELECT ONE FROM THE FOLLOWING:</td>
<td><strong>3</strong></td>
<td></td>
</tr>
<tr>
<td>SPAN 370</td>
<td>Spanish Writing and Stylistics</td>
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</tr>
<tr>
<td>SPAN 385</td>
<td>Introduction to Spanish Linguistics</td>
<td></td>
</tr>
<tr>
<td>SPAN 388</td>
<td>Introduction to Latina/o Studies (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SPAN 390</td>
<td>Introduction to Hispanic Literary Analysis</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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</table>
**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two courses from the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SPAN courses at the 300- or 400-level. (p. 2186)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>FRLN 385 Multilingualism, Identity, and Power (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
</tbody>
</table>

**Department of Philosophy**

Phone: 703-993-1290  
Website: philosophy.gmu.edu

**Undergraduate Programs**

The department offers a bachelor of arts degree in philosophy, which covers the major issues and areas in philosophy. It is intended to serve the needs of students who wish to pursue graduate studies in philosophy or emphasize philosophy while acquiring a broad liberal arts education. Majors in philosophy take courses in a variety of philosophical traditions and study logic, ethics, and social and political philosophy. With the skills of critical thinking, clear writing, and analytical reasoning that are the hallmark of philosophy majors, students are well-prepared for a wide range of careers including law, government service, or graduate study.

The philosophy program can complement other interests of students when they complete a second major in another field. Students who plan to pursue more than one undergraduate major should work out a program of study in consultation with advisors from both majors and be familiar with the relevant policies for completing more than one major. See Undergraduate Policies.

In addition to the general degree in philosophy, students can choose a concentration in philosophy and law. This concentration offers philosophy majors the opportunity to focus their study of philosophy in a way that prepares them for the study of the law.

**Minors**

The department offers a minor in philosophy (p. 450) and a minor in philosophy and law (p. 451). These minors are available to students in any major. The department, in cooperation with the Schar School of Policy and Government, coordinates the interdisciplinary minor in political philosophy (p. 454).

**Bachelor’s/Accelerated Master’s Program**

The department offers highly qualified undergraduate majors in philosophy the opportunity to apply to an accelerated master’s degree program in philosophy. If accepted, students will be able to earn both the undergraduate and graduate degrees after satisfactory completion of 145 credits, generally within five years.

**Graduate Programs**

The department offers a master of arts degree in traditional and contemporary philosophy as well as specialized concentrations in philosophy and cultural theory and ethics and public affairs. The degree is designed for students who want to further their professional goals or foster their intellectual development. It provides a solid preparation for advanced work in philosophy or other fields such as women and gender studies, cultural studies, or law. The degree provides grounding in the history of philosophy, ethics, metaphysics, epistemology, contemporary continental thought, contemporary analytic philosophy, and philosophy of science.

The focus on traditional and contemporary philosophy of the master’s degree program provides students with a historical and pluralistic approach to philosophical questions. The concentration in ethics and public affairs gives students the opportunity to explore the ethical and philosophical issues that arise in such fields of study and work as business, health care, scientific research, biomedical technology, and public policy. The concentration in philosophy and cultural theory provides students with a distinctive and important theoretical foundation for doctoral work in cultural studies.

Students are encouraged to pursue opportunities beyond the classroom such as study abroad, professional internships, and research with faculty members.

**Faculty**

**Department Faculty**

**Professors**

Light

**Professors Emeriti**

Bergoffen, De Nys, Fletcher, Holman, McDermott, Paden, Sagoff, Skousgaard

**Associate Professors**

Cherubin, Eckenwiler, Froman, Jones, Kinnaman

**Assistant Professors**

Fyfe, Peterson

**Term Professors**

Boyd, Brandhorst, Kuykendall

**Adjunct Professors**

Evans, Faruggia, Kirilov, Kirkpatrick, Olsen, Sojka, Venner, Will

**Programs**

- Philosophy Minor
- Philosophy and Law Minor
- Philosophy, BA
- Philosophy, MA
- Political Philosophy Minor

**Philosophy, BA**

Banner Code: LA-BA-PHIL

B465 Robinson Hall  
Fairfax Campus  
Website: philosophy.gmu.edu/programs/la-ba-phil

The bachelor of arts in philosophy examines how philosophers have answered some of the most enduring questions about human existence, while exploring how those answers continue to inform our thinking in the
Students gain a deeper understanding of philosophy’s relevance to key contemporary issues—such as global warming, social justice and the defense of human rights, or the relationship between science and religion. Students can use this major as preparation for professions such as law or government service, as a pathway to graduate work, or to complement other interests by taking a double major in philosophy and a related field of study.

Admissions & Policies

Policies

Students pursuing this degree must complete at least 33 credits within the major, earning a minimum grade of 2.00 in each course. At least 21 credits must be at the 300 level or above, including at least 3 credits in PHIL 421 Seminar (Mason Core) (p. 142)/PHIL 422 Honors Seminar (Mason Core) (p. 142). If a course counts for the requirement in analytic or continental philosophy, and also for the ethics and political philosophy requirement, then both requirements are fulfilled with that course.

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 443) tab.

Core Courses without Concentration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 173</td>
<td>Logic and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL 376</td>
<td>Symbolic Logic</td>
<td></td>
</tr>
</tbody>
</table>

History of Philosophy

| PHIL 301 | History of Western Philosophy: Ancient     | 3       |
| PHIL 303 | History of Western Philosophy: Modern      | 3       |

Analytic Tradition

Select one course from the following: 1

| PHIL 313 | Philosophy of Religion 2                   | 3       |
| PHIL 332 | Twentieth-Century Analytic Philosophy       |         |
| PHIL 333 | American Philosophy: Pragmatism            |         |
| PHIL 338 | Philosophy, Race, and Gender 2             |         |
| PHIL 355 | Theories of Ethics                         |         |
| PHIL 356 | Philosophy of Art                          |         |
| PHIL 357 | Philosophy of the Social Sciences 2        |         |
| PHIL 358 | Ethics and Economics                       |         |
| PHIL 371 | Philosophy of Natural Sciences             |         |
| PHIL 373 | Theory of Knowledge                        |         |
| PHIL 374 | Philosophy of Mind                         |         |
| PHIL 411 | Theories of Decision                       |         |

Continental Tradition

Select one course from the following: 1

| PHIL 313 | Philosophy of Religion (with departmental approval) 2 |         |
| PHIL 325 | Karl Marx’s Social and Political Thought           |         |
| PHIL 335 | Nineteenth-Century Philosophy                      |         |
| PHIL 336 | Twentieth-Century Continental Thought: Existentialism |         |
| PHIL 337 | Twentieth-Century Continental Thought: Phenomenology |         |
| PHIL 338 | Philosophy, Race, and Gender 2                    |         |
| PHIL 340 | Hermeneutic Philosophy                            |         |
| PHIL 356 | Philosophy of Art                                 |         |
| PHIL 357 | Philosophy of the Social Sciences 2               |         |

Electives without Concentration

Select five or six electives from any philosophy courses including those listed above that are not used to meet another requirement. 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 305</td>
<td>Business Ethics</td>
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<tr>
<td>PHIL 309</td>
<td>Bioethics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHIL 311</td>
<td>Philosophy of Law</td>
<td></td>
</tr>
<tr>
<td>PHIL 323</td>
<td>Classical Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL 324</td>
<td>Modern Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL 325</td>
<td>Karl Marx’s Social and Political Thought</td>
<td></td>
</tr>
<tr>
<td>PHIL 327</td>
<td>Contemporary Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL 338</td>
<td>Philosophy, Race, and Gender 2</td>
<td></td>
</tr>
<tr>
<td>PHIL 343</td>
<td>Topics in Environmental Philosophy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHIL 344</td>
<td>Ethical Issues in Global Health</td>
<td></td>
</tr>
<tr>
<td>PHIL 355</td>
<td>Theories of Ethics</td>
<td></td>
</tr>
<tr>
<td>PHIL 358</td>
<td>Ethics and Economics</td>
<td></td>
</tr>
<tr>
<td>PHIL 411</td>
<td>Theories of Decision</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

1 When the subject matter is appropriate and with the prior written approval of the undergraduate director, PHIL 391 Special Topics in Philosophy, PHIL 421 Seminar (Mason Core) (p. 142), PHIL 422 Honors Seminar (Mason Core) (p. 142), or PHIL 425 Independent Study may be used to fulfill this requirement.

2 Only with departmental approval.

Optional Concentrations

Students interested in a degree in philosophy with a concentration will complete the coursework for one of the concentrations below.

Available Concentrations

• Concentration in Philosophy and Law (PHLW) (p. 444)
• Concentration in Philosophy, Politics, and Economics (PPE) (p. 444)
Concentration in Philosophy and Law (PHLW)
The concentration in philosophy and law offers philosophy majors the opportunity to focus their study of philosophy in a way that prepares them for the study of the law.

In addition to the specific courses listed below, other relevant courses may be applied to the requirements for this concentration with prior written approval of the undergraduate director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 173</td>
<td>Logic and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL 376</td>
<td>Symbolic Logic</td>
<td>3</td>
</tr>
<tr>
<td>History of Philosophy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 301</td>
<td>History of Western Philosophy: Ancient</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 303</td>
<td>History of Western Philosophy: Modern</td>
<td>3</td>
</tr>
<tr>
<td>Analytic Tradition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one course from the following: 1</td>
<td></td>
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</tr>
<tr>
<td>PHIL 313</td>
<td>Philosophy of Religion 2</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 332</td>
<td>Twentieth-Century Analytic Philosophy</td>
<td></td>
</tr>
<tr>
<td>PHIL 333</td>
<td>American Philosophy: Pragmatism</td>
<td></td>
</tr>
<tr>
<td>PHIL 338</td>
<td>Philosophy, Race, and Gender 2</td>
<td></td>
</tr>
<tr>
<td>PHIL 355</td>
<td>Theories of Ethics</td>
<td></td>
</tr>
<tr>
<td>PHIL 356</td>
<td>Philosophy of Art 2</td>
<td></td>
</tr>
<tr>
<td>PHIL 357</td>
<td>Philosophy of the Social Sciences 2</td>
<td></td>
</tr>
<tr>
<td>PHIL 358</td>
<td>Ethics and Economics</td>
<td></td>
</tr>
<tr>
<td>PHIL 371</td>
<td>Philosophy of Natural Sciences</td>
<td></td>
</tr>
<tr>
<td>PHIL 373</td>
<td>Theory of Knowledge</td>
<td></td>
</tr>
<tr>
<td>PHIL 374</td>
<td>Philosophy of Mind</td>
<td></td>
</tr>
<tr>
<td>PHIL 411</td>
<td>Theories of Decision</td>
<td></td>
</tr>
<tr>
<td>Continental Tradition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one course from the following: 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 313</td>
<td>Philosophy of Religion 2</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 325</td>
<td>Karl Marx’s Social and Political Thought</td>
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<tr>
<td>PHIL 335</td>
<td>Nineteenth-Century Philosophy</td>
<td></td>
</tr>
<tr>
<td>PHIL 336</td>
<td>Twentieth-Century Continental Thought: Existentialism</td>
<td></td>
</tr>
<tr>
<td>PHIL 337</td>
<td>Twentieth-Century Continental Thought: Phenomenology</td>
<td></td>
</tr>
<tr>
<td>PHIL 338</td>
<td>Philosophy, Race, and Gender 2</td>
<td></td>
</tr>
<tr>
<td>PHIL 340</td>
<td>Hermeneutic Philosophy</td>
<td></td>
</tr>
<tr>
<td>PHIL 356</td>
<td>Philosophy of Art</td>
<td></td>
</tr>
<tr>
<td>PHIL 357</td>
<td>Philosophy of the Social Sciences 2</td>
<td></td>
</tr>
<tr>
<td>Philosophy and Law</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 311</td>
<td>Philosophy of Law</td>
<td>3</td>
</tr>
<tr>
<td>Select two courses from the following: 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 323</td>
<td>Classical Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL 324</td>
<td>Modern Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL 327</td>
<td>Contemporary Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>GOVT 428</td>
<td>Advanced Democratic Theory</td>
<td></td>
</tr>
<tr>
<td>GOVT 448</td>
<td>Ethics and International Politics</td>
<td></td>
</tr>
<tr>
<td>Electives in Philosophy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select three electives from any philosophy courses including those listed above that are not used to meet another requirement</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>33</td>
</tr>
</tbody>
</table>

1. When the subject matter is appropriate and with the prior written approval of the undergraduate director, PHIL 391 Special Topics in Philosophy, PHIL 421 Seminar (Mason Core) (p. 142), PHIL 422 Honors Seminar (Mason Core) (p. 142), or PHIL 425 Independent Study may be used to fulfill this requirement.
2. Only with departmental approval.

Concentration in Philosophy, Politics, and Economics (PPE)
This is a high credit concentration for students interested in a program that explores the interdisciplinary connections between philosophy, political science, and economics.

Students pursuing this concentration, similar to all students pursuing a BA in philosophy, must complete at least 33 credits in philosophy earning a minimum grade of 2.00 in each course. No course may be used to fulfill more than one requirement. In addition to the specific courses listed below, other relevant courses may be applied to the requirements for this concentration with prior written approval of the undergraduate director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 173</td>
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</tr>
<tr>
<td>History of Philosophy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 301</td>
<td>History of Western Philosophy: Ancient</td>
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</tr>
<tr>
<td>PHIL 303</td>
<td>History of Western Philosophy: Modern</td>
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<tr>
<td>Analytic Tradition</td>
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<tr>
<td>Select one course from the following: 1</td>
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<tr>
<td>PHIL 313</td>
<td>Philosophy of Religion 2</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 332</td>
<td>Twentieth-Century Analytic Philosophy</td>
<td></td>
</tr>
<tr>
<td>PHIL 333</td>
<td>American Philosophy: Pragmatism</td>
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<tr>
<td>PHIL 338</td>
<td>Philosophy, Race, and Gender 2</td>
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<tr>
<td>PHIL 355</td>
<td>Theories of Ethics</td>
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<tr>
<td>PHIL 356</td>
<td>Philosophy of Art 2</td>
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</tr>
<tr>
<td>PHIL 357</td>
<td>Philosophy of the Social Sciences 2</td>
<td></td>
</tr>
<tr>
<td>PHIL 358</td>
<td>Ethics and Economics</td>
<td></td>
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<tr>
<td>PHIL 371</td>
<td>Philosophy of Natural Sciences</td>
<td></td>
</tr>
<tr>
<td>PHIL 373</td>
<td>Theory of Knowledge</td>
<td></td>
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<tr>
<td>PHIL 374</td>
<td>Philosophy of Mind</td>
<td></td>
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<tr>
<td>PHIL 411</td>
<td>Theories of Decision</td>
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<tr>
<td>Continental Tradition</td>
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<tr>
<td>Select one course from the following: 1</td>
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<tr>
<td>PHIL 313</td>
<td>Philosophy of Religion 2</td>
<td>3</td>
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<tr>
<td>PHIL 325</td>
<td>Karl Marx’s Social and Political Thought</td>
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<td>PHIL 335</td>
<td>Nineteenth-Century Philosophy</td>
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</tr>
<tr>
<td>PHIL 336</td>
<td>Twentieth-Century Continental Thought: Existentialism</td>
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<tr>
<td>PHIL 337</td>
<td>Twentieth-Century Continental Thought: Phenomenology</td>
<td></td>
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<tr>
<td>PHIL 338</td>
<td>Philosophy, Race, and Gender 2</td>
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<tr>
<td>PHIL 340</td>
<td>Hermeneutic Philosophy</td>
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<tr>
<td>Philosophy and Law</td>
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<td>PHIL 311</td>
<td>Philosophy of Law</td>
<td>3</td>
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<tr>
<td>Select two courses from the following: 6</td>
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<tr>
<td>PHIL 323</td>
<td>Classical Western Political Theory</td>
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<tr>
<td>PHIL 324</td>
<td>Modern Western Political Theory</td>
<td></td>
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<tr>
<td>PHIL 327</td>
<td>Contemporary Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>GOVT 428</td>
<td>Advanced Democratic Theory</td>
<td></td>
</tr>
<tr>
<td>GOVT 448</td>
<td>Ethics and International Politics</td>
<td></td>
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Required Courses for Concentration

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
<td>3</td>
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<tr>
<td>GOVT/PHIL 324</td>
<td>Modern Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT/PHIL 327</td>
<td>Contemporary Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 422</td>
<td>Constitutional Interpretation</td>
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<tr>
<td>PHIL 357</td>
<td>Philosophy of the Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL 371</td>
<td>Philosophy of Natural Sciences</td>
<td></td>
</tr>
<tr>
<td>PHIL 358</td>
<td>Ethics and Economics</td>
<td>3</td>
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<tr>
<td>ECON 412</td>
<td>Game Theory and Economics of Institutions</td>
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<tr>
<td>PHIL 411</td>
<td>Theories of Decision</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 467</td>
<td>Current Issues in Economic Policy</td>
<td>3</td>
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<tr>
<td>PHIL 460</td>
<td>Senior Seminar in Philosophy, Politics, and Economics</td>
<td>3</td>
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</tbody>
</table>

Total Credits: 54

1 When the subject matter is appropriate and with the prior written approval of the undergraduate director, PHIL 391 Special Topics in Philosophy, PHIL 421 Seminar (Mason Core) (p. 142), PHIL 422 Honors Seminar (Mason Core) (p. 142), or PHIL 425 Independent Study may be used to fulfill this requirement.

2 Only with departmental approval.

Writing-Intensive Requirement

The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. All senior seminars (PHIL 421 Seminar (Mason Core) (p. 142), PHIL 422 Honors Seminar (Mason Core) (p. 142)) in philosophy are writing intensive. Philosophy majors should consult the undergraduate director for other courses that can be taken to fulfill this requirement.

Upper Level Requirement

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHIL (p. 2044)</td>
<td>1 Select 3 credits from the following:</td>
<td>3</td>
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<tr>
<td>RELI (p. 2144)</td>
<td>1 Note that the following courses may not be used to fulfill this</td>
<td></td>
</tr>
<tr>
<td></td>
<td>requirement:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PHIL 323 Classical Western Political Theory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PHIL 324 Modern Western Political Theory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PHIL 327 Contemporary Western Political Theory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PHIL 393 Humanities College to Career</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PHIL 460 Senior Seminar in Philosophy, Politics, and Economics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.</td>
<td></td>
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</table>

Social and Behavioral Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH (p. 1212)</td>
<td>1 Select 3 credits of social and behavioral sciences from the</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>following (additional to the Mason Core social and behavioral sciences requirement)</td>
<td></td>
</tr>
<tr>
<td>CRIM (p. 1514)</td>
<td>1 All senior seminars (PHIL 421 Seminar (Mason Core) (p. 142), PHIL 422 Honors Seminar (Mason Core) (p. 142)) in philosophy are writing intensive. Philosophy majors should consult the undergraduate director for other courses that can be taken to fulfill this requirement.</td>
<td></td>
</tr>
<tr>
<td>ECON (p. 1564)</td>
<td>1 Only with departmental approval.</td>
<td></td>
</tr>
<tr>
<td>GOVT (p. 1774)</td>
<td>2 Note that the following courses may not be used to fulfill this</td>
<td></td>
</tr>
<tr>
<td>HIST (p. 1818)</td>
<td>2 requirement:</td>
<td></td>
</tr>
<tr>
<td>LING (p. 1896)</td>
<td>2 • PHIL 323 Classical Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PSYC (p. 2074)</td>
<td>2 • PHIL 324 Modern Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>SOCI (p. 2167)</td>
<td>2 • PHIL 327 Contemporary Western Political Theory</td>
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</tr>
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<td></td>
<td>• PHIL 393 Humanities College to Career</td>
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</tr>
<tr>
<td></td>
<td>• PHIL 460 Senior Seminar in Philosophy, Politics, and Economics</td>
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</tbody>
</table>

or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
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<tr>
<td>GGS 301</td>
<td>Political Geography</td>
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<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
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<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
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</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>

College Level Requirements for the BA Degree
The two courses used to fulfill the combined college and Mason Core requirements must be from different disciplines in the social and behavioral sciences.

Histor 100 History of Western Civilization (Mason Core) (p. 142) and History 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

**Foreign Language**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Intermediate-level proficiency in one foreign language, fulfilled by.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
<td></td>
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<tr>
<td></td>
<td>Or completing the following ASL three course sequence:</td>
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<tr>
<td></td>
<td>EDSE 115 American Sign Language (ASL) I</td>
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</tr>
<tr>
<td></td>
<td>EDSE 116 American Sign Language (ASL) II</td>
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<tr>
<td></td>
<td>EDSE 219 American Sign Language (ASL) III</td>
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</tbody>
</table>

Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Non-Western Culture**

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
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<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
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<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
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<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
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<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
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<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td>3</td>
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<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
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<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<td>Geography of the Soviet Succession States</td>
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<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
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<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
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<td>Islam and Politics</td>
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<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
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<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>HIST 262</td>
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<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>Rise of Russia (Mason Core) (p. 142)</td>
<td>3</td>
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<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
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<td>HIST 353</td>
<td>History of Traditional China</td>
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<td>Modern China (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>Post-1949 China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
</tr>
<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142) (3-6)</td>
<td>3-6</td>
</tr>
<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>3</td>
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<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td>3</td>
</tr>
<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>3</td>
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<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
</tr>
<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
</tr>
<tr>
<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
<td>3</td>
</tr>
<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 375</td>
<td>Qur’an and Hadith</td>
<td>3</td>
</tr>
<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
<td>3</td>
</tr>
<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

### Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Exploration Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Integration Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>40</td>
</tr>
</tbody>
</table>

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.

### Honors

**Honors in the Major**

Highly-qualified students may apply to the honors program in the major. Students can apply in their second semester as a junior, before they have completed 90 credits and should have a minimum GPA of 3.50 in the major. Eligible students should submit a transcript, one letter of
recommendation from a member of the philosophy faculty, and one writing sample, a paper from one of the student's courses in philosophy.

Students pursuing honors in the major complete 6 credits of honors coursework chosen from PHIL 422 Honors Seminar (Mason Core) (p. 142) or PHIL 425 Independent Study. To graduate with honors in philosophy, students must complete these courses with a minimum GPA of 3.50.

**Accelerated Master's**

The accelerated master's programs in the list below specify the BA in philosophy as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees [http://catalog.gmu.edu/programs/#filter=filter_24](http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

**Philosophy, BA/Philosophy, Accelerated MA**

**Overview**

Highly qualified Mason philosophy majors may apply to the accelerated master's degree program. If accepted, students will be able to earn a BA (p. 442) and a MA in philosophy (p. 451) after satisfactory completion of as few as 145 credits, sometimes within five years.

For more detailed information, see AP.6 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in philosophy (p. 451), see Application Requirements and Deadlines [http://philosophy.gmu.edu/programs/apply/MA-ACEL-PHIL](http://philosophy.gmu.edu/programs/apply/MA-ACEL-PHIL) on the departmental web site.

**Accelerated Option Requirements**

While undergraduate students, accelerated master's students complete six credits of PHIL courses at the 600-level (chosen in consultation with the graduate program director and indicated on the Accelerated Master's Program Application) with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements, taking 25 graduate credits beyond the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional credits of PHIL coursework at the 600-level as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 1.5 hours of graduation. See AP.1.4.4 Graduation Course Enrollment by Undergraduates (p. 79).

**Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)**

**Overview**

Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Selected Majors**

Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site [http://mais.gmu.edu/programs/la-mais-isin/application](http://mais.gmu.edu/programs/la-mais-isin/application).

**Accelerated Option Requirements**

While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master's Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6
As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

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<th>Credits</th>
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<td>WMST 610</td>
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<td></td>
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<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Bachelor’s Degree (selected)/ Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)

Overview

Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Selected Majors

- Art history (p. 394)
- Philosophy (p. 442)
- Conflict analysis and resolution (p. 936)
- Global affairs (p. 523)
- History (p. 402)
- Religious studies (p. 491)
- Russian and Eurasian studies (p. 568)
- Sociology (p. 507)
- Anthropology (p. 497)

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious studies (p. 496).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-sisin/application).

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
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</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
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<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only
Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

Overview
Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master's in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Selected Majors
Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor. No course may be used to fulfill more than one requirement.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 450) tab.

Core Course in history of philosophy

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 301</td>
<td>History of Western Philosophy: Ancient</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 303</td>
<td>History of Western Philosophy: Modern</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3
Select five electives in philosophy. At least 9 of the elective credits must be at the 300 level or above. (p. 2044)

Total Credits 15

One elective course may be chosen from other coursework in philosophy with prior written approval of the undergraduate director.

Philosophy, MA

Banner Code: LA-MA-PHIL

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the MA in philosophy, see Application Requirements and Deadlines (http://philosophy.gmu.edu/programs/LA-MA-PHIL/application).

Policies

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Requirements

Degree Requirements

Total credits: 31

Students pursuing this degree must successfully complete 31 credits, which may include a thesis. They may choose a course of study that focuses on traditional and contemporary philosophy or choose to complete one of three concentrations. Students need to identify an advisor on entering the program and meet regularly with that advisor during their course of study.
For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**MA with a Focus on Traditional and Contemporary Philosophy**

The focus in traditional and contemporary philosophy is for students who want to deepen their understanding of philosophical issues and for students who are preparing to pursue doctoral studies in philosophy or related fields, e.g. political theory, gender studies.

Students may apply up to 9 credits from other departments toward the degree with focus on traditional and contemporary philosophy with prior written approval of their advisor.

**Code** | **Title** | **Credits**
--- | --- | ---
**Proseminar**<br>PHIL 600 | Proseminar in Philosophy | 1

**Ancient or Medieval Philosophy**

Select one course from the following: 3

- PHIL 603: Aristotle: Selected Works
- PHIL 681: Figures and Topics in Ancient Philosophy
- PHIL 721: Advanced Seminar in Philosophy

**Modern Philosophy**

Select one course from the following: 3

- PHIL 608: Hegel's Phenomenology of the Spirit
- PHIL 682: Figures and Topics in Early Modern Philosophy
- PHIL 721: Advanced Seminar in Philosophy

**Contemporary Philosophy**

Select one course from the following: 3

- PHIL 615: Postmodernist Thought
- PHIL 616: Phenomenology
- PHIL 683: Contemporary Philosophical Figures
- PHIL 694: Special Topics in Contemporary Philosophy
- PHIL 721: Advanced Seminar in Philosophy

**Advanced Seminar**

Select one from the following: 3

- PHIL 720: Nietzsche and his Readers
- PHIL 721: Advanced Seminar in Philosophy
- PHIL 733: Current Issues in Cognitive Science

**Electives in Philosophy**

Select four to six electives in philosophy 3 12-18

**Optional Thesis**

Three or six credits of<br>PHIL 799: Thesis 4

Total Credits: 31

---

1. This course should be completed in the first fall semester in which the student is enrolled in the MA program.
2. May be taken when the topic is relevant and with approval of advisor.
3. Students who choose to write a thesis (3 or 6 credits) will take correspondingly fewer electives.
4. Students who choose to write a thesis (3 or 6 credits) will take correspondingly fewer electives. Students are encouraged to use courses from around the university in disciplines relevant to their areas of interest, subject to the prior written approval of their academic advisor.
5. Students must follow the thesis enrollment policy of the university and once enrolled in PHIL 799 Thesis, maintain continuous enrollment as specified in Academic Policies.

**Concentration in Ethics and Public Affairs (ETPA)**

The concentration in ethics and public affairs is designed for professionals who want to combine the study of ethics and the analysis of social and public policies in a variety of settings, including business, health care, biomedical technology, law, or government.

**Code** | **Title** | **Credits**
--- | --- | ---
**Proseminar**<br>PHIL 600 | Proseminar in Philosophy | 1

**History of Philosophy** 2

- PHIL 640: History of Ethical Theory | 3
- PHIL 603: Aristotle: Selected Works 3
- PHIL 608: Hegel's Phenomenology of the Spirit

**Public Administration**

- PUAD 540: Public Policy Process | 3

**Ethics**

Select three courses from the following: 3 9

- PHIL 642: Biomedical Ethics
- PHIL 643: Environmental Ethics
- PHIL 644: Business and Organizational Ethics
- PHIL 645: Research Ethics

**Electives**

Select two to four electives from the following or from other relevant courses: 4 6-12

- PUAD 700: Ethics and Public Administration
- EVPP 635: Environment and Society

**Optional Thesis**

Three or six credits of<br>PHIL 799: Thesis 5

Total Credits: 31

---

1. This course should be completed in the first fall semester in which the student is enrolled in the MA program.
2. Depending on the topic, PHIL 681 Figures and Topics in Ancient Philosophy, PHIL 682 Figures and Topics in Early Modern Philosophy, or PHIL 721 Advanced Seminar in Philosophy may be applied to this concentration with prior written permission of the graduate director.
3. Other courses may be used to fulfill this requirement where appropriate and with prior written approval of the student’s academic advisor.
4. Students who choose to write a thesis (3 or 6 credits) will take correspondingly fewer electives. Students are encouraged to use courses from around the university in disciplines relevant to their areas of interest, subject to the prior written approval of their academic advisor.
5. Students must follow the thesis enrollment policy of the university and once enrolled in PHIL 799 Thesis, maintain continuous enrollment as specified in Academic Policies.

**Concentration in Philosophy and Cultural Theory (PHCT)**

The concentration in philosophy and cultural theory is especially for students interested in pursuing a doctorate in cultural studies.
Students may apply up to 9 credits from other departments toward this concentration with prior written approval of their advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 600</td>
<td>Proseminar in Philosophy ¹</td>
<td>1</td>
</tr>
<tr>
<td>PHIL 603</td>
<td>Aristotle: Selected Works</td>
<td>1</td>
</tr>
<tr>
<td>PHIL 681</td>
<td>Figures and Topics in Ancient Philosophy</td>
<td>2</td>
</tr>
<tr>
<td>PHIL 721</td>
<td>Advanced Seminar in Philosophy ²</td>
<td>2</td>
</tr>
<tr>
<td>PHIL 608</td>
<td>Hegel's Phenomenology of the Spirit</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 682</td>
<td>Figures and Topics in Early Modern Philosophy</td>
<td>2</td>
</tr>
<tr>
<td>PHIL 721</td>
<td>Advanced Seminar in Philosophy ²</td>
<td>2</td>
</tr>
<tr>
<td>PHIL 615</td>
<td>Postmodernist Thought</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 616</td>
<td>Phenomenology</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 683</td>
<td>Contemporary Philosophical Figures</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 694</td>
<td>Special Topics in Contemporary Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 721</td>
<td>Advanced Seminar in Philosophy ²</td>
<td>2</td>
</tr>
</tbody>
</table>

**Proseminar**

**Ancient or Medieval Philosophy**

Select one course from the following:

| PHIL 603 | Aristotle: Selected Works                           | 1       |
| PHIL 681 | Figures and Topics in Ancient Philosophy             | 2       |

**Modern Philosophy**

Select one course from the following:

| PHIL 603 | Aristotle: Selected Works                           | 1       |
| PHIL 681 | Figures and Topics in Ancient Philosophy             | 2       |

**Contemporary Philosophy**

Select one course from the following:

| PHIL 615 | Postmodernist Thought                                | 3       |
| PHIL 616 | Phenomenology                                        | 3       |
| PHIL 683 | Contemporary Philosophical Figures                   | 3       |
| PHIL 694 | Special Topics in Contemporary Philosophy            | 3       |

**Advanced Seminar**

Select one from the following:

| PHIL 720 | Nietzsche and his Readers                            | 3       |
| PHIL 721 | Advanced Seminar in Philosophy                       | 3       |
| PHIL 733 | Current Issues in Cognitive Science                  | 3       |

**Cultural Studies**

| CULT 802 | Histories of Cultural Studies                        | 6       |

Select one elective in consultation with an advisor.

**Electives in Philosophy**

Select two to four electives in philosophy ³ 6-12

**Optional Thesis**

Three or six credits of

| PHIL 799 | Thesis ⁴                                              | 6       |

Total Credits 31

1. This course should be completed in the first fall semester in which the student is enrolled in the MA program.
2. May be taken when the topic is relevant and with approval of advisor.
3. Students who choose to write a thesis (3 or 6 credits) will take correspondingly fewer electives.
4. Students must follow the thesis enrollment policy of the university and once enrolled in PHIL 799 Thesis, maintain continuous enrollment as specified in Academic Policies.

**Dual Degree Options**

**Philosophy, MA and Interdisciplinary Studies, MAIS Dual Degree**

Students interested in pursuing a dual master's program linking philosophy and another discipline should discuss their interest with the graduate program directors of both programs and review the university policies regarding Individualized Dual Master's Degree Programs. Students approved to pursue dual master's study linking the MA philosophy degree and the Interdisciplinary Studies, MAIS with a concentration in women and gender studies will complete WMST 630 Feminist Theories across the Disciplines/PHIL 658 Feminist Theory and 3 additional credits of WMST courses approved by the Department of Philosophy to apply to the philosophy degree as elective credit. Six credits of approved PHIL credits will apply to the MAIS degree as elective credit. Application to the second master's program should be pursued with consultation of the directors of both programs. Admission to the second master's program will require that the student has met the minimum prerequisites for admission to the second program. If a student lacks the minimum prerequisites and seeks to be admitted to a second master’s program, the director of the second program may identify ways in which the prerequisite can be completed prior to admission.

**Accelerated Master's**

**Philosophy, BA/Philosophy, Accelerated MA**

**Overview**

Highly qualified Mason philosophy majors may apply to the accelerated master's degree program. If accepted, students will be able to earn a BA (p. 442) and a MA in philosophy (p. 451) after satisfactory completion of as few as 145 credits, sometimes within five years.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in philosophy (p. 451), see Application Requirements and Deadlines (http://philosophy.gmu.edu/programs/application/LA-MA-ACEL-PHIL) on the departmental web site.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete six credits of PHIL courses at the 600-level (chosen in consultation with the graduate program director and indicated on the Accelerated Master’s Program Application) with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.
As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements, taking 25 graduate credits beyond the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional credits of PHIL coursework at the 600-level as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Political Philosophy Minor**

**Banner Code:** PPHL

**Academic Advising**

B465 Robinson Hall
Fairfax Campus

Website: philosophy.gmu.edu/programs/la-minor-la-pphl

The minor provides students with an intensive study of political philosophy and political theory. Students take courses in the history of political philosophy; the moral evaluation of political institutions; the ethical, social, and political issues raised by globalization; and the conceptual foundations of democracy and human rights. Through this coursework, students are able to study this field from a variety of interdisciplinary perspectives. They develop a deeper philosophical perspective on political institutions and have a solid foundation for further graduate study in philosophy, government, or policy studies.

**Faculty**

Cherubin, De Nys, Mandaville, Miller (Director)

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 454) tab.

---

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 323 or GOVT 323</td>
<td>Classical Western Political Theory</td>
<td>6</td>
</tr>
<tr>
<td>PHIL 324 or GOVT 324</td>
<td>Modern Western Political Theory</td>
<td>6</td>
</tr>
<tr>
<td>PHIL 327 or GOVT 327</td>
<td>Contemporary Western Political Theory</td>
<td>6</td>
</tr>
</tbody>
</table>

**Electives**

Select three elective courses from the courses below or above (if not used to meet the core requirement): 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 427</td>
<td>Feminist Political Thought</td>
<td>9</td>
</tr>
<tr>
<td>PHIL 325</td>
<td>Karl Marx’s Social and Political Thought</td>
<td>9</td>
</tr>
<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>9</td>
</tr>
<tr>
<td>GOVT 329</td>
<td>Issues in Political Theories and Values</td>
<td>9</td>
</tr>
<tr>
<td>GOVT 420</td>
<td>American Political Thought</td>
<td>9</td>
</tr>
<tr>
<td>GOVT 428</td>
<td>Advanced Democratic Theory</td>
<td>9</td>
</tr>
<tr>
<td>GOVT 448</td>
<td>Ethics and International Politics</td>
<td>9</td>
</tr>
</tbody>
</table>

1 Special topics courses and independent studies courses, when relevant, may also be used to fulfill elective credits with prior written approval of the director.

**Department of Psychology**

2086 David King Hall
Fairfax Campus

Phone: 703-993-1384
Website: psychology.gmu.edu

**Undergraduate Programs**

The department offers a bachelor of arts degree and a bachelor of science degree in psychology. All psychology majors complete a broad range of courses from social and abnormal psychology to cognitive and biopsychology. Students can also choose from special topics courses such as forensic psychology and romantic relationships.

In addition to the general degree in psychology, students can choose a concentration in clinical psychology, cognitive and behavioral neuroscience, developmental psychology, education psychology, forensic psychology, health psychology, human factors and applied cognition, or work and organizational psychology. These concentrations may be of interest to students who are planning to attend graduate school.

Students in psychology may have the opportunity to do research with a faculty member or do a service learning course, which allows them to put into practice what they've learned in the classroom.

Students interested in graduate study should be aware that undergraduate research experience and letters of recommendation are major factors for admission to graduate study. Such students should distribute courses across a number of areas in psychology and work...
closely with one or more professors on individual projects during their junior and senior years.

**Minors**

The department offers minors in psychology, brain, body, and behavior, clinical psychology, developmental psychology, forensic psychology, health psychology, and industrial/organizational psychology. These minors are available to students in any major in the university.

**Bachelor’s/Accelerated Master’s Program**

The department offers highly-qualified undergraduate majors the opportunity to apply to an accelerated master’s degree program in psychology with a concentration in cognitive and behavioral neuroscience (p. 483). If accepted, students will be able to earn both an undergraduate degree and the master’s degree with a concentration in cognitive and behavioral neuroscience after satisfactory completion of 146 credits, generally within five years.

**Graduate Programs**

The graduate programs in psychology are distinguished by an emphasis on basic research and the application of research to solving practical problems in families, schools, industry, government, and health care settings.

The department offers master’s and doctoral degrees with concentrations in applied developmental psychology, cognitive and behavioral neuroscience, human factors/applied cognition, and industrial/organizational psychology. It also offers a doctoral degree with a concentration in clinical psychology.

**Funding**

The department offers teaching and research assistantships, which are awarded on a competitive basis. Other sources of funding such as grants, loans, and employment on campus are also available. Students awarded assistantships must register for a minimum of six credits a semester and show satisfactory progress toward their degree.

**Certificates**

The department offers graduate certificates in applied psychology, with concentrations in transportation human factors and usability, and cognitive neuroscience. These have been designed to meet the needs of students who desire to upgrade their skills and earn a certificate as evidence of their skill attainment. Students may take these as stand-alone certificates or pursue them concurrently with a graduate degree program. Part of the certificate course work may be able to be applied to the degree. Students must apply and be accepted to a graduate certificate program.

The certificate programs are open to all students who hold a bachelor’s degree from an accredited university and meet the admissions requirements for the master’s degree in psychology with a concentration in human factors and applied cognition.

**Non-Degree Status**

Applicants who have not been admitted to a graduate degree program or a certificate program may apply for non-degree status. Non-degree students must meet the same admission requirements as degree-seeking students. Non-degree status is not intended as a way to qualify for admission as a degree-seeking student.

While it may be possible to transfer the credits earned in non-degree status to a degree program, such transfers are not automatic. They require the approval of the graduate director and the dean. If approved, a maximum of 12 credits earned in non-degree status may be applied to a degree program. Non-degree students who intend to transfer their credits to a degree program should discuss this with the appropriate program director.

**Faculty**

**Department Faculty**

**Professors**

Cortina, Denham, Esposito-Smythers, Helton, Kashdan, Klimoski, Mandes, Pasnak, Riskind, Tangney, Tetrick, Winsler (associate chair for graduate studies), Zaccaro

**Research Professors**

Olds

**Associate Professors**

Baldwin (director, Human Factors Program), Bitler, Buffardi, Cattaneo (director, Clinical Program), Chaplin, Curby (director, Applied Developmental Program), Dalal, Fisher, Flinn (director, Cognitive and Behavioral Neuroscience Program), Kaplan, King, McDonald, McKnight, Peterson, Renshaw (Chair), Rowe, Shaw, Short, J. Thompson

**Research Associate Professors**

Stuewig

**Assistant Professors**

Adams, Goldstein, Kornienko, Kuykendall, Le, P. Lee, Y. Lee, Wiener, Wiese,

**Term Assistant Professors**

Chronsniak, Dumas, Hurley, Mehlenbeck (director, Center for Psychological Services), Murdoch (associate chair for undergraduate studies), Ramsdell

**Term Assistant Professors**

Sontag

**Affiliates**

Eby, Hunt, Bachus

**Programs**

- Applied Industrial and Organizational Psychology, MPS
- Applied Psychology Graduate Certificate
- Brain, Body and Behavior Minor
- Clinical Psychology Minor
- Cognitive Neuroscience Graduate Certificate
- Developmental Psychology Minor
- Forensic Psychology Minor
- Health Psychology Minor
- Industrial / Organizational Psychology Minor
- Psychology Minor
- Psychology, BA
- Psychology, BS
George Mason's online Master of Professional Studies in Applied Industrial and Organizational Psychology provides instruction in research-backed methods and understanding of data and analytics. It is intended to give HR professionals and business professionals the skills they need to foster a culture where each employee feels empowered and motivated to contribute new ideas, effect change, and do their best work every day. Students learn how to assess and evaluate candidates to determine their fit for the company and specific positions, identify employees' individual motivations, establish meaningful evaluations and reward systems, and improve training and performance programs. Main areas of study focus on understanding and applying concepts in: research and data analytic methods, evidence-based practices, and client communication skills.

**Admissions & Policies**

**Admissions**

The online master's in organizational psychology program accepts applications on a rolling basis and is currently accepting applications. You can apply here (https://apply-now.force.com/?acctid=0013200001GuY7C).

**Policies**

For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Requirements**

**Degree Requirements**

Total credits: 30

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies tab.

### Fundamentals of Industrial/Organizational Psychology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 636</td>
<td>Survey of Industrial Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 639</td>
<td>Survey of Organizational Processes</td>
<td>3</td>
</tr>
</tbody>
</table>

### Principles of Research and Data Analysis in Psychology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 603</td>
<td>Psychological Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 601</td>
<td>Applied Data Analysis in Psychology I</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 602</td>
<td>Applied Data Analysis in Psychology II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

### Application of Evidenced-Based Principles in Psychology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 792</td>
<td>Psychology Practicum</td>
<td>6</td>
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Total Credits: 6

### Electives

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>PSYC 618</td>
<td>Applied Leadership and Teamwork</td>
<td>6</td>
</tr>
<tr>
<td>PSYC 620</td>
<td>Motivation and Well-Being</td>
<td></td>
</tr>
<tr>
<td>PSYC 626</td>
<td>Organizational Change and Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 627</td>
<td>Performance Management</td>
<td></td>
</tr>
<tr>
<td>PSYC 628</td>
<td>Benefits and Compensation</td>
<td></td>
</tr>
<tr>
<td>PSYC 629</td>
<td>Workplace Training</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

**Applied Psychology Graduate Certificate**

**Banner Code: LA-CERG-APSY**

**Academic Advising**

2086 David King Hall
Fairfax Campus

Email: psycgrad@gmu.edu
Website: psychology.gmu.edu/programs/la-cerg-apsy

**Admissions & Policies**

**Admissions**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

**Policies**

For policies governing all graduate certificates, see AP 6.8 Requirements for Graduate Certificates (p. 94).
Certificate Requirements
Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Students pursuing this graduate certificate must choose either a concentration in transportation human factors or a concentration in usability.

Concentration in Transportation Human Factors (TRHF)

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 530</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 645</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 734</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

1 Only when aviation-related topic is approved for this concentration by the program director.

Electives

<table>
<thead>
<tr>
<th>Electives</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two electives</td>
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<tr>
<td>PSYC 597</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 768</td>
<td>1</td>
</tr>
<tr>
<td>SYST 560</td>
<td>1</td>
</tr>
<tr>
<td>SYST 671</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 6

1 Only when topic is approved for this concentration.

Concentration in Usability (UBTY)

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 530</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 645</td>
<td>3</td>
</tr>
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</table>

Total Credits: 6

Electives

<table>
<thead>
<tr>
<th>Electives</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three electives</td>
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<tr>
<td>PSYC 597</td>
<td>1</td>
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<td>PSYC 654</td>
<td>1</td>
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<td>PSYC 734</td>
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</tr>
<tr>
<td>PSYC 768</td>
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<tr>
<td>EDIT 526</td>
<td>1</td>
</tr>
<tr>
<td>EDIT 571</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 9

1 Only when topic is approved for this concentration.

Admissions & Policies

Brain, Body and Behavior Minor

Banner Code: BBB

Academic Advising

2086 David King Hall
Fairfax Campus

Email: upsyc@gmu.edu
Website: psychology.gmu.edu/programs/la-minor-psyc-bbb/overview

The courses included in this minor emphasize the behavioral consequences of both normal and abnormal neuronal and physiological processes. These in-depth courses will broaden the students' knowledge in understanding brain and behavior, specifically, but not exclusively, the cognitive aspects.

Requirements

Minor Requirements

Total credits: 21

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 457) tab.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 373</td>
<td>Biopsychology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 375</td>
<td>Brain and Sensory Processes</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 376</td>
<td>Brain and Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 12

Electives

<table>
<thead>
<tr>
<th>Electives</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select a minimum of 9 credits from the following:</td>
<td>9</td>
</tr>
<tr>
<td>PSYC 309</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 460</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 480</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 472</td>
<td>2</td>
</tr>
</tbody>
</table>
Clinical Psychology Minor

Banner Code: CLPY

Academic Advising
2086 David King Hall
Fairfax Campus
Email: ugpsyc@gmu.edu
Website: psychology.gmu.edu/programs/la-minor-psyc-clpy

The required courses of the minor provide a foundation in psychology and focus on assessment and treatment of distress and dysfunction. The electives provide in-depth knowledge of normal development, psychological theories, psychological disorders, and treatment techniques.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete 18 credits of psychology with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 19

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 458) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 301</td>
<td>Research Methods in Psychology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 321</td>
<td>Clinical Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits

13

Electives

Select at least two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142) (or PSYC 313 or PSYC 314)</td>
<td>6</td>
</tr>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 322</td>
<td>Behavior Modification</td>
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<tr>
<td>PSYC 324</td>
<td>Personality Theory</td>
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<tr>
<td>PSYC 326</td>
<td>Therapeutic Communication Skills</td>
<td></td>
</tr>
<tr>
<td>PSYC 414</td>
<td>Behavior Disorders of Childhood</td>
<td></td>
</tr>
<tr>
<td>PSYC 423</td>
<td>Group Psychotherapy Techniques</td>
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<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics 1</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits

6

1. When topic is related to clinical psychology approved by the psychology department.

Cognitive Neuroscience Graduate Certificate

Banner Code: LA-CERG-CNEU

Academic Advising
2086 David King Hall
Fairfax Campus
Email: psycgrad@gmu.edu
Website: psychology.gmu.edu/programs/la-cerg-cneu

The Department of Psychology offers a graduate certificate in cognitive neuroscience under the auspices of the program in Human Factors/ Applied Cognition.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the graduate certificate in cognitive neuroscience, see Application Requirements and Deadlines (http://psychology.gmu.edu/programs/LA-CERG-CNEU/application).
Requirements

Certificate Requirements

Total credits: 18

This certificate may be pursued on a full- or part-time basis.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 530</td>
<td>Cognitive Engineering: Cognitive Science Applied to Human Factors</td>
<td>3</td>
</tr>
</tbody>
</table>

Six credits of

| PSYC 768 | Advanced Topics in Cognitive Science ¹ | 6       |

Total Credits 9

¹ Topic must be relevant to cognitive neuroscience. This course is repeatable when the specific topic is different.

Additional Course

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 527</td>
<td>Introduction to Neurobiology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 531</td>
<td>Mammalian Neurobiology</td>
<td></td>
</tr>
<tr>
<td>PSYC 558</td>
<td>Neuronal Bases of Learning and Memory</td>
<td></td>
</tr>
<tr>
<td>PSYC 559</td>
<td>Behavioral Chemistry</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Electives

Select a minimum of 12 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 414</td>
<td>Behavior Disorders of Childhood</td>
<td></td>
</tr>
<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td></td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology ¹</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics ²</td>
<td></td>
</tr>
<tr>
<td>HDFS 200</td>
<td>Individual and Family Development (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

¹ When content is developmental, with approval.
² When topic is developmental, when approved by Psychology Associate Chair of Undergraduate Studies.

Developmental Psychology Minor

Banner Code: DVLP

Academic Advising

2086 David King Hall
Fairfax Campus

Email: ugpsyc@gmu.edu
Website: psychology.gmu.edu/programs/la-minor-psyc-dvlp

This minor is designed to provide students with an understanding of the ways in which humans change over time. Coursework provides for a broad foundation in psychology across the lifespan while also allowing for students to focus on a developmental period (e.g. childhood).

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 459) tab.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Electives

Select a minimum of 12 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 414</td>
<td>Behavior Disorders of Childhood</td>
<td></td>
</tr>
<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td></td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology ¹</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics ²</td>
<td></td>
</tr>
<tr>
<td>HDFS 200</td>
<td>Individual and Family Development (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

¹ When content is developmental, with approval.
² When topic is developmental, when approved by Psychology Associate Chair of Undergraduate Studies.

Forensic Psychology Minor

Banner Code: FPSY

Academic Advising

2086 David King Hall
Fairfax Campus

Email: ugpsyc@gmu.edu
Website: psychology.gmu.edu/programs/la-minor-psyc-fpsy

This minor is designed to supplement the study of psychology, criminology, or other justice-related areas with an overview of the
intersection of psychology and the criminal justice system. The minor focuses specifically on mental illness in the criminal justice system, the psychological experiences of victims, psychological science in the courtroom, and psychological factors related to criminal behavior.

### Admissions & Policies

#### Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements

Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 460) tab.

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100 Basic Concepts in Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 380 Introduction to Forensic Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 381 Mental Illness and Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 382 Psychology of Crime Victims</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 440 Forensic Psychology: Science and Pseudoscience</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 441 Criminal Behavior: Psychological and Neuropsychological Aspects</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 100 Introduction to Criminal Justice (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 461 Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 462 Selected Topics in Forensic Psychology</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>6</td>
</tr>
</tbody>
</table>

1 with Undergraduate Associate Chair approval

### Health Psychology Minor

Banner Code: HPSY

#### Academic Advising

2086 David King Hall
Fairfax Campus

Email: ugpsych@gmu.edu
Website: psychology.gmu.edu/programs/la-minor-psyc-hpsy

This minor is designed to help students better understand psychological factors that influence overall health. The courses provide instruction on factors that have the potential to impact both physical and psychological health. These include the roles of cognitive processes, health beliefs and behaviors, emotions, psychosocial circumstances and personality traits, all factors that may influence overall health and well-being.

### Admissions & Policies

#### Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 460) tab.

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100 Basic Concepts in Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 408 Psychological Fitness</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 417 Science of Well Being</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211 Developmental Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 301 Research Methods in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 321 Clinical Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 325 Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 372 Biopsychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 461 Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>COMM 304 Foundations of Health Communication</td>
<td>3</td>
</tr>
<tr>
<td>HEAL 230 Introduction to Health Behavior (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 309 Bioethics (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>GCH 325 Stress and Well-Being (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>9</td>
</tr>
</tbody>
</table>

1 When topic is related to health and well-being and approved by Psychology Associate Chair of Undergraduate Studies.
**Industrial/Organizational Psychology Minor**

Banner Code: IO

**Academic Advising**

2086 David King Hall
Fairfax Campus

Email: ugpsyc@gmu.edu
Website: psychology.gmu.edu/programs/la-minor-psyc-io

Develop further knowledge on topics such as leadership, occupational health, motivation, personality, research methods and more. Students will learn the foundations of work/organizational psychology including important theoretical aspects of the field.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 19

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 461) tab.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits

3

**Research Methods Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 300</td>
<td>Statistics in Psychology</td>
<td>3-4</td>
</tr>
<tr>
<td>PSYC 301</td>
<td>Research Methods in Psychology</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits

7-8

**Required Applied Psychology Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits

3

**Electives**

Select at least 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
<td>6</td>
</tr>
</tbody>
</table>

---

**Psychology, BA**

Banner Code: LA-BA-PSYC

2086 David King Hall
Fairfax Campus

Email: ugpsyc@gmu.edu
Website: psychology.gmu.edu/programs/la-ba-psyc

Students study behavior as it relates to health and well-being, child and adolescent development, education, social situations, the workplace, and the use of technology. Due to Mason's proximity to Washington, D.C. the department is especially active in research that informs public policy and national defense. Students who graduate from this program go on to work in a wide range of fields and positions, including human resources, data analysis, user interface design, and social media and marketing.

The BA in Psychology focuses on liberal arts and general education courses, including a foreign language requirement, within the psychology field.

**Admissions & Policies**

**Policies**

Students pursuing this degree must complete 37 credits within the major, with 24 credits at the 300 and 400 level.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 461) tab.

Students may choose to complete a concentration in forensic psychology, human factors and applied cognition, work and organizational psychology, clinical psychology, developmental psychology, educational psychology, or health psychology. Courses required for a concentration may simultaneously satisfy other degree requirements. The concentrations in forensic psychology, human factors...
and applied cognition, and work and organizational psychology meet the applied psychology requirement.

Students who have limited technology skills are encouraged to take IT 104 Introduction to Computing (Mason Core) (p. 142).

Core Courses in the Major

Basic Courses in Psychology

Students must have a minimum GPA of 2.00 in these courses with a minimum grade of 1.67 (C-) in each one. Courses taken to fulfill these requirements may simultaneously satisfy a concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Foundational Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 317</td>
<td>Cognitive Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one option from the following: 3-6

Option 1:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Option 2:

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td></td>
</tr>
</tbody>
</table>

Research Methods Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 300</td>
<td>Statistics in Psychology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 301</td>
<td>Research Methods in Psychology</td>
<td>4</td>
</tr>
</tbody>
</table>

Biopsychology

Select one from the following: 3-6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 372</td>
<td>Biopsychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 375</td>
<td>Brain and Sensory Processes</td>
<td></td>
</tr>
<tr>
<td>PSYC 376</td>
<td>Brain and Behavior</td>
<td></td>
</tr>
</tbody>
</table>

Professional Development

Select one from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 399</td>
<td>Psychology: College to Career</td>
<td></td>
</tr>
<tr>
<td>PSYC 327</td>
<td>Psychology in the Community</td>
<td></td>
</tr>
<tr>
<td>PSYC 427</td>
<td>Community Engagement for Social Change (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 491</td>
<td>Psychology Honors II</td>
<td></td>
</tr>
<tr>
<td>PSYC 492</td>
<td>RS: Psychology Honors III</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics (with Undergraduate Associate Chair Approval)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 26-32

Applied Psychology Courses or Optional Concentration

Alternatively, students may earn a concentration in forensic psychology, human factors and applied cognition, or work and organizational psychology to satisfy this requirement.

Applied Psychology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
<td></td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 340</td>
<td>Human Factors Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 381</td>
<td>Mental Illness and Criminal Justice</td>
<td></td>
</tr>
<tr>
<td>PSYC 427</td>
<td>Community Engagement for Social Change (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6-7

1 PSYC 427 may count for both the Applied Psychology and the Professional Development requirements.

Concentrations Meeting Applied Psychology Requirement

Concentration in Forensic Psychology (FPSY)

Students pursuing the BA with concentration in forensic psychology take 15 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on forensic psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 380</td>
<td>Introduction to Forensic Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 381</td>
<td>Mental Illness and Criminal Justice</td>
<td></td>
</tr>
</tbody>
</table>

Students are strongly encouraged to complete PSYC 300 Statistics in Psychology and PSYC 301 Research Methods in Psychology by their junior year. PSYC 300 Statistics in Psychology is a prerequisite to several courses, and a background in research methods facilitates understanding empirical research discussed in all psychology courses.

2 It is strongly recommended that students fulfill the Mason Core (p. 142) natural science requirement by completing BIOL 103 Introductory Biology I (Mason Core) (p. 142) and BIOL 107 Intro Biology II Lecture (Mason Core) (p. 142)/BIOL 106 Introductory Biology II Laboratory (Mason Core) (p. 142) because these courses are prerequisites to the requirement of PSYC 372 Biopsychology or PSYC 375 Brain and Sensory Processes and PSYC 376 Brain and Behavior.

3 Only students who receive transfer credit for PSYC 372 Biopsychology may use it in place of PSYC 375 Brain and Sensory Processes as the prerequisite for PSYC 376 Brain and Behavior. Students taking PSYC 372 Biopsychology at Mason may not use it in place of PSYC 375 Brain and Sensory Processes.

4 PSYC 427 Community Engagement for Social Change (Mason Core) (p. 142) and PSYC 430 Clinical Practicum in Psychology may count for both the Professional Development and the Applied Psychology requirements.
Select two courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 382</td>
<td>Psychology of Crime Victims</td>
<td></td>
</tr>
<tr>
<td>PSYC 440</td>
<td>Forensic Psychology: Science and Pseudoscience</td>
<td></td>
</tr>
<tr>
<td>PSYC 441</td>
<td>Criminal Behavior: Psychological and Neurological Aspects</td>
<td></td>
</tr>
<tr>
<td>CRIM 100</td>
<td>Introduction to Criminal Justice (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics ¹</td>
<td></td>
</tr>
<tr>
<td>PSYC 462</td>
<td>Selected Topics in Forensic Psychology ¹</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

¹ Only with Undergraduate Associate Chair approval.

**Concentration in Human Factors and Applied Cognition (HF)**

Students pursuing the BA with concentration in human factors and applied cognition take 12-13 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on human factors or applied cognition may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 317</td>
<td>Cognitive Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 340</td>
<td>Human Factors Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two courses from the following: 6-7

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 309</td>
<td>Sensation, Perception, and Information Processing</td>
<td></td>
</tr>
<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 372</td>
<td>Biopsychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology ¹</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics ³</td>
<td></td>
</tr>
<tr>
<td>PSYC 530</td>
<td>Cognitive Engineering: Cognitive Science Applied to Human Factors ²</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12-13

¹ Must be taken with human factors and applied cognition faculty member.

² Note course prerequisite of PSYC 317 Cognitive Psychology.

³ Only with Undergraduate Associate Chair approval.

**Concentration in Work and Organizational Psychology (WKOP)**

Students pursuing the BS with concentration take 12-13 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on I/O psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 321</td>
<td>Clinical Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select at least two psychology electives from the following 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>or PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 322</td>
<td>Behavior Modification</td>
<td></td>
</tr>
<tr>
<td>PSYC 324</td>
<td>Personality Theory</td>
<td></td>
</tr>
<tr>
<td>PSYC 326</td>
<td>Therapeutic Communication Skills</td>
<td></td>
</tr>
<tr>
<td>PSYC 414</td>
<td>Behavior Disorders of Childhood</td>
<td></td>
</tr>
<tr>
<td>PSYC 423</td>
<td>Group Psychotherapy Techniques</td>
<td></td>
</tr>
<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td></td>
</tr>
</tbody>
</table>

**Other Concentrations Available to Majors**

Students may choose to complete a concentration in clinical psychology, developmental psychology, educational psychology, or health psychology.

**Available Concentrations**

- Concentration in Clinical Psychology (CLPY) (p. 463)
- Concentration in Cognitive and Behavioral Neuroscience (CBNR) (p. 464)
- Concentration in Developmental Psychology (DVLP) (p. 464)
- Concentration in Educational Psychology (EPSY) (p. 464)
- Concentration in Health Psychology (HPSY) (p. 464)

**Concentration in Clinical Psychology (CLPY)**

Students pursuing the BA with this concentration take 12 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on clinical psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 321</td>
<td>Clinical Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select at least two psychology electives from the following 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 322</td>
<td>Behavior Modification</td>
<td></td>
</tr>
<tr>
<td>PSYC 324</td>
<td>Personality Theory</td>
<td></td>
</tr>
<tr>
<td>PSYC 326</td>
<td>Therapeutic Communication Skills</td>
<td></td>
</tr>
<tr>
<td>PSYC 414</td>
<td>Behavior Disorders of Childhood</td>
<td></td>
</tr>
<tr>
<td>PSYC 423</td>
<td>Group Psychotherapy Techniques</td>
<td></td>
</tr>
<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td></td>
</tr>
</tbody>
</table>
Concentration in Cognitive and Behavioral Neuroscience (CBNR)
This concentration focuses on laboratory experience in cognitive and behavioral neuroscience and more in-depth courses of interest that will broaden the students' knowledge in understanding brain and behavior.

Students pursuing the BA with this concentration take 15 credits. Students must earn a minimum GPA of 3.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on cognitive and behavioral neuroscience may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 373</td>
<td>Biopsychology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
<td>4</td>
</tr>
<tr>
<td>Select a minimum of 9 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 309</td>
<td>Sensation, Perception, and Information</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 480</td>
<td>Biological Bases of Alzheimer’s Disease</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 472</td>
<td>Current Topics in Brain and Behavior</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics</td>
<td>4</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

1 With permission of a CBN faculty member.
2 When approved by the undergraduate associate chair and topic is Neuronal Bases of Learning and Memory, Drugs and the Brain, or Brain in Books and Film.
3 When approved by undergraduate associate chair and topic is Music and the Brain, Neuronal Aspects of Cognitive Development, Animal Cognition, or Psychology of Stress and Health.

Concentration in Developmental Psychology (DVLP)
The concentration in developmental psychology may be of interest to students who are planning to attend graduate school in developmental psychology or a related field, such as human development and family studies, school psychology, or clinical child psychology. Students who are considering a career in school psychology or education may also find this concentration advantageous.

Students pursuing the BA with this concentration take 12 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on developmental psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td>3</td>
</tr>
<tr>
<td>Select two courses from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 414</td>
<td>Behavior Disorders of Childhood</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

1 Only when content is developmental, with prior written approval.

Concentration in Educational Psychology (EPSY)
Students pursuing the BA with concentration in educational psychology take 12 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on educational psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 312</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
<td>4</td>
</tr>
<tr>
<td>Select two courses from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 322</td>
<td>Behavior Modification</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 558</td>
<td>Neuronal Bases of Learning and Memory</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

1 Educational content only, with department approval.

Concentration in Health Psychology (HPSY)
Students pursuing the BA with concentration in health psychology take 12 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on health or well-being may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 417</td>
<td>Science of Well Being</td>
<td>3</td>
</tr>
<tr>
<td>Select three courses from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 417</td>
<td>Science of Well Being</td>
<td>3</td>
</tr>
</tbody>
</table>
Electives in the Major
Students complete the 37 required credits with electives in psychology (PSYC) with the following restrictions.

- A maximum of 6 credits of PSYC 327 Psychology in the Community and PSYC 328 Psychology in the Community Laboratory may be applied to required psychology credits.
- A maximum of 6 credits of PSYC 260 Basic Research Methods in Psychology, PSYC 350 Directed Reading and Research in Psychology, and PSYC 460 Independent Study in Psychology may be applied to required psychology credits.
- No more than 9 credits of PSYC 327 Psychology in the Community, PSYC 328 Psychology in the Community Laboratory, PSYC 260 Basic Research Methods in Psychology, PSYC 350 Directed Reading and Research in Psychology, and PSYC 460 Independent Study in Psychology can be taken without written permission of the department chair.
- No more than 6 credits of D may be applied toward this requirement.

PSYC 465 Pioneering Ideas in Psychology is strongly recommended for all students who plan to attend graduate school in psychology.

Writing-Intensive Requirement
The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in psychology may fulfill this requirement by successfully completing PSYC 301 Research Methods in Psychology, PSYC 304 Principles of Learning, or PSYC 309 Sensation, Perception, and Information Processing. Students who receive transfer credit for a research methods course must take PSYC 304 Principles of Learning or PSYC 309 Sensation, Perception, and Information Processing unless the transfer course has been approved as writing intensive.

Additional Electives
Any remaining credits may be completed with elective courses to bring the degree total to 120.

Upper Level Requirement
Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

College Level Requirements for the BA Degree
In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL</td>
<td>Classical Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>RELI</td>
<td>Modern Western Political Theory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contemporary Western Political Theory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Humanities College to Career</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senior Seminar in Philosophy, Politics, and Economics</td>
<td></td>
</tr>
</tbody>
</table>

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences
Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td></td>
<td></td>
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<tr>
<td>CRIM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td></td>
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</tr>
<tr>
<td>HIST</td>
<td></td>
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</tr>
<tr>
<td>LING</td>
<td></td>
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<tr>
<td>PSYC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>
The two courses used to fulfill the combined college and Mason Core requirements must be from different disciplines in the social and behavioral sciences.

HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

### Foreign Language

**Code** | **Title** | **Credits**  
--- | --- | ---  
Intermediate-level proficiency in one foreign language, fulfilled by:

- Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)
- Or achieving a satisfactory score on an approved proficiency test
- Or completing the following ASL three course sequence:
  - EDSE 115 American Sign Language (ASL) I
  - EDSE 116 American Sign Language (ASL) II
  - EDSE 219 American Sign Language (ASL) III

Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

### Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

**Code** | **Title** | **Credits**  
--- | --- | ---  
ANTH 114 | Introduction to Cultural Anthropology (Mason Core) (p. 142) | 3  
ANTH 300 | Civilizations | 3  
ANTH 302 | Peoples and Cultures of Latin America (Mason Core) (p. 142) | 3  
ANTH 307 | Ancient Mesoamerica (Mason Core) (p. 142) | 3  
ANTH 308 | Peoples and Cultures of the Middle East (Mason Core) (p. 142) | 3  
ANTH 309 | Peoples and Cultures of India (Mason Core) (p. 142) | 3  
ANTH 313 | Myth, Magic, and Mind (Mason Core) (p. 142) | 3  
ANTH 314 | Zombies | 3  
ANTH 330 | Peoples and Cultures of Selected Regions: Non-Western | 3  
ANTH 332 | Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142) | 3  
ANTH 381 | Medical Anthropology | 3  
ANTH 396 | Issues in Anthropology: Social Sciences (Mason Core) (p. 142) | 3  
ARAB 360 | Topics in Arabic Cultural Production | 3  
ARAB 420 | Survey of Arabic Literature | 3  
ARAB 440 | Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142) | 3  
ARTH 203 | Survey of Asian Art (Mason Core) (p. 142) | 3  
ARTH 204 | Survey of Latin American Art (Mason Core) (p. 142) | 3  
ARTH 206 | Survey of African Art (Mason Core) (p. 142) | 3  
ARTH 318 | Art and Archaeology of Ancient Egypt | 3  
ARTH 319 | Art and Archaeology of the Ancient Near East (Mason Core) (p. 142) | 3  
ARTH 320 | Art of the Islamic World (Mason Core) (p. 142) | 3  
ARTH 382 | Arts of India (Mason Core) (p. 142) | 3  
ARTH 383 | Arts of Southeast Asia (Mason Core) (p. 142) | 3  
ARTH 384 | Arts of China (Mason Core) (p. 142) | 3  
ARTH 385 | Arts of Japan (Mason Core) (p. 142) | 3  
ARTH 386 | The Silk Road (Mason Core) (p. 142) | 3  
ARTH 482 | RS: Advanced Studies in Asian Art | 3  
CHIN 318 | Introduction to Classical Chinese (Mason Core) (p. 142) | 3  
CHIN 320 | Contemporary Chinese Film | 3  
CHIN 325 | Major Chinese Writers (Mason Core) (p. 142) | 3  
DANC 118 | World Dance (Mason Core) (p. 142) | 3  
ECON 361 | Economic Development of Latin America (Mason Core) (p. 142) | 3  
ECON 362 | African Economic Development (Mason Core) (p. 142) | 3  
FREN 451 | Topics in Sub-Saharan Francophone Literature and Culture | 3  
FREN 454 | Topics in Caribbean Francophone Literature and Culture | 3  
GGS 101 | Major World Regions (Mason Core) (p. 142) | 3  
GGS 316 | Geography of Latin America | 3  
GGS 325 | Geography of North Africa and the Middle East | 3  
GGS 330 | Geography of the Soviet Succession States | 3  
GGS 399 | Select Topics in GGS | 3  
GOVT 328 | Global Political Theory | 3  
GOVT 332 | Government and Politics of the Middle East and North Africa | 3  
GOVT 333 | Government and Politics of Asia | 3  
GOVT 338 | Government and Politics of Russia | 3  
GOVT 340 | Central Asian Politics | 3  
GOVT 341 | Chinese Foreign Policy | 3  
GOVT 345 | Islam and Politics | 3  
GOVT 433 | Political Economy of East Asia | 3  
HIST 251 | Survey of East Asian History (Mason Core) (p. 142) | 3  
HIST 252 | Survey of East Asian History (Mason Core) (p. 142) | 3  
HIST 261 | Survey of African History (Mason Core) (p. 142) | 3  
ARAB 360 | Topics in Arabic Cultural Production | 3  
ARAB 420 | Survey of Arabic Literature | 3  
ARAB 440 | Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142) | 3
### HIST 262
Survey of African History (Mason Core) (p. 142) 3

### HIST 271
Survey of Latin American History (Mason Core) (p. 142) 3

### HIST 272
Survey of Latin American History (Mason Core) (p. 142) 3

### HIST 281
Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3

### HIST 282
Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3

### HIST 326
Stalinism 3

### HIST 327
The Soviet Union and Russia Since World War II 3

### HIST 328
Modern Russia and the Soviet Union (Mason Core) (p. 142) 3

### HIST 353
History of Traditional China 3

### HIST 354
Modern China (Mason Core) (p. 142) 3

### HIST 355
Modern Japan (Mason Core) (p. 142) 3

### HIST 356
Post-1949 China (Mason Core) (p. 142) 3

### HIST 360
History of South Africa (Mason Core) (p. 142) 3

### HIST 364
Revolution and Radical Politics in Latin America (Mason Core) (p. 142) 3

### HIST 365
Conquest and Colonization in Latin America (Mason Core) (p. 142) 3

### HIST 366
Comparative Slavery 3

### HIST 367
History, Fiction, and Film in Latin America 3

### HIST 387
Topics in Global History (Mason Core) (p. 142) 3

### HIST 426
The Russian Revolution 3

### RUSS 353
Russian Civilization (Mason Core) (p. 142) 3

### RUSS 354
Contemporary Post-Soviet Life (Mason Core) (p. 142) 3

---

1. A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

### Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST</td>
<td>Written Communication (ENGH 101)</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Information Technology and Computing</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Arts</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Natural Science</td>
<td>7</td>
</tr>
<tr>
<td>HIST</td>
<td>Social and Behavioral Sciences</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Western Civilization/World History</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Written Communications (ENGH 302)</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 40

---

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2. Minimum 3 credits required.

### Honors

### Honors in the Major

Highly-qualified students may apply to graduate with honors in the major. To be eligible for admission, psychology majors must have completed
at least 50 credits and have a minimum cumulative GPA of 3.25 and a minimum GPA of 3.40 in psychology courses.

If accepted, students must take a sequence of three courses, which culminates in the successful completion and presentation of an independent honors thesis.

To graduate with honors, students must earn a minimum GPA of 3.50 in their honors courses and maintain a minimum cumulative GPA of 3.25 and a minimum GPA of 3.40 in psychology courses.

### Accelerated Master's

The accelerated master's programs in the list below specify the BA in psychology as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

### Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

**Overview**

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master's in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Selected Majors**

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

**Accelerated Option Requirements**

While undergraduate students, accelerated master's students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/ Accelerated Master's Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

### Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total Credits**

6

### Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)

**Overview**

Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Selected Majors**

Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information
specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Psychology, BA or BS/Psychology, Accelerated MA (Cognitive and Behavioral Neuroscience Concentration)
Overview
Highly qualified Mason undergraduate psychology majors may apply to the accelerated master’s degree with a concentration in cognitive and behavioral neuroscience. If accepted, students will be able to earn a BA (p. 461) or BS in psychology (p. 469) and a MA in psychology (p. 479) with a concentration in cognitive and behavioral neuroscience after satisfactory completion of 146 credits.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to this program, see Application Requirements and Deadlines (http://psychology.gmu.edu/programs/application/LA-MA-ACEL-PSYC) on the departmental web site.

Accelerated Option Requirements
It is strongly recommended that students complete at least one semester of lab research before applying to the Accelerated Master’s Program.

While undergraduate students, accelerated master’s students complete six credits of graduate courses (chosen from PSYC 531 Mammalian Neurobiology, PSYC 555 Neuroimaging, PSYC 558 Neuronal Bases of Learning and Memory, PSYC 559 Behavioral Chemistry, and approved sections of PSYC 592 Special Topics) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from PSYC 531 Mammalian Neurobiology, PSYC 555 Neuroimaging, PSYC 558 Neuronal Bases of Learning and Memory, PSYC 559 Behavioral Chemistry, and approved sections of PSYC 592 Special Topics) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from PSYC 531 Mammalian Neurobiology, PSYC 555 Neuroimaging, PSYC 558 Neuronal Bases of Learning and Memory, PSYC 559 Behavioral Chemistry, and approved sections of PSYC 592 Special Topics) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79) for more information.

Psychology, BS
Banner Code: LA-BS-PSYC
2086 David King Hall
Fairfax Campus
Email: ugpsyc@gmu.edu
Website: psychology.gmu.edu/programs/la-bs-psyc
Students study behavior as it relates to health and well-being, child and adolescent development, education, social situations, the workplace, and the use of technology. Due to Mason’s close proximity to Washington, D.C. the department is especially active in research that informs public policy and national defense. Students who graduate from this program go on to work in a wide range of fields and positions, including human resources, data analysis, user interface design, and social media and marketing.

The BS in Psychology focuses on math and science within the psychology field.

Admissions & Policies

Policies

Students pursuing this degree must complete at least 39 credits in psychology and 35 credits in supporting courses. Of the 39 credits earned through basic psychology courses, applied psychology courses and electives, 24 credits must be at the 300 and 400 level.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 470) tab.

Students may choose to complete a concentration in clinical psychology, developmental psychology, educational psychology, forensic psychology, health psychology, human factors and applied cognition, or work and organizational psychology. Courses required for a concentration may simultaneously satisfy other degree requirements. The concentrations in forensic psychology, human factors and applied cognition, and work and organizational psychology meet the applied psychology requirement.

Students who have limited technology skills are encouraged to take IT 104 Introduction to Computing (Mason Core) (p. 142).

Core Courses in the Major

Basic Courses in Psychology

Students must have a minimum GPA of 2.00 in these courses with a minimum grade of 1.67 (C-) in each one. Courses taken to fulfill these requirements may simultaneously satisfy a concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Foundational Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 317</td>
<td>Cognitive Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one option from the following:

Option 1:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Option 2:

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td></td>
</tr>
</tbody>
</table>

Research Methods Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 300</td>
<td>Statistics in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 301</td>
<td>Research Methods in Psychology</td>
<td></td>
</tr>
</tbody>
</table>

Psychology Lab Course

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
<td>1-4</td>
</tr>
<tr>
<td>PSYC 309</td>
<td>Sensation, Perception, and Information Processing</td>
<td></td>
</tr>
<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
<td></td>
</tr>
<tr>
<td>PSYC 373</td>
<td>Biopsychology Laboratory</td>
<td></td>
</tr>
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</table>

Biopsychology

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PSYC 372</td>
<td>Biopsychology</td>
<td>3-6</td>
</tr>
<tr>
<td>PSYC 375 &amp; PSYC 376</td>
<td>Brain and Sensory Processes/Brain and Behavior</td>
<td></td>
</tr>
</tbody>
</table>

Professional Development

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PSYC 399</td>
<td>Psychology: College to Career</td>
<td>3</td>
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<tr>
<td>PSYC 327</td>
<td>Psychology in the Community</td>
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</tr>
<tr>
<td>PSYC 427</td>
<td>Community Engagement for Social Change (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 491</td>
<td>Psychology Honors II</td>
<td></td>
</tr>
<tr>
<td>PSYC 492</td>
<td>RS: Psychology Honors III</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics (with Undergraduate Associate Chair approval)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 27-36

1 Students are strongly encouraged to complete PSYC 300 Statistics in Psychology and PSYC 301 Research Methods in Psychology by their junior year. PSYC 300 Statistics in Psychology is a prerequisite to several courses, and a background in research methods facilitates understanding empirical research discussed in all psychology courses.

2 The course chosen to fulfill this requirement cannot be the same course used to fulfill the technical writing requirement below. PSYC 320 may count for both the Psychology Lab and the Applied Psychology requirements.

3 Students who have a strong interest in biopsychology or cognitive neuroscience are encouraged to take PSYC 375 Brain and Sensory Processes/PSYC 376 Brain and Behavior rather than PSYC 372 Biopsychology. Only students who receive transfer credit for PSYC 372 Biopsychology may use it in place of PSYC 375 Brain and Sensory Processes as the prerequisite for PSYC 376 Brain and Behavior. Students taking PSYC 372 Biopsychology at Mason may not use it in place of PSYC 375 Brain and Sensory Processes.

4 PSYC 427 Community Engagement for Social Change (Mason Core) (p. 142) and PSYC 430 Clinical Practicum in Psychology may count for both the Professional Development and the Applied Psychology requirements.
Applied Psychology Courses or Optional Concentration
Alternatively, students may earn a concentration in forensic psychology, human factors and applied cognition, or work and organizational psychology to satisfy this requirement.

Applied Psychology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
<td>6-7</td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 340</td>
<td>Human Factors Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology</td>
<td>3</td>
</tr>
<tr>
<td>(Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 381</td>
<td>Mental Illness and Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 427</td>
<td>Community Engagement for Social Change</td>
<td>3</td>
</tr>
<tr>
<td>(Mason Core) (p. 142)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6-7

Students pursuing the BS without concentration select two courses from the following:

Note course prerequisite of PSYC 317 Cognitive Psychology.

Select three courses from the following: 9-10

PSYC 317 Cognitive Psychology
PSYC 340 Human Factors Psychology
PSYC 382 Psychology of Crime Victims
PSYC 440 Forensic Psychology: Science and Pseudoscience
PSYC 441 Criminal Behavior: Psychological and Neurological Aspects
CRIM 100 Introduction to Criminal Justice (Mason Core) (p. 142)
PSYC 461 Special Topics

Concentration in Forensic Psychology (FPSY)
Students pursuing the BS with concentration in forensic psychology take 15 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on forensic psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 340</td>
<td>Human Factors Psychology</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology</td>
<td>2</td>
</tr>
<tr>
<td>(Mason Core) (p. 142)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PSYC 381</td>
<td>Mental Illness and Criminal Justice</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 427</td>
<td>Community Engagement for Social Change</td>
<td>2</td>
</tr>
<tr>
<td>(Mason Core) (p. 142)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits: 12-13

1 Requires Undergraduate Associate Chair approval.

Concentration in Human Factors and Applied Cognition (HF)
Students pursuing the BS with concentration in human factors and applied cognition take 12-13 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on human factors or applied cognition may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 309</td>
<td>Sensation, Perception, and Information Processing</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 372</td>
<td>Biopsychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 530</td>
<td>Cognitive Engineering: Cognitive Science Applied to Human Factors</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two courses from the following: 6-7

Concentration in Work and Organizational Psychology (WKOP)
Students pursuing the BS with concentration take 12-13 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on I/O psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 330</td>
<td>Psychology of Industrial and Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 335</td>
<td>Psychology of Creativity and Innovation</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 435</td>
<td>Personnel Training and Development: A Psychological Perspective</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 467</td>
<td>The Psychology of Working in Groups and Teams</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics</td>
<td>3</td>
</tr>
</tbody>
</table>
Other Concentrations Available to Majors

Available Concentrations Available to Majors
- Concentration in Clinical Psychology (CLPY) (p. 472)
- Cognitive and Behavioral Neuroscience (CBNR) (p. 472)
- Concentration in Developmental Psychology (DVLP) (p. 472)
- Concentration in Educational Psychology (EPSY) (p. 473)
- Concentration in Health Psychology (HPSY) (p. 473)

Students may choose to complete a concentration in clinical psychology, cognitive and behavioral neuroscience, developmental psychology, educational psychology, or health psychology.

Concentration in Clinical Psychology (CLPY)

Students pursuing the BS with this concentration take 12 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on clinical psychology may, with approval of their thesis committees and the associate chair for graduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 321</td>
<td>Clinical Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Select at least two psychology electives from the following</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>or PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>or PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>PSYC 322</td>
<td>Behavior Modification</td>
<td></td>
</tr>
<tr>
<td>PSYC 324</td>
<td>Personality Theory</td>
<td></td>
</tr>
<tr>
<td>PSYC 326</td>
<td>Therapeutic Communication Skills</td>
<td></td>
</tr>
<tr>
<td>PSYC 414</td>
<td>Behavior Disorders of Childhood</td>
<td></td>
</tr>
<tr>
<td>PSYC 423</td>
<td>Group Psychotherapy Techniques</td>
<td></td>
</tr>
<tr>
<td>PSYC 430</td>
<td>Clinical Practicum in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics 1</td>
<td></td>
</tr>
</tbody>
</table>

1 Only when topic is related to clinical psychology approved by the psychology department.

Concentration in Cognitive and Behavioral Neuroscience (CBNR)

This concentration focuses on laboratory experience in cognitive and behavioral neuroscience and more in-depth courses of interest that will broaden the students’ knowledge in understanding brain and behavior.

Students pursuing the BS with this concentration take 12 credits. Students must earn a minimum GPA of 3.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on cognitive and behavioral neuroscience may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>or PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>or PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology</td>
<td></td>
</tr>
<tr>
<td>(Mason Core)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Concentration in Developmental Psychology (DVLP)

The concentration in developmental psychology may be of interest to students who are planning to attend graduate school in developmental psychology or a related field, such as human development and family studies, school psychology, or clinical child psychology. Students who are considering a career in school psychology or education may also find this concentration advantageous.

Students pursuing the BS with this concentration take 12 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on developmental psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>Select two courses from the following:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology</td>
<td></td>
</tr>
<tr>
<td>(Mason Core)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PSYC 415 Psychological Factors in Aging
PSYC 460 Independent Study in Psychology 1
PSYC 461 Special Topics 1

Total Credits 12

1 Only when content is developmental, with prior written approval.

Concentration in Educational Psychology (EPSY)
Students pursuing the BS with concentration in educational psychology take 12 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on educational psychology may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 312</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
<td>4</td>
</tr>
<tr>
<td>Select two from the following: 6 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
<td></td>
</tr>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 322</td>
<td>Behavior Modification</td>
<td></td>
</tr>
<tr>
<td>PSYC 460</td>
<td>Independent Study in Psychology 1</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics</td>
<td></td>
</tr>
<tr>
<td>PSYC 558</td>
<td>Neuronal Bases of Learning and Memory</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 13

1 Educational content only, with department approval.

Concentration in Health Psychology (HPSY)
Students pursuing the BS with concentration in health psychology take 12 credits. Students must earn a minimum GPA of 2.00 in all coursework applied to the concentration.

Students who successfully complete the Psychology Department Honors Program (PSYC 490 Psychology Honors I, PSYC 491 Psychology Honors II, and PSYC 492 RS: Psychology Honors III) with an honors thesis/project focused on health psychology or related content may, with approval of their thesis committees and the associate chair for undergraduate studies, substitute their honors work for one course in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 417</td>
<td>Science of Well Being</td>
<td>3</td>
</tr>
<tr>
<td>Select three from the following: 9 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 321</td>
<td>Clinical Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 408</td>
<td>Psychological Fitness</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Special Topics 1</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

1 Only when topic is related to health and well-being and approved by the psychology department.

Electives in the Major
Students complete the 39 required credits with electives in psychology (PSYC) (p. 2074) with the following restrictions.

- A maximum of 6 credits of PSYC 327 Psychology in the Community and PSYC 328 Psychology in the Community Laboratory may be applied to required psychology credits.
- A maximum of 6 credits of PSYC 260 Basic Research Methods in Psychology, PSYC 350 Directed Reading and Research in Psychology, and PSYC 460 Independent Study in Psychology may be applied to required psychology credits.
- No more than 9 credits of PSYC 327 Psychology in the Community, PSYC 328 Psychology in the Community Laboratory, PSYC 260 Basic Research Methods in Psychology, PSYC 350 Directed Reading and Research in Psychology, and PSYC 460 Independent Study in Psychology can be taken without written permission of the department chair.
- No more than 6 credits of D may be applied toward this requirement.

PSYC 465 Pioneering Ideas in Psychology is strongly recommended for all students who plan to attend graduate school in psychology.

If an approved psychology course is used to meet the technical writing requirement, it may also be applied as a psychology elective.

Supporting Courses
These courses broaden the requirements to include humanities and strengthen the science, quantitative and writing components of the degree. Students who successfully complete the Honors College curriculum are required to complete only the quantitative reasoning and natural science support requirements described below. All other supporting requirements are considered met by successful completion of the Honors College curriculum.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Technical Writing</td>
<td>3-4</td>
</tr>
<tr>
<td>Select one of the following: 1 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGH 388</td>
<td>Professional and Technical Writing</td>
<td></td>
</tr>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
<td></td>
</tr>
<tr>
<td>PSYC 309</td>
<td>Sensation, Perception, and Information Processing</td>
<td></td>
</tr>
<tr>
<td>PSYC 320</td>
<td>Psychological Tests and Measurements</td>
<td></td>
</tr>
</tbody>
</table>

Successful completion of the psychology honors program: 2

Natural Science
Choose one of the following sequences: 8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103 &amp; BIOL 213</td>
<td>Introductory Biology I (Mason Core) (p. 142) and Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 103 &amp; BIOL 107 &amp; BIOL 106</td>
<td>Introductory Biology I (Mason Core) (p. 142) and Intro Biology II Lecture (Mason Core) (p. 142) and Introductory Biology II Laboratory (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Two elective courses in the natural sciences. 3 6-8
Quantitative Reasoning
Select two courses from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core)</td>
<td>3-8</td>
</tr>
<tr>
<td>MATH 110</td>
<td>Introductory Probability (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Calculus with Algebra/Trigonometry, Part A</td>
<td>3</td>
</tr>
<tr>
<td>MATH 124</td>
<td>Calculus with Algebra/Trigonometry, Part B (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 350</td>
<td>Introductory Statistics II</td>
<td>3</td>
</tr>
</tbody>
</table>

Humanities
Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL</td>
<td>(p. 2044)</td>
<td>1</td>
</tr>
<tr>
<td>RELI</td>
<td>(p. 2144)</td>
<td>1</td>
</tr>
<tr>
<td>ARTH</td>
<td>(p. 1240)</td>
<td>1</td>
</tr>
<tr>
<td>AVT</td>
<td>(p. 1250)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI</td>
<td>(p. 1955)</td>
<td>1</td>
</tr>
<tr>
<td>DANC</td>
<td>(p. 1548)</td>
<td>1</td>
</tr>
<tr>
<td>THR</td>
<td>(p. 2261)</td>
<td>1</td>
</tr>
</tbody>
</table>

Social and Behavioral Science
Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td>(p. 1212)</td>
<td>1</td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td>1</td>
</tr>
<tr>
<td>GOVT</td>
<td>(p. 1774)</td>
<td>1</td>
</tr>
<tr>
<td>HIST</td>
<td>(p. 1818)</td>
<td>1</td>
</tr>
<tr>
<td>SOCI</td>
<td>(p. 2167)</td>
<td>1</td>
</tr>
</tbody>
</table>

Any non-psychology course that has been approved to meet the Mason Core requirement in social and behavioral science

One Additional Course in Humanities or Social and Behavioral Science

Students majoring in psychology may fulfill this requirement by successfully completing PSYC 301 Research Methods in Psychology, PSYC 304 Principles of Learning, or PSYC 309 Sensation, Perception, and Information Processing. Students who receive transfer credit for a research methods course must take PSYC 304 Principles of Learning, or PSYC 309 Sensation, Perception, and Information Processing unless the transfer course has been approved as writing intensive.

Upper Level Requirement
Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives
Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree
In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL</td>
<td>(p. 2044)</td>
<td>1</td>
</tr>
<tr>
<td>RELI</td>
<td>(p. 2144)</td>
<td>1</td>
</tr>
</tbody>
</table>

Note that the following courses may not be used to fulfill this requirement:

• PHIL 323 Classical Western Political Theory
• PHIL 324 Modern Western Political Theory
• PHIL 327 Contemporary Western Political Theory
• PHIL 393 Humanities College to Career
• PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences
Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td>(p. 1212)</td>
<td>1</td>
</tr>
<tr>
<td>CRIM</td>
<td>(p. 1514)</td>
<td>1</td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td>1</td>
</tr>
<tr>
<td>GOVT</td>
<td>(p. 1774)</td>
<td>1</td>
</tr>
<tr>
<td>HIST</td>
<td>(p. 1818)</td>
<td>1</td>
</tr>
<tr>
<td>LING</td>
<td>(p. 1896)</td>
<td>1</td>
</tr>
<tr>
<td>PSYC</td>
<td>(p. 2074)</td>
<td>1</td>
</tr>
<tr>
<td>SOCI</td>
<td>(p. 2167)</td>
<td>1</td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Writing-Intensive Requirement
The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above.
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 337</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>

1 The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

2 HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

**Foreign Language**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate-level proficiency in one foreign language, fulfilled by:¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
<td></td>
</tr>
<tr>
<td>Or completing the following ASL three course sequence:</td>
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<tr>
<td>EDSE 115</td>
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<tr>
<td>EDSE 116</td>
<td>American Sign Language (ASL) II</td>
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</tr>
<tr>
<td>EDSE 219</td>
<td>American Sign Language (ASL) III</td>
<td></td>
</tr>
</tbody>
</table>

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Non-Western Culture**

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
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<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 314</td>
<td>Zombies</td>
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<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
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<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
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<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
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<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
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<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
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<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
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<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
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<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
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<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td>3</td>
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<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
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<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
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<td>GOVT 343</td>
<td>Political Economy of East Asia</td>
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<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core)</td>
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<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core)</td>
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<td>HIST 261</td>
<td>Survey of African History (Mason Core)</td>
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<td>HIST 262</td>
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<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core)</td>
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<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core)</td>
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<td>Survey of Middle Eastern Civilization (Mason Core)</td>
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<td>HIST 326</td>
<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>HIST 328</td>
<td>Rise of Russia (Mason Core)</td>
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<td>Modern Russia and the Soviet Union (Mason Core)</td>
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<td>HIST 353</td>
<td>History of Traditional China</td>
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<td>HIST 354</td>
<td>Modern China (Mason Core)</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core)</td>
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<td>HIST 357</td>
<td>Postwar Japan (Mason Core)</td>
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<td>HIST 358</td>
<td>Post-1949 China (Mason Core)</td>
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<td>HIST 360</td>
<td>History of South Africa (Mason Core)</td>
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<td>Revolution and Radical Politics in Latin America (Mason Core)</td>
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<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core)</td>
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<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
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<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
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<td>HIST 387</td>
<td>Topics in Global History (Mason Core)</td>
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<td>HIST 426</td>
<td>The Russian Revolution</td>
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<td>HIST 460</td>
<td>Modern Iran (Mason Core)</td>
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<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
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<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core)</td>
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<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
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<td>Japanese Culture in a Global World (Mason Core)</td>
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<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core)</td>
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<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
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<td>MUSI 103</td>
<td>Musics of the World (Mason Core)</td>
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<td>RELI 211</td>
<td>Religions of the West (Mason Core)</td>
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<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core)</td>
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<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
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<tr>
<td>RELI 272</td>
<td>Islam</td>
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<td>RELI 313</td>
<td>Hinduism (Mason Core)</td>
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<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
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<td>RELI 315</td>
<td>Buddhism (Mason Core)</td>
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<td>RELI 337</td>
<td>Mysticism: East and West</td>
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<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
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<td>RELI 374</td>
<td>Islamic Thought (Mason Core)</td>
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<td>RELI 375</td>
<td>Qur’an and Hadith</td>
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<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
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<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
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<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core)</td>
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<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core)</td>
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<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

1. A course used to fulfill the Mason Core global understanding requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGH 101</td>
<td>Written Communication (Mason Core)</td>
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<tr>
<td>Oral Communication (p. 142)</td>
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<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
<td></td>
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<tr>
<td>Information Technology and Computing (p. 143)</td>
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<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Honors

Honors in the Major

Highly-qualified students may apply to graduate with honors in the major. To be eligible for admission, psychology majors must have completed at least 50 credits and have a minimum cumulative GPA of 3.25 and a minimum GPA of 3.40 in psychology courses.

If accepted, students must take a sequence of three courses, which culminates in the successful completion and presentation of an independent honors thesis.

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>PSYC 490</td>
<td>Psychology Honors I</td>
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</tr>
<tr>
<td>PSYC 491</td>
<td>Psychology Honors II</td>
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</tr>
<tr>
<td>PSYC 492</td>
<td>RS: Psychology Honors III</td>
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<tr>
<td></td>
<td>Total Credits</td>
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</tbody>
</table>

To graduate with honors, students must earn a minimum GPA of 3.50 in their honors courses and maintain a minimum cumulative GPA of 3.25 and a minimum GPA of 3.40 in psychology courses.

Accelerated Master's

The accelerated master's programs in the list below specify the BS in psychology as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

Overview

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master's in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Selected Majors

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

Accelerated Option Requirements

While undergraduate students, accelerated master's students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
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<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
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</tbody>
</table>
Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)

Overview
Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Selected Majors
Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>WMST 600</td>
<td>Special Topics</td>
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<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
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</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree.

To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
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</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Psychology, BA or BS/Psychology, Accelerated MA (Cognitive and Behavioral Neuroscience Concentration)

Overview
Highly qualified Mason undergraduate psychology majors may apply to the accelerated master's degree with a concentration in cognitive and behavioral neuroscience. If accepted, students will be able to earn a BA (p. 461) or BS in psychology (p. 469) and a MA in psychology (p. 479) with a concentration in cognitive and behavioral neuroscience after satisfactory completion of 146 credits.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to this program, see Application Requirements and Deadlines (http://psychology.gmu.edu/programs/application/LA-MA-ACEL-PSYC) on the departmental web site.

Accelerated Option Requirements
It is strongly recommended that students complete at least one semester of lab research before applying to the Accelerated Master's Program.

While undergraduate students, accelerated master’s students complete six credits of graduate courses (chosen from PSYC 531 Mammalian Neurobiology, PSYC 555 Neuroimaging, PSYC 558 Neuronal Bases of Learning and Memory, PSYC 559 Behavioral Chemistry, and approved sections of PSYC 592 Special Topics) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students...
must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from PSYC 531 Mammalian Neurobiology, PSYC 555 Neuroimaging, PSYC 558 Neuronal Bases of Learning and Memory, PSYC 559 Behavioral Chemistry, and approved sections of PSYC 592 Special Topics. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79) for more information.

**Psychology Minor**

**Banner Code:** PSYC

**Academic Advising**

2086 David King Hall
Fairfax Campus

Email: ugpsyc@gmu.edu
Website: http://psychology.gmu.edu/programs/la-minor-psyc-psyc

Coursework in psychology can enhance many different majors, and the minor in psychology is available to students in any major at Mason. For a list of suggested courses for students who are majoring in specific disciplines that interact especially well with psychology, contact the Undergraduate Psychology Office (http://psychology.gmu.edu/contact).

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 479) tab.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Areas of Psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
</tr>
<tr>
<td>------</td>
</tr>
</tbody>
</table>
|      | Select three courses in three of the following areas of Psychology.  
| Abnormal: | PSYC 325 Abnormal Psychology |
| Cognition: | PSYC 317 Cognitive Psychology |
| Developmental: | PSYC 211 Developmental Psychology (Mason Core) (p. 142) |
| Psychological: | PSYC 372 Biopsychology or PSYC 375 Brain and Sensory Processes & PSYC 376 Brain and Behavior |
| Social/Personality: | PSYC 231 Social Psychology (Mason Core) (p. 142) |
|      | PSYC 324 Personality Theory |

| Total Credits | 9-12 |

1 Students must choose cognition or physiological as one of the three areas, though they may choose both.

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
|      | Select one or two PSYC courses (p. 2074)  
|      | 3-6 |

| Total Credits | 3-6 |

1 No more than three credits of PSYC 260, PSYC 350, and PSYC 460 (in total) may be used as elective credit toward the minor. Students who take PSYC 375 and PSYC 376 in the physiological area above will only take 3 elective credits.

**Psychology, MA (CHSS)**

**Banner Code:** LA-MA-PSYC

**Academic Advising**

2086 David King Hall
Fairfax Campus

Email: psycgrad@gmu.edu
Website: psychology.gmu.edu/programs/la-ma-psyc

The MA in psychology is distinguished by its emphasis on basic research and the application of research to solve practical problems in families, industry, government, and health care settings. Because of the program's proximity to Washington D.C., students have access to many employment and continuing education opportunities in research, academia, and consulting within government, public, and private settings.

The psychology MA offers the following concentrations:

- applied developmental psychology
- cognitive and behavioral neuroscience
Psychology, MA (CHSS)

- human factors/applied cognition
- industrial/organizational psychology

While the department does not offer a master’s degree in clinical or counseling psychology, a master's degree in psychology with a concentration in clinical psychology is available for students who have been admitted to the doctoral program concentration in clinical psychology.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the MA in psychology, see Application Requirements and Deadlines (http://psychology.gmu.edu/programs/LA-MA-PSYC/application).

Provisional Admission

Students who are admitted provisionally are required to take 12 credits in psychology and earn a minimum GPA of 3.25 in those courses to qualify for removal of the provisional qualifier. Programs may add other conditions to provisional admission. Individualized study courses cannot be used toward the 12 credits.

Policies

For policies governing all graduate degrees, see Graduate Policies (p. 90).

In addition to satisfying the requirements for all master’s degrees, students pursuing a master’s degree in psychology must successfully complete 30-46 credits of required course work. They complete this coursework in one of six concentrations.

A maximum of 6 credits of thesis proposal and thesis research (PSYC 798 Thesis Proposal, PSYC 799 Master’s Thesis) may be applied to the master’s degree. A maximum of 9 credits of thesis courses (PSYC 798 Thesis Proposal, PSYC 799 Master’s Thesis), Directed Reading and Research (PSYC 597 Directed Reading and Research), and Practicum (PSYC 792 Psychology Practicum) may be applied to the degree.

Requirements

Degree Requirements

Total credits: 30-32

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 480) tab.

Choose one concentration and complete the requirements therein.

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Concentration in Applied Developmental Psychology (APD)

The concentration in applied developmental psychology focuses on child development. It provides basic knowledge about normal development, skills for assessing developmental level, and techniques for planning and evaluating programs that foster optimal development. Graduates are prepared for employment at agencies concerned with educational and health programs for children, enrichment programs for infants and preschoolers, and education programs for parents.

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 704</td>
<td>Life-Span Development</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from any of the following areas:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social Psychology:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 668</td>
<td>Personality: Theoretical and Empirical Approaches</td>
<td></td>
</tr>
<tr>
<td>PSYC 703</td>
<td>Social Bases of Behavior</td>
<td></td>
</tr>
<tr>
<td>Biological Psychology:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 702</td>
<td>Biological Bases of Human Behavior</td>
<td></td>
</tr>
<tr>
<td>Cognitive Psychology:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 701</td>
<td>Cognitive Bases of Behavior</td>
<td></td>
</tr>
<tr>
<td>PSYC 592</td>
<td>Special Topics (with approval)</td>
<td></td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology (with approval)</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Quantitative Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Specialized Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One to two courses selected from the following:</td>
<td></td>
<td>3-6</td>
</tr>
<tr>
<td>PSYC 566</td>
<td>Cognitive and Perceptual Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 615</td>
<td>Language Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 630</td>
<td>Developmental Disabilities</td>
<td></td>
</tr>
<tr>
<td>PSYC 648</td>
<td>Developmental Psychopathology</td>
<td></td>
</tr>
<tr>
<td>PSYC 669</td>
<td>Social and Emotional Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 780</td>
<td>Applied Developmental Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 592</td>
<td>Special Topics ¹</td>
<td></td>
</tr>
<tr>
<td>Other developmental courses chosen with advisor approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select a maximum of one course from:</td>
<td></td>
<td>0-3</td>
</tr>
<tr>
<td>PSYC 614</td>
<td>The Psychology of Aging</td>
<td></td>
</tr>
<tr>
<td>PSYC 617</td>
<td>Child Psychopathology</td>
<td></td>
</tr>
<tr>
<td>PSYC 619</td>
<td>Applied Behavior Analysis: Principles, Procedures, and Philosophy</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

¹ When content is developmental, with approval of advisor.

Thesis Research or Practicum Experience

Thesis

The thesis includes a combination of PSYC 798 Thesis Proposal/PSYC 799 Master’s Thesis. Per the University Catalog, at least 3 hours must be PSYC 799 Master’s Thesis; these 3 hours must be taken the first semester in which PSYC 799 Master’s Thesis is registered. Thus, this is generally a combination of 1 credit of PSYC 798 Thesis Proposal and 3 of PSYC 799 Master’s Thesis.
Students should be aware of the policies governing theses. They must follow the thesis enrollment policy of the university and once enrolled in PSYC 799 Master’s Thesis, maintain continuous enrollment. See Academic Policies.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 4 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>PSYC 798</td>
<td>Thesis Proposal</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 799</td>
<td>Master’s Thesis (minimum of 3 credits)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Practicum Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 4 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>PSYC 792</td>
<td>Psychology Practicum (take 3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 597</td>
<td>Directed Reading and Research (take 1 credit)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional Seminar Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two credits of 1</td>
<td>Seminar in Professional Psychology</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 890</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>2</td>
</tr>
</tbody>
</table>

1 Students should take 1 credit in fall and 1 credit in spring of their first year.

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 5 credits in consultation with your advisor</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>5</td>
</tr>
</tbody>
</table>

Elective credit can be taken via content courses, further practicum, directed reading, or research credits, or further thesis credits (i.e. more than 4 credits). Electives may also come from other departments although these often require permission of the instructor.

### Concentration in Clinical Psychology (CLN)

The clinical psychology concentration trains students to have flexibility to fill the evolving functions of clinical psychologists, including research, direct provision of clinical services, supervision, program development and evaluation, and consultation.

The clinical psychology MA concentration is not a terminal degree. Students who have been admitted to the doctoral program with a concentration in clinical psychology may apply to receive the MA in psychology on completion of 30 credits of course work. Students must also be in good standing in the program, as determined by the director of clinical training.

#### Foundation Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 810</td>
<td>Psychological Assessment I</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 811</td>
<td>Psychological Assessment II</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 822</td>
<td>Scientific Foundations of Clinical Psychology I</td>
<td>3</td>
</tr>
</tbody>
</table>

### Practicum Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 860</td>
<td>Introductory Helping Skills and Motivational Interviewing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>14</td>
</tr>
</tbody>
</table>

### Advanced Statistics and Research Methods

Note: For doctoral quantitative emphases B and C, both PSYC 754 Quantitative Methods III: Psychological Applications of Regression Techniques and PSYC 756 Quantitative Methods IV: Multivariate Techniques in Psychology must be taken, but only one of these courses is required for the MA.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 644</td>
<td>Methods for Social Research</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 612</td>
<td>Advanced Statistics</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC 756</td>
<td>Quantitative Methods IV: Multivariate Techniques in Psychology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

### Concentration in Cognitive and Behavioral Neuroscience (CBNR)

The concentration in cognitive and behavioral neuroscience focuses on studying biological substrates of behavior. Core and affiliated faculty study areas as diverse as neural control of behavioral development; animal models of learning and memory and their disorders (such as Alzheimer’s); human brain systems involved in cognition, perception, human error, decision making, and movement; the relation of neural activity to human performance; and cognitive aging. A focus of the program is on translational neuroscience-complementary study of neural systems in humans and animals, including application of animal research to human behavior.

#### Specialized Content

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 531</td>
<td>Mammalian Neurobiology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 558</td>
<td>Neuronal Bases of Learning and Memory</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

### Additional Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 555</td>
<td>Neuroimaging</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 559</td>
<td>Behavioral Chemistry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3</td>
</tr>
</tbody>
</table>

### Quantitative Methods

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>4</td>
</tr>
</tbody>
</table>
help place students who do not have real-world experience in a part- or full-time practicum before completing the degree.

### Core Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 701</td>
<td>Cognitive Bases of Behavior or PSYC 768</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 756</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 756</td>
<td>Quantitative Methods IV: Multivariate Techniques in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 792</td>
<td>Special Topics</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits: 7-8

1. When topic is Bayesnian Statistics or Animal Methods.
2. When topic is Human Experimentation.

### Quantitative Methods

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 652</td>
<td>Quantitative Methods II: Analysis of Variance</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 756</td>
<td>Quantitative Methods IV: Multivariate Techniques in Psychology</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 612</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 652</td>
<td>Quantitative Methods II: Analysis of Variance</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 756</td>
<td>Quantitative Methods IV: Multivariate Techniques in Psychology</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 7-8

### Specialized Content

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 530</td>
<td>Cognitive Engineering: Cognitive Science Applied to Human Factors</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 645</td>
<td>Research Methods in Human Factors and Applied Cognition</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

### Additional Courses

Select two courses from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 734</td>
<td>Seminar in Human Factors and Applied Cognition</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 768</td>
<td>Advanced Topics in Cognitive Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

1. These courses may be repeated.

### Electives

Students complete the 30 credits required for this degree through additional coursework, including courses not listed above, within or outside the department, with prior written approval of the graduate director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 798</td>
<td>Thesis Proposal</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 799</td>
<td>Master’s Thesis (minimum of 3 credits)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

### Concentration in Human Factors/Applied Cognition (HF)

The human factors/applied cognition concentration trains students in the application of cognitive science to real-world problems. Students gain expertise in such areas as human/computer interaction, cognitive system engineering, cognitive ergonomics, and transportation. Faculty members...
Optional Thesis
Students need the chair’s approval to register for thesis. Students should be aware of the policies governing theses. They must follow the thesis enrollment policy of the university and once enrolled in PSYC 799 Master’s Thesis, maintain continuous enrollment. See Academic Policies.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 798 Thesis Proposal</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 799 Master’s Thesis</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Concentration in Industrial/Organizational Psychology (IO)
The industrial/organizational psychology concentration trains students in the conduct and application of psychological research in work settings. Expertise can be developed in a variety of areas, including personnel selection, training, leadership, motivation, and human performance assessment.

Statistics
Select at least 10 credits of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611 Advanced Statistics</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 612 Advanced Statistics</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>or PSYC 754 Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 557 Psychometric Methods</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>or PSYC 633 Evaluative Research in Psychology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Survey of Content

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 636 Survey of Industrial Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSYC 639 Survey of Organizational Processes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Specialized Content
Select three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 638 Training: Psychological Contributions to Theory, Design, and Evaluation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 640 Techniques in Industrial/Organizational Psychology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 733 Issues in Personnel Psychology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 741 Psychology of Work Motivation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 667 Behavior in Small Groups and Teams</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 631 Industrial and Personnel Testing and Evaluation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PSYC 739 Seminar in Industrial/Organizational Psychology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

1 When their topic is relevant, other courses, including sections of PSYC 592 Special Topics, may be applied to this requirement.

Professional Development

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 1 credit from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 890 Seminar in Professional Psychology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

1 Requires advisor’s approval.

Electives
Students complete the 32 credits required for this degree through additional coursework in statistics or specialized content.

Accelerated Master’s

Psychology, BA or BS/Psychology, Accelerated MA (Cognitive and Behavioral Neuroscience Concentration)

Overview
Highly qualified Mason undergraduate psychology majors may apply to the accelerated master’s degree with a concentration in cognitive and behavioral neuroscience. If accepted, students will be able to earn a BA (p. 461) or BS in psychology (p. 469) and a MA in psychology (p. 479) with a concentration in cognitive and behavioral neuroscience after satisfactory completion of 146 credits.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to this program, see Application Requirements and Deadlines (http://psychology.gmu.edu/programs/application/LA-MA-ACEL-PSYC) on the departmental web site.

Accelerated Option Requirements

It is strongly recommended that students complete at least one semester of lab research before applying to the Accelerated Master’s Program.

While undergraduate students, accelerated master’s students complete six credits of graduate courses (chosen from PSYC 531 Mammalian Neurobiology, PSYC 555 Neuroimaging, PSYC 558 Neuronal Bases of Learning and Memory, PSYC 559 Behavioral Chemistry, and approved sections of PSYC 592 Special Topics) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for
the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from PSYC 531 Mammalian Neurobiology, PSYC 555 Neuroimaging, PSYC 558 Neuronal Bases of Learning and Memory, PSYC 559 Behavioral Chemistry, and approved sections of PSYC 592 Special Topics. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79) for more information.

**Psychology, PhD**

**Banner Code: LA-PHD-PSYC**

**Academic Advising**

2086 David King Hall
Fairfax Campus

Email: psycgrad@gmu.edu
Website: psychology.gmu.edu/programs/la-phd-psy

The PhD in psychology provides knowledge of the basic content areas in psychology and practical experience in applying this knowledge to solve human problems in relationships, work, and education. Core course requirements cover subject matter identified by the profession as essential to doctoral training. This includes biological, social, cognitive, and individual bases of behavior, as well as the history of psychology. The program offers the following concentrations: applied developmental psychology, clinical psychology, cognitive and behavioral neuroscience, human factors/applied cognition, and industrial/organizational psychology.

**Admissions & Policies**

**Admissions**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

For specific information, see Application Requirements and Deadlines (http://psychology.gmu.edu/programs/application/LA-PHD-PSYC).

**Policies**

For policies governing all graduate degrees, see Graduate Policies (p. 90).

**Reduction of Credit**

For students entering the doctoral program with a master’s degree, the number of credits required may be reduced by a maximum of 30 credits subject to the approval of the program faculty and the dean. Requests for reduction of credit are reviewed by a committee only after acceptance to the PhD program.

**Grading**

Students in the doctoral program are evaluated on the basis of grades, comprehensive exams, research, and communication skills. In doctoral courses, A and B are the only acceptable grades. Students in the doctoral program must successfully complete comprehensive exams administered each year.

**Requirements**

**Degree Requirements**

Total credits: 72-76

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 484) tab.

In addition to satisfying the requirements for all doctoral degrees, students must successfully complete 72–76 credits of required course work chosen in one of five concentrations. Each concentration consists of four educational components: core courses, upper-level specialty courses, supervised practica, and dissertation.

**Psychology Concentrations**

- Concentration in Applied Developmental Psychology (APD) (p. 484)
- Concentration in Clinical Psychology (CLN) (p. 486)
- Concentration in Cognitive and Behavioral Neuroscience (CBNR) (p. 487)
- Concentration in Human Factors/Applied Cognition (HF) (p. 488)
- Concentration in Industrial/Organizational Psychology (IO) (p. 489)

**Concentration in Applied Developmental Psychology (APD)**

**Overview**

The applied developmental psychology concentration is concerned with enhancing developmental processes and preventing developmental disorders in individuals and families across the life span. It uses the knowledge base and methodologies of developmental science to assist the development of individuals who vary in cultural and ethnic backgrounds; economic and social opportunities; physical, social, emotional, and cognitive abilities; and conditions of living (e.g., families, neighborhoods, communities, and physical settings). The program’s emphasis is on child development (infancy, early childhood, middle childhood, and adolescence), and students may focus their studies on the cognitive, social, emotional, language, personality, or physiological aspects of development.

The applied developmental concentration has two goals: to train students to teach and do research on basic and applied issues in child development for employment in such settings as universities, research institutes, and organizations, and to train students to do applied work in developmental psychology (consultation, program evaluation, assessment and evaluation, developmental interventions, and parent training) in such settings as schools, hospitals, courts, child care facilities, and other organizations. Applied developmental psychology doctoral students have the option of also completing course requirements for the MA concentration in school psychology.
Students pursuing this concentration must complete 72 credits comprised of doctoral course work and at least 12 credits of dissertation research. The number of credits required may be reduced for a prior master's degree as described above.

**Doctoral Coursework**

**Developmental Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 704</td>
<td>Life-Span Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

**Psychology Core**

Select two courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 701</td>
<td>Cognitive Bases of Behavior</td>
<td></td>
</tr>
<tr>
<td>PSYC 702</td>
<td>Biological Bases of Human Behavior</td>
<td></td>
</tr>
<tr>
<td>PSYC 703</td>
<td>Social Bases of Behavior</td>
<td></td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

**Quantitative Methods**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 557</td>
<td>Psychometric Methods</td>
<td></td>
</tr>
<tr>
<td>PSYC 646</td>
<td>Longitudinal Data Analysis</td>
<td></td>
</tr>
<tr>
<td>PSYC 652</td>
<td>Quantitative Methods II: Analysis of Variance</td>
<td></td>
</tr>
<tr>
<td>PSYC 756</td>
<td>Quantitative Methods IV: Multivariate Techniques in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 757</td>
<td>Advanced Topics in Statistical Analysis (with approval)</td>
<td></td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology (with approval)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 13

**Advanced Specialized Methods**

Students who take 6 credits of Advanced Specialized Methods must take 15 credits of Developmental Content.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 654</td>
<td>Naturalistic Methods in Psychology</td>
<td>6-9</td>
</tr>
<tr>
<td>PSYC 619</td>
<td>Applied Behavior Analysis: Principles, Procedures, and Philosophy</td>
<td></td>
</tr>
<tr>
<td>PSYC 794</td>
<td>Developmental Assessment</td>
<td></td>
</tr>
<tr>
<td>EDRS 631</td>
<td>Program Evaluation</td>
<td></td>
</tr>
<tr>
<td>PSYC 592</td>
<td>Special Topics (with approval)</td>
<td></td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology (with approval)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6-9

**Developmental Content**

Students who take 6 credits of Advanced Specialized Methods must take 15 credits of Developmental Content.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 669</td>
<td>Social and Emotional Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 566</td>
<td>Cognitive and Perceptual Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 615</td>
<td>Language Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 592</td>
<td>Special Topics (when topic is Peer Relationships and Development)</td>
<td></td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology (when topic is Peer Relationships and Development)</td>
<td></td>
</tr>
</tbody>
</table>

Select at least two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 592</td>
<td>Special Topics (when topic is Early Childhood Education, Childcare, and the Transition to School or developmental in content)</td>
<td></td>
</tr>
<tr>
<td>PSYC 614</td>
<td>The Psychology of Aging</td>
<td></td>
</tr>
<tr>
<td>PSYC 617</td>
<td>Child Psychopathology</td>
<td></td>
</tr>
<tr>
<td>PSYC 630</td>
<td>Developmental Disabilities</td>
<td></td>
</tr>
<tr>
<td>PSYC 648</td>
<td>Developmental Psychopathology</td>
<td></td>
</tr>
<tr>
<td>PSYC 780</td>
<td>Applied Developmental Psychology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12-15

**Professional Seminar/Professional Ethics**

Students take 1 credit in fall and 1 credit in spring of their first year and 1 additional credit at any other time (preferably in their second year).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 890</td>
<td>Seminar in Professional Psychology (3 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

**Directed Reading and Research or Practicum**

Students may fulfill this requirement with 8 credits of PSYC 897 Directed Reading and Research or a combination of PSYC 897 Directed Reading and Research and PSYC 792 Psychology Practicum.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 897</td>
<td>Directed Reading and Research (can be repeated for credit)</td>
<td></td>
</tr>
<tr>
<td>PSYC 792</td>
<td>Psychology Practicum (A maximum of 6 credits may be applied to this requirement.)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 8

**Elective Courses**

Students complete the 72 credits required for the degree with elective courses, which may include credits of PSYC 897 Directed Reading and Research over and above those used to fulfill the requirements above. Credits for MA thesis and proposal (PSYC 798 Thesis Proposal, PSYC 799 Master's Thesis) may not be used as electives in the PhD program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 897</td>
<td>Directed Reading and Research (can be repeated for credit)</td>
<td>8</td>
</tr>
</tbody>
</table>

Select electives to complete the 72 credits for the degree 72

**Advancement to Candidacy**

To advance to candidacy, students must complete all courses required by the program. Students must also successfully complete and pass written and oral comprehensive exams.
Dissertation Research

The dissertation requirement is designed to demonstrate the student’s ability to apply psychological principles to research problems. Once enrolled in PSYC 999 Doctoral Dissertation, students must follow the university’s continuous registration policy as specified in AP.6.10.6 Dissertation Research (p. 98). Students who defend in the summer must be registered for at least 1 credit of PSYC 999 Doctoral Dissertation.

Students complete a minimum of 3 credits of PSYC 998 Doctoral Dissertation Proposal and 3 credits of PSYC 999 Doctoral Dissertation. They must apply a minimum of 12 dissertation credits (PSYC 998 Doctoral Dissertation Proposal and PSYC 999 Doctoral Dissertation combined) to the degree. Because of the continuous registration policy, students may be required to register for additional credits of these courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>PSYC 999</td>
<td>Doctoral Dissertation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

Concentration in Clinical Psychology (CLN)

Overview

The clinical psychology concentration is committed to the clinical science model. Our goal is to train clinical psychologists who are capable of integrating research and applied clinical activities. The program is unique in approaching clinical psychology from social psychological and contextual perspectives. A social psychological approach uses theory and research from social psychology to understand emotional, cognitive, behavioral, and interpersonal functioning. A contextual perspective stresses the impact of social and cultural factors on the individual and vice versa. Most of the faculty members employ cognitive-behavioral and interpersonal approaches to research and clinical practice, but students also receive exposure to humanistic, existential, and psychodynamic perspectives.

Students pursuing this concentration must complete 76 graduate credits comprised of doctoral course work and at least 12 credits of dissertation research. The number of credits required may be reduced for a prior master’s degree as described above.

Doctoral Coursework

Biological Bases of Behavior

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 702</td>
<td>Biological Bases of Human Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

Developmental Bases of Behavior

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 704</td>
<td>Life-Span Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

Design and Data Analysis Emphasis

Select one Emphasis from the Following.

Basic Emphasis A

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 612</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 644</td>
<td>Methods for Social Research</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 11

Enhanced Quantitative Emphasis B

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 644</td>
<td>Methods for Social Research</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one additional approved quantitative course, such as those in the list shown under Quantitative Emphasis C

Total Credits: 13

Quantitative Emphasis C

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 644</td>
<td>Methods for Social Research</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two additional approved quantitative courses, such as:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 557</td>
<td>Psychometric Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 646</td>
<td>Longitudinal Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 652</td>
<td>Quantitative Methods II: Analysis of Variance</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 756</td>
<td>Quantitative Methods IV: Multivariate Techniques in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 757</td>
<td>Advanced Topics in Statistical Analysis (varies by semester but includes Bayesian methods)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology (Credits: 3 that include Meta-analysis/SEM)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 16

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 810</td>
<td>Psychological Assessment I</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 811</td>
<td>Psychological Assessment II</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 822</td>
<td>Scientific Foundations of Clinical Psychology I</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 830</td>
<td>History, Systems, and Theories of Personality and Psychotherapy</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 833</td>
<td>Social And Cognitive Foundations Of Clinical Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 860</td>
<td>Introductory Helping Skills and Motivational Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 861</td>
<td>Cognitive Behavioral Therapy for Youth 1</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 862</td>
<td>Cognitive Behavioral Therapy for Adults 1</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 881</td>
<td>Practicum in Clinical Psychology 2</td>
<td>1-3</td>
</tr>
</tbody>
</table>
Concentration in Cognitive and Behavioral Neuroscience (CBNR)

Overview
This cognitive and behavioral neuroscience concentration focuses on studying biological substrates of behavior. Core and affiliated faculty study areas as diverse as neural control of behavioral development; animal models of learning and memory and their disorders (such as Alzheimer’s); human brain systems involved in cognition, perception, human error, decision making, and movement; the relation of neural activity to human performance; and cognitive aging. A focus of the program is on translational neuroscience-complementary study of neural systems in humans and animals, including application of animal research to human behavior.

The program’s core facilities have well-equipped behavioral testing and histological/histochemical facilities. The program’s strong links to the Krasnow Institute for Advanced Study and the Center for Biomedical Genomics and Informatics allows opportunities for collaborative work as diverse as tissue slice preparations and molecular genetics. The doctoral program prepares students for research-based careers in academics, government, or industry.

Students pursuing this concentration must complete 72 graduate credits comprised of course work and at least 12 credits of dissertation research. The number of credits required may be reduced for a prior master’s degree as described above.

Doctoral Coursework
Cognitive and Behavioral Neuroscience Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 531</td>
<td>Mammalian Neurobiology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 555</td>
<td>Neuroimaging</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 559</td>
<td>Behavioral Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 558</td>
<td>Neuronal Bases of Learning and Memory</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC 685</td>
<td>Cognitive Neuroscience</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

Quantitative and Research Methods

Two required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 652</td>
<td>Quantitative Methods II: Analysis of Variance</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3

Elective Methods Course

Students will choose one elective course in methods in consultation with an advisor and with the approval of program faculty.

Elective Statistics or Methods Course

Students will choose one course in quantitative or research methods in consultation with an advisor and with the approval of the program faculty. This can include the course not chosen to fulfill the requirement above.

Total Credits: 3
Professional Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 890</td>
<td>Seminar in Professional Psychology</td>
<td>2</td>
</tr>
</tbody>
</table>

Take two credits in Professional Seminar 2

Research Credits

The research credit requirement can be met through completion of a master’s thesis (recommended) or other research course as approved by the program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 6 credits in either a master's thesis or other research course</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Elective Credits

Students can complete the 72 credit requirement through credits of additional coursework as approved by the program/advisor. Six of these courses must be outside of the cognitive and behavioral neuroscience program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select electives to complete the 72 credit requirement</td>
<td></td>
</tr>
</tbody>
</table>

Advancement to Candidacy

To advance to candidacy, students must complete all core courses required by the program. Students must also successfully complete and pass written and oral comprehensive exams.

Dissertation Research

The dissertation requirement is designed to demonstrate the student’s ability to apply psychological principles to research problems. Once enrolled in PSYC 999 Doctoral Dissertation, students must follow the university’s continuous registration policy as specified in AP.6.10.6 Dissertation Research (p. 98). Students who defend in the summer must be registered for at least 1 credit of PSYC 999 Doctoral Dissertation.

Students apply to this degree a minimum of 3 credits of PSYC 998 Doctoral Dissertation Proposal and 3 credits of PSYC 999 Doctoral Dissertation; they may apply a minimum 12 and a maximum of 24 dissertation credits (PSYC 998 Doctoral Dissertation Proposal and PSYC 999 Doctoral Dissertation combined) to the degree. Because of the continuous registration policy, students may be required to register for additional credits of these courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 12-24 credits from the following:</td>
<td>12-24</td>
</tr>
<tr>
<td>PSYC 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>PSYC 999</td>
<td>Doctoral Dissertation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12-24

Concentration in Human Factors/Applied Cognition (HF)

Overview

The human factors and applied cognition concentration covers basic theoretical and empirical issues and emphasizes research that applies cognitive science to real-world problems. The program builds bridges between human factors engineering and cognitive psychology. Many applications of cognitive science are in the domain of human factors, and many doctoral students who complete our program go on to be human factors professionals.

Students pursuing this concentration must complete 72 graduate credits comprised of course work and at least 12 credits of dissertation research. The number of credits required may be reduced for a prior master’s degree (up to 30 credits).

Doctoral Coursework

Cognitive Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 701</td>
<td>Cognitive Bases of Behavior</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC 768</td>
<td>Advanced Topics in Cognitive Science</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Biological, Social, or Developmental Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two from the following:</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Biological:</td>
<td></td>
</tr>
<tr>
<td>PSYC 558</td>
<td>Neuronal Bases of Learning and Memory</td>
<td></td>
</tr>
<tr>
<td>PSYC 559</td>
<td>Behavioral Chemistry</td>
<td></td>
</tr>
<tr>
<td>PSYC 685</td>
<td>Cognitive Neuroscience</td>
<td></td>
</tr>
<tr>
<td>PSYC 702</td>
<td>Biological Bases of Human Behavior</td>
<td></td>
</tr>
<tr>
<td>Social:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 667</td>
<td>Behavior in Small Groups and Teams</td>
<td></td>
</tr>
<tr>
<td>PSYC 668</td>
<td>Personality: Theoretical and Empirical Approaches</td>
<td></td>
</tr>
<tr>
<td>Developmental:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 566</td>
<td>Cognitive and Perceptual Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 669</td>
<td>Social and Emotional Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 704</td>
<td>Life-Span Development</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Quantitative and Research Methods

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 4

Advanced Statistics or Qualitative Methods

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four courses from the following:</td>
<td>12</td>
</tr>
<tr>
<td>STAT 525</td>
<td>Nonparametric Statistics and Categorical Data Analysis</td>
<td></td>
</tr>
<tr>
<td>PSYC 557</td>
<td>Psychometric Methods</td>
<td></td>
</tr>
<tr>
<td>PSYC 612</td>
<td>Advanced Statistics</td>
<td></td>
</tr>
<tr>
<td>PSYC 646</td>
<td>Longitudinal Data Analysis</td>
<td></td>
</tr>
<tr>
<td>PSYC 652</td>
<td>Quantitative Methods II: Analysis of Variance</td>
<td></td>
</tr>
<tr>
<td>PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td></td>
</tr>
<tr>
<td>PSYC 756</td>
<td>Quantitative Methods IV: Multivariate Techniques in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 757</td>
<td>Advanced Topics in Statistical Analysis</td>
<td></td>
</tr>
</tbody>
</table>
Dissertation Research

The dissertation requirement is designed to demonstrate the student's ability to apply psychological principles to research problems. Once enrolled in PSYC 999 Doctoral Dissertation, students must follow the university's continuous registration policy as specified in AP6.10.6 Dissertation Research (p. 98). Students who defend in the summer must be registered for at least 1 credit of PSYC 999 Doctoral Dissertation.

Students complete a minimum of 3 credits of PSYC 998 Doctoral Dissertation Proposal and 3 credits of PSYC 999 Doctoral Dissertation. They must apply a minimum of 12 dissertation credits (PSYC 998 Doctoral Dissertation Proposal and PSYC 999 Doctoral Dissertation combined) to the degree. Because of the continuous registration policy, students may be required to register for additional credits of these courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>12</td>
</tr>
<tr>
<td>PSYC 999</td>
<td>Doctoral Dissertation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Industrial/Organizational Psychology (IO)

Overview

The industrial/organizational psychology concentration focuses on multiple aspects of behavior in organizational settings, including personnel selection, quantitative analysis, teams, leadership, work and family issues, and organizational health issues. Mason's graduate work in this area emphasizes research as the key to knowledge in both academic and applied settings. The program fosters a peer-oriented environment whereby students collaborate on numerous projects in addition to working with faculty members, in many different areas of industrial/organizational psychology.

Students pursuing this concentration must complete 72 graduate credits comprised of course work and at least 12 credits of dissertation research. The number of credits required may be reduced for a prior master's degree as described above.

Doctoral Coursework

Core Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 703</td>
<td>Social Bases of Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Required Courses in Statistics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 557</td>
<td>Psychometric Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 633</td>
<td>Evaluative Research in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 754</td>
<td>Quantitative Methods III: Psychological Applications of Regression Techniques</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology</td>
<td>1-6</td>
</tr>
</tbody>
</table>

Select one additional specialized statistics course 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 734</td>
<td>Seminar in Human Factors and Applied Cognition</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 768</td>
<td>Advanced Topics in Cognitive Science</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 730</td>
<td>Practicum in Applied Psychology</td>
<td>1-6</td>
</tr>
<tr>
<td>or PSYC 592</td>
<td>Special Topics</td>
<td></td>
</tr>
</tbody>
</table>

Advancement to Candidacy

To advance to candidacy, students must complete all core courses required by the program. Students must also successfully complete and pass written comprehensive exams.
1 Such as PSYC 646 Longitudinal Data Analysis, PSYC 756 Quantitative Methods IV: Multivariate Techniques in Psychology, PSYC 892 Special Topics in Psychology (not SEM/META)

**Survey of Content**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 631</td>
<td>Industrial and Personnel Testing and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 636</td>
<td>Survey of Industrial Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 639</td>
<td>Survey of Organizational Processes</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 739</td>
<td>Seminar in Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

**Specialized Content**

Students taking 12 credits of specialized content may take an additional 3 credits of PSYC 897 Directed Reading and Research.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 638</td>
<td>Training: Psychological Contributions to Theory, Design, and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 667</td>
<td>Behavior in Small Groups and Teams</td>
<td></td>
</tr>
<tr>
<td>PSYC 733</td>
<td>Issues in Personnel Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 741</td>
<td>Psychology of Work Motivation</td>
<td></td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12-15

**Professional Development**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 890</td>
<td>Seminar in Professional Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 892</td>
<td>Special Topics in Psychology</td>
<td>6</td>
</tr>
</tbody>
</table>

**Recommended:**

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 730</td>
<td>Practicum in Applied Psychology or PSYC 897 &amp; Directed Reading and Research</td>
<td></td>
</tr>
<tr>
<td>PSYC 730</td>
<td>Practicum in Applied Psychology or PSYC 897 &amp; Directed Reading and Research</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

1 Students taking 12 credits of specialized content may take an additional 3 credits of PSYC 897 Directed Reading and Research.

**Electives**

Students complete the remaining credits required for this degree through additional course work in professional development or dissertation.

**Advancement to Candidacy**

To advance to candidacy, students must complete all core courses required by the program. Students must also successfully complete and pass written and oral comprehensive exams.

**Dissertation Research**

The dissertation requirement is designed to demonstrate the student’s ability to apply psychological principles to research problems. Once enrolled in PSYC 999 Doctoral Dissertation, students must follow the university’s continuous registration policy as specified in AP6.10.6 Dissertation Research (p. 98). Students who defend in the summer must be registered for at least 1 credit of PSYC 999 Doctoral Dissertation.

Students complete a minimum of 3 credits of PSYC 998 Doctoral Dissertation Proposal and 3 credits of PSYC 999 Doctoral Dissertation. They must apply a minimum of 12 dissertation credits (PSYC 998 Doctoral Dissertation Proposal and PSYC 999 Doctoral Dissertation combined) to the degree. Because of the continuous registration policy, students may be required to register for additional credits of these courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>12</td>
</tr>
<tr>
<td>PSYC 999</td>
<td>Doctoral Dissertation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

**Department of Religious Studies**

Phone: 703-993-1290
Website: religious.gmu.edu

**Undergraduate Program**

The department offers a bachelor of arts degree in religious studies for students who are interested in learning more about the world’s religious traditions. Majors explore the many dimensions of religion and study religion's spiritual, historical, cultural, and social aspects.

**Areas of Study**

Areas of study offered by the department include Asian religious traditions, Near (Middle) East religious traditions (Judaism, Islam, and Christianity), and comparative aspects of religion. Though the required coursework, majors in religious studies develop skills in reading and interpreting sacred texts. They explore the cultural and social dimensions of religion along with a consideration of religious values and ethics, from comparative and cross-cultural perspectives with relation to global issues.

**Courses**

The courses in the undergraduate program are writing intensive. They enable students to study and analyze religious ideas and symbols and give them the skills they need to present well-argued papers.

**Minors**

Students majoring in religious studies are encouraged to do one of the many minors offered by the college. See Minors and Interdisciplinary Minors (p. 305) on the College of Humanities and Social Sciences page.

The department also offers minors in religious studies and Judaic studies, both of which are available to students in all majors in the university.

**Graduate Program**

The department sponsors the concentration in religious studies in the interdisciplinary studies, MAIS (p. 542). This concentration is designed for students who are interested in exploring the world’s major religions at the graduate level. Students study the development and interaction of the global religious traditions that influence human identity, behavior, culture, and values. They investigate the effects that historical crises and
the forces of change have on religion, placing contemporary religious pluralism and inter-religious dialog in a global context.

Faculty

Department Faculty
Professor
Ro, Sachedina (chair)
Professors Emeriti
Burns
Associate Professors
M. Dakake, Farina, Nguyen, Rashkover
Assistant Professors
G. Sparks, Turner
Adjuncts
Bond, D. Dakake, Hostetter, Padgett, Rine, S. Sparks

Programs

• Judaic Studies Minor
• Religious Studies Minor
• Religious Studies, BA

Judaic Studies Minor
Banner Code: JS

Academic Advising
B465 Robinson Hall
Fairfax Campus
Website: mcl.gmu.edu/programs/la-minor-mcl-itln

The minor is designed for students interested in the culture, history, and politics of Jewish communities across the world.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 491) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 352</td>
<td>Judaism from Exile to Talmud</td>
<td>3</td>
</tr>
<tr>
<td>RELI 370</td>
<td>Judaism</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three courses from the following: 1</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>HEBR 150</td>
<td>Introduction to Biblical Hebrew</td>
<td></td>
</tr>
<tr>
<td>HEBR 160</td>
<td>Readings in Biblical Hebrew</td>
<td></td>
</tr>
<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td></td>
</tr>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RELI 350</td>
<td>Religion and History of Ancient Israel</td>
<td></td>
</tr>
<tr>
<td>RELI 372</td>
<td>American Judaism</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

1 Special topics courses and independent studies courses, when relevant, may be used to fulfill this requirement with prior written approval of the undergraduate director.

Religious Studies, BA

Banner Code: LA-BA-RELI

B465 Robinson Hall
Fairfax Campus
Website: religious.gmu.edu/programs/la-ba-reli

Religious studies provides students an understanding of the traditions of religions across the globe. Areas of study offered by the department include Asian religious traditions, Near (Middle) East religious traditions (Judaism, Islam, and Christianity), and comparative aspects of religion. Students develop skills in reading and interpreting sacred texts. They explore the cultural and social dimensions of religion along with a consideration of religious values and ethics from comparative and cross-cultural perspectives, and with relation to global issues. Students go on to work in the government, service, or nonprofit sectors, as well as pursue graduate work in the humanities.

Admissions & Policies

Policies
Students in this major complete at least 33 credits within the major, earning a minimum grade of 2.00 in each course. No course applied to the major in religious studies may be used to fulfill more than one requirement.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).
Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 491) tab.

Core Courses in the Major

Introductory Courses in the Main World Religions

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Comparative or Methodological Aspects of the Study of Religion

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 313</td>
<td>Philosophy of Religion</td>
<td>3</td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
</tr>
<tr>
<td>RELI 341</td>
<td>Global Perspectives on Spirituality and Healing (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 385</td>
<td>Religion and Society</td>
<td>3</td>
</tr>
<tr>
<td>RELI 376</td>
<td>Special Topics in Religious Thought</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 6

1 Only when topic is relevant and with the prior written approval of the undergraduate director.

Religious Studies

Select four courses (12 credits) from any religious studies courses (RELI) at the 300 and 400 level other than those used to fulfill the requirements above.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits 12

1 Choose courses in a scriptural language (such as Arabic, Biblical Hebrew, Chinese, Classical Greek, Latin, or Sanskrit). Up to 6 credits of a scriptural language may be used to fulfill this requirement and the 6 credits of electives.

One Seminar

Students should take this course during their senior year.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 420</td>
<td>Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Electives in the Major

Select two electives in consultation with an advisor. 1 6

Total Credits 6

1 Choose from courses in religious studies, related disciplines (including anthropology, art history, and history), or a scriptural language (such as Arabic, Biblical Hebrew, Chinese, Classical Greek, Latin, or Sanskrit). Up to 6 credits of a scriptural language may be used to fulfill this requirement and the requirement of 12 credits in religious studies at 300 and 400 level.

Writing-Intensive Requirement

The university requires all students to complete at least one course designated "writing intensive" in their majors. Students majoring in religious studies fulfill this requirement by successfully completing RELI 420 Seminar.

Upper Level Requirement

Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL (p. 2044)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RELI (p. 2144)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement) 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH (p. 1212)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
**Non-Western Culture**

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
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<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
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<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td>3</td>
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<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<tr>
<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
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<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
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<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
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<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
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<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>HIST 252</td>
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<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 326</td>
<td>Stalinism</td>
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<tr>
<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
<td>3</td>
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<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
<td>3</td>
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<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
</tr>
<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
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<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
<td>3-6</td>
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<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>3</td>
</tr>
<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td>3</td>
</tr>
<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
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<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
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<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
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<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
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<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
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<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
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<tr>
<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
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<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
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<tr>
<td>RELI 375</td>
<td>Qur’an and Hadith</td>
<td>3</td>
</tr>
<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
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<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.
### Accelerated Master's

The accelerated master's program below specifies the BA in religious studies as a feeder degree for its program. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

### Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)

**Overview**

Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Selected Majors**

- Art history (p. 394)
- Philosophy (p. 442)
- Conflict analysis and resolution (p. 936)
- Global affairs (p. 523)

### Code Title Credits

**Foundation Requirements**

- Written Communication (ENGH 101) (p. 142) 3
- Oral Communication (p. 142) 3
- Quantitative Reasoning (p. 143) 3
- Information Technology and Computing (p. 143) 3

**Exploration Requirements**

- Arts (p. 144) 3
- Global Understanding (p. 146) 3
- Literature (p. 147) 3
- Natural Science (p. 148) 7
- Social and Behavioral Sciences (p. 150) 3
- Western Civilization/World History (p. 151) 3

**Integration Requirements**

- Written Communications (ENGH 302) (p. 142) 3
- Writing-Intensive (p. 151) 1
- Synthesis/Capstone (p. 153) 2

**Total Credits** 40

---

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2. Minimum 3 credits required.

---

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements

While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

**Code Title Credits**

Select two from the following: 6

- RELI 600 Interdisciplinary Pathways in the Study of Religion
- RELI 630 Theories and Methods in the Study of Religion
- RELI 632 Interreligious Dialogue
- RELI 633 Issues in Religious Ethics
- RELI 636 Religion and the Natural Environment
- RELI 637 Religion and Secularity in State and Society

**Total Credits** 6

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

**Code Title Credits**

Select 6 credits from the following: 6

- RELI 600 Interdisciplinary Pathways in the Study of Religion
- RELI 630 Theories and Methods in the Study of Religion
- RELI 632 Interreligious Dialogue
Religious Studies Minor

RELI 633 Issues in Religious Ethics
RELI 636 Religion and the Natural Environment
RELI 637 Religion and Secularity in State and Society

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP 1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Religious Studies Minor

Banner Code: RELI

Academic Advising
B465 Robinson Hall
Fairfax Campus
Website: religious.gmu.edu/programs/la-minor-reli-reli

The minor introduces students to the world’s religious traditions. Within the minor, students may focus on the religious traditions of Asia, those of the Near (Middle) East, or comparative aspects of religion.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in each course applied to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 496) tab.

Core Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>RELI 100</td>
<td>The Human Religious Experience (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select five elective courses in religious studies (p. 2144)</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits 15

1 At least three courses must be at the 300 level or above.

Department of Sociology and Anthropology

B305 Robinson Hall
Fairfax Campus
Phone: 703-993-1440
Website: soan.gmu.edu

Undergraduate Programs

Anthropology
The department offers a bachelor of arts degree in anthropology. The program draws broadly from the social sciences, humanities, and natural sciences, making it a strong undergraduate major that provides a sound interdisciplinary preparation for a variety of careers.

Bachelor’s/Accelerated Master’s Program
The department offers highly-qualified majors in anthropology the opportunity to apply to an accelerated master’s degree program in anthropology (p. 506). If accepted, students will be able to earn both the undergraduate and graduate degrees after satisfactory completion of 144 credits, generally within five years.

Sociology
The department offers a bachelor of arts degree in sociology. Sociology majors study how social movements emerge from the collective efforts of individuals and the role that social forces play in defining racial identities and gender roles. They take courses in the theories that explain social phenomena and develop strong research skills, learning how to conduct surveys, interviews, systematic observation as well as how to evaluate sources.

With the strong research skills, critical thinking, and effective writing that are the hallmark of sociology graduates, they are prepared for a variety of career paths from teaching, human service, and human resource occupations to work in the criminal justice system, marketing, and social research. The sociology major is also excellent preparation for students considering law school or graduate training in the social and behavioral sciences.

Bachelor’s/Accelerated Master’s Program
The department offers highly-qualified majors in sociology the opportunity to apply to an accelerated master’s degree program in sociology (p. 516). If accepted, students will be able to earn both the undergraduate and graduate degrees after satisfactory completion of 147 credits, generally within five years.

Minors
The department offers minors in anthropology and sociology available to students in any major. The department coordinates the interdisciplinary minor in immigration studies and the faculty participate in many other minors in the college.

Graduate Programs

Anthropology
The department offers a master of arts degree in anthropology. Students can choose one of three emphases: advanced training in sociocultural
anthropology; culture, health and bioethics; or transnational and
global issues. They can choose from many courses that are richly
interdisciplinary covering such diverse topics as nationalism and
transnationalism; bioethics; social movements, ethnicity and identity;
conflict and violence; migration, displacement, and refugees; regional
ethnography; and political economy and globalization. Departmental
specializations include the following regions: Africa, Asia, Central and
South America, Europe, the Middle East, and the United States. Course
work progresses from core courses to more advanced courses and
culminates in a thesis.

Sociology
The department offers master's and doctoral degrees in sociology.
Students pursuing a master's degree in sociology take required courses
in theory and methods and a host of electives. Students may choose
to focus their electives in one of two specializations: institutions and
inequalities or sociology of globalization.

The doctoral degree in sociology provides rigorous training in public
and applied social research, including skills in research design, data
analysis, and substantive areas that are pertinent to various sectors in
the Washington, D.C., area. Graduates have the theoretical, analytical, and
professional skills that prepare them for academic positions in teaching
or research. They are also well-qualified for nonacademic positions in
the many settings that rely on the expertise of sociologists including
human service agencies, marketing research firms, educational systems,
nonprofit foundations, and law enforcement agencies.

Funding
The department has a limited number of teaching assistantships, which
are awarded on a competitive basis. Other sources of funding such as
grants, loans, and employment on campus are also available. Students
awarded assistantships must register for a minimum of six credits a
semester and show satisfactory progress toward their degree.

Faculty

Department Faculty
Emeritus Faculty
Anthropology: Black, Dumont, Golomb, Haines, Seligmann, Williams
Sociology: Borkman, Guagnano, Rosenblum

Professors
Anthropology: Schiller
Sociology: Best, Davis, Dennis, Jacobs, Kurtz, Scimecca, Wite

Associate Professors
Anthropology: Bickford, Trencher
Sociology: Bockman, Dale, Hanrahan, Kim

Assistant Professors
Anthropology: Hughes Rinker, Klaus, Mantz, Sadana, Takahashi, Temple

Term Associate Professor
Masters

Term Assistant Professor
Sociology: Storelli

Adjuncts
Anthropology: Gerber, Hodges, Lowry
Sociology: Mitcho, Nambiar, Pearlman, Smith

Affiliate Faculty
Anthropology: Avruch, Blum, Usher
Sociology: Goldstone, Johnson, Nambiar, Sandole-Staroste, Smith,
Spalter-Roth

Requirements & Policies

Policies
Non-Degree Status
Applicants who do not wish to pursue a degree may apply for non-
degree status. Non-degree students must meet the same admission
requirements as degree-seeking students (minimum undergraduate
GPA of 3.00, among other criteria). Non-degree students may later apply
for admission to a degree program. Up to nine credits earned in non-
degree status may transferred to the master's degrees in anthropology or
sociology, subject to the approval of the program director and dean.

Programs

• Anthropology Minor
• Anthropology, BA
• Anthropology, MA
• Immigration Studies Minor
• Sociology Minor
• Sociology, BA
• Sociology, MA
• Sociology, PhD

Anthropology, BA
Banner Code: LA-BA-ANTH
B305 Robinson Hall
Fairfax Campus

Website: soan.gmu.edu/programs/la-ba-anth

Anthropology is the study of human beings and their cultures. Majors
develop an eye for detail and careful observation, critical thinking,
sensitivity to the unfamiliar, skills in research and writing, and an ability
to describe and understand culture. The programs in archaeology
and biological anthropology give hands-on research experience with
faculty through fieldwork in bioarchaeology, archaeology, and museum-
based data collection. The programs in cultural anthropology connect
anthropological research to current social challenges such as health and
disease, urbanization, and geopolitics. It is a strong undergraduate major
that provides sound interdisciplinary preparation for a variety of careers.
Admissions & Policies

Policies

Students pursuing this degree must complete 36 credits within the major, with a minimum GPA of 2.00.

For policies governing all undergraduate degrees, see AP 5 Undergraduate Policies (p. 89).

Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 498) tab.

Students are advised to consult with an advisor to learn how they can fulfill Mason Core (p. 142) requirements in global understanding, information technology, and synthesis, as well as the college-level requirement in non-Western culture.

Core Courses in the Major

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 120</td>
<td>Unearthing the Past: Prehistory, Culture and Evolution (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ANTH 135</td>
<td>Introduction to Biological Anthropology (Mason Core) (p. 142)</td>
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Total Credits 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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Cultural Anthropology

Select one course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 312</td>
<td>Political Anthropology (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td></td>
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<tr>
<td>ANTH 320</td>
<td>Global Africa</td>
<td></td>
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<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
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</tr>
<tr>
<td>ANTH 331</td>
<td>Refugees (Mason Core) (p. 142)</td>
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<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 340</td>
<td>Comparative Perspectives on Immigration</td>
<td></td>
</tr>
<tr>
<td>ANTH 345</td>
<td>Ritual and Power in Social Life</td>
<td></td>
</tr>
<tr>
<td>ANTH 370</td>
<td>Environment and Culture</td>
<td></td>
</tr>
<tr>
<td>ANTH 375</td>
<td>Culture, Power, History</td>
<td></td>
</tr>
<tr>
<td>ANTH 376</td>
<td>Food and Culture</td>
<td></td>
</tr>
<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td></td>
</tr>
<tr>
<td>ANTH 382</td>
<td>Urban Anthropology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 399</td>
<td>Issues in Anthropology (with program approval)</td>
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<tr>
<td>ANTH 400</td>
<td>Engaging the World: Anthropological Perspectives (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 488</td>
<td>Gender, Sexuality, and Culture</td>
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Total Credits 3

Biological Anthropology

Select 3-5 credits from the following: 3-5

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>ANTH 350</td>
<td>Human Growth and Development</td>
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<tr>
<td>ANTH 355</td>
<td>Human Origins</td>
<td></td>
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<tr>
<td>ANTH 357</td>
<td>Bioarchaeology</td>
<td></td>
</tr>
<tr>
<td>ANTH 363</td>
<td>Humans, Disease, and Death (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 365</td>
<td>Scientific Racism and Human Variation</td>
<td></td>
</tr>
<tr>
<td>ANTH 366</td>
<td>Food and Human Evolution</td>
<td></td>
</tr>
<tr>
<td>ANTH 388</td>
<td>Human Osteology and Human Osteology Lab 1</td>
<td></td>
</tr>
<tr>
<td>ANTH 393</td>
<td>Paleopathology</td>
<td></td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ANTH 399</td>
<td>Issues in Anthropology (with program approval)</td>
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</tr>
<tr>
<td>ANTH 496</td>
<td>Evolutionary Theory</td>
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</tr>
</tbody>
</table>

Total Credits 3-5

1 Students taking ANTH 388 Human Osteology/ANTH 389 Human Osteology Lab will have 5 credits for this requirement.

Archaeology

Select one course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
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<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ANTH 324</td>
<td>Warfare, Violence, and Sacrifice in Antiquity</td>
<td></td>
</tr>
<tr>
<td>ANTH 325</td>
<td>Field Techniques in Archaeology</td>
<td></td>
</tr>
<tr>
<td>ANTH 345</td>
<td>Ritual and Power in Social Life</td>
<td></td>
</tr>
<tr>
<td>ANTH 357</td>
<td>Bioarchaeology</td>
<td></td>
</tr>
<tr>
<td>ANTH 377</td>
<td>Mortuary Archaeology</td>
<td></td>
</tr>
<tr>
<td>ANTH 378</td>
<td>Humans and Animals</td>
<td></td>
</tr>
<tr>
<td>ANTH 379</td>
<td>Andean Archaeology</td>
<td></td>
</tr>
<tr>
<td>ANTH 387</td>
<td>Zooarchaeology</td>
<td></td>
</tr>
</tbody>
</table>
ANTH 396 Issues in Anthropology: Social Sciences (Mason Core) (p. 142) (with program approval)

ANTH 399 Issues in Anthropology (with program approval)

Total Credits 3

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>Theory Course</td>
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<tr>
<td>ANTH 390</td>
<td>Theories, Methods, and Issues I</td>
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<td>Total Credits</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Methods Course</td>
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<tr>
<td>ANTH 386</td>
<td>Quantitative Methods in Anthropology</td>
<td>3</td>
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<tr>
<td>or ANTH 450</td>
<td>Qualitative Methods: Nonstatistical Approaches in Culture and Social Research</td>
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<td>Total Credits</td>
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</table>

Electives in the Major

Select 12 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ANTH courses 300-499 (p. 1212)</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Writing-Intensive Requirement

The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in anthropology may fulfill this requirement by successfully completing ANTH 490 Theories, Methods, and Issues II.

Additional Electives

Any remaining credits may be completed with electives to bring the degree total to 120.

Upper Level Requirement

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL (p. 2044)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RELI (p. 2144)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement)¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH (p. 1212)</td>
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<tr>
<td>CRIM (p. 1514)</td>
<td></td>
<td></td>
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<tr>
<td>ECON (p. 1564)</td>
<td></td>
<td></td>
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<tr>
<td>GOVT (p. 1774)</td>
<td></td>
<td></td>
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<tr>
<td>HIST (p. 1818)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>LING (p. 1896)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC (p. 2074)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCI (p. 2167)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>

¹ The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.
² HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.
Intermediate-level proficiency in one foreign language, fulfilled by:

- Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)
- Or achieving a satisfactory score on an approved proficiency test
- Or completing the following ASL three course sequence:
  - EDSE 115 American Sign Language (ASL) I
  - EDSE 116 American Sign Language (ASL) II
  - EDSE 219 American Sign Language (ASL) III

Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Non-Western Culture**
Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
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<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
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<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
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<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
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<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
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<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
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<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
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<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
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<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
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<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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<td>DANC 118</td>
<td>World Dance</td>
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<tr>
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<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<tr>
<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 316</td>
<td>Geography of Latin America</td>
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<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<td>Geography of the Soviet Succession States</td>
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<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<td>GOVT 328</td>
<td>Global Political Theory</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
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<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
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<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

Code | Title | Credits
--- | --- | ---

### Foundation Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 326</td>
<td>Stalinism</td>
<td>3</td>
</tr>
<tr>
<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
<td>3</td>
</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 358</td>
<td>Post-1949 China (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
</tr>
<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core)</td>
<td>3-6</td>
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<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>3</td>
</tr>
<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td>3</td>
</tr>
<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
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<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core)</td>
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</tr>
<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>3</td>
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<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core)</td>
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<td>RELI 211</td>
<td>Religions of the West (Mason Core)</td>
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<td>RELI 212</td>
<td>Religions of Asia (Mason Core)</td>
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<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
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<td>RELI 313</td>
<td>Hinduism (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
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<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core)</td>
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</tr>
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<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
</tr>
<tr>
<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
<td>3</td>
</tr>
<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 375</td>
<td>Qur’an and Hadith</td>
<td>3</td>
</tr>
<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
<td>3</td>
</tr>
</tbody>
</table>

### Exploration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

1. A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

### Integration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Total Credits

- **40 Credits**

### Honors

**Honors in the Major**

Highly-qualified students majoring in anthropology may apply to graduate with honors in the major.

**Eligibility**

To be eligible, students must have completed at least 60 credits, taken ENGH 302 Advanced Composition (Mason Core) (p. 142) for the social sciences, completed 15 credits of anthropology (including ANTH 114 Introduction to Cultural Anthropology (Mason Core)
(p. 142)), and have a minimum cumulative GPA of 3.30 and a minimum grade of B+ in anthropology courses.

Requirements
If accepted, students complete two honors courses. The first course is an honors section of one of these courses: ANTH 496 Evolutionary Theory, ANTH 450 Qualitative Methods: Nonstatistical Approaches in Culture and Social Research, ANTH 495 Internship or another course chosen in consultation with the honors director. The second course is ANTH 499 Independent Research, in which students complete an honors paper written under the guidance of an anthropology faculty member. All candidates for honors in the major participate in an honors colloquium. To graduate with honors in the major, students must complete the honors coursework with a minimum GPA of 3.50.

Accelerated Master's

The accelerated master’s programs in the list below specify the BA in anthropology as a feeder degree for their programs. Many other accelerated master’s programs are also available for any bachelor’s degree at Mason. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at Mason.

Anthropology, BA/Anthropology, Accelerated MA

Overview
Highly-qualified Mason anthropology majors may apply to the accelerated master’s degree program. If accepted, students will be able to earn both a BA and a MA in anthropology after satisfactory completion of 144 credits, sometimes within 5 years. Students with both a BA and MA have a competitive advantage when applying to PhD programs in anthropology. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in anthropology, see Application Requirements and Deadlines (http://soan.gmu.edu/programs/LA-MA-ANTH/application).

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses (chosen from ANTH 535 Anthropology and the Human Condition: Seminar I, ANTH 536 Anthropology and the Human Condition: Seminar II, and ANTH 650 Methods in Anthropology) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. On completion and conferment of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferment of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from ANTH 635 Regional Ethnography, ANTH 650 Methods in Anthropology, or ANTH 699 Contemporary Issues in Sociocultural Anthropology). These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)

Overview
Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Selected Majors
Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferment of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.
### Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

### Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)

**Overview**

Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

### Selected Majors

- Art history (p. 394)
- Philosophy (p. 442)
- Conflict analysis and resolution (p. 936)
- Global affairs (p. 523)
- History (p. 402)

- Religious studies (p. 491)
- Russian and Eurasian studies (p. 568)
- Sociology (p. 507)
- Anthropology (p. 497)

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious studie (p. 496).

### Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application).

### Accelerated Option Requirements

While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

<table>
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<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
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<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
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</table>

Total Credits: 6

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

### Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
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<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
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</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
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The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).
Anthropology Minor

<table>
<thead>
<tr>
<th>Code</th>
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<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
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</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

Overview

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master's in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Selected Majors

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

Accelerated Option Requirements

While undergraduate students, accelerated master's students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/ Accelerated Master's Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Anthropology Minor

Banner Code: ANTH

Academic Advising

B305 Robinson Hall
Fairfax Campus
Website: soan.gmu.edu/programs/la-minor-soan-anth

A minor in anthropology enriches many majors with its holistic and cross-cultural perspective. It is a good fit for students majoring in biology, communication, English, history, psychology, sociology, and others. This minor will be useful for anyone contemplating an international career or a future profession involving culturally-diverse populations.

Admissions & Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 504) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 120</td>
<td>Unearthing the Past: Prehistory, Culture and Evolution (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
Introduction to Biological Anthropology (Mason Core) (p. 142)

Regional Ethnography Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three elective courses in anthropology at the 300- or 400-level (p. 1212)</td>
<td>9</td>
</tr>
</tbody>
</table>

Total Credits 9

Anthropology, MA

Banner Code: LA-MA-ANTH

Academic Advising

B305 Robinson Hall
Fairfax Campus

Website: soan.gmu.edu/programs/la-ma-ANTH

Anthropology, MA students learn the history of critical inquiry in the discipline of anthropology and how to approach and develop a topic of research. Students are trained in fieldwork and ethnographic methods appropriate for their goals and are guided through the research and writing methods central to completion of a thesis or project. In the process, students learn about the ethics of conducting research. Students may focus on cultural anthropology or bioarchaeology. The program prepares students for careers in government, the private sector, non-governmental organizations, museums, and numerous other fields, or to pursue a doctorate in the field.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Admissions (p. 68). For specific information, see Application Requirements and Deadlines (http://soan.gmu.edu/programs/application/LA-MA-ANTH).

Policies

For policies governing all graduate degrees, see Graduate Policies (p. 90).

Reduction of Credit

Students with previously conferred graduate degrees may request a reduction of credit. Reductions of credit may not exceed six elective credits and no reductions will be given for required core courses. Evaluation of a previously conferred graduate degree for reduction of credit is not automatic and students must request this review in their first semester of matriculation in the master’s program.

Satisfactory Progress

According to university policy, students may be terminated if they fail to achieve satisfactory progress toward their degree. Students in the program are judged as having failed to achieve satisfactory progress toward their degree for the following reasons:

- two consecutive semesters in which academic warnings appear on their transcript
- failure to successfully complete ANTH 535 Anthropology and the Human Condition: Seminar I, ANTH 536 Anthropology and the Human Condition: Seminar II, and ANTH 650 Methods in Anthropology within 4 semesters of first enrolling as degree-seeking students in the MA in anthropology program
- failure to enroll in graduate coursework in anthropology for 2 consecutive semesters, unless there are compelling reasons for not having done so

Like all academic policies, these provisions take effect with the publication of this catalog and apply to all graduate students in the MA in anthropology regardless of their catalog year.

Requirements

Degree Requirements

Total credits: 30

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 505) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 535</td>
<td>Anthropology and the Human Condition: Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 536</td>
<td>Anthropology and the Human Condition: Seminar II</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 650</td>
<td>Methods in Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 798</td>
<td>Thesis or Project Proposal</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 15 credits from advanced courses in anthropology chosen in consultation with an advisor (p. 1212)</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits 15

Students can choose to focus their electives around an emphasis in these four areas: advanced training in sociocultural anthropology; culture,
health and bioethics; museums and anthropology; or transnational and global issues. Up to six credits may be from other disciplines with the prior written approval of the graduate director.

Students may take ANTH 690 Internship as elective credit. An internship can serve as a primary field research site for the thesis.

**Thesis or Research Project**

Students should be aware of the policies governing theses. They must follow the thesis enrollment policy (p. 95) of the university and once enrolled in ANTH 799 Master’s Thesis, maintain continuous enrollment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Three credits from one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 796</td>
<td>Master’s Research Project</td>
<td></td>
</tr>
<tr>
<td>ANTH 799</td>
<td>Master’s Thesis</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**

3

---

**Accelerated Master’s**

**Anthropology, BA/Anthropology, Accelerated MA**

**Overview**

Highly-qualified Mason anthropology majors may apply to the accelerated master’s degree program. If accepted, students will be able to earn both a BA and a MA in anthropology after satisfactory completion of 144 credits, sometimes within 5 years. Students with both a BA and MA have a competitive advantage when applying to PhD programs in anthropology. See AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in anthropology, see Application Requirements and Deadlines (http://soan.gmu.edu/programs/MA-ANTH/application).

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses (chosen from ANTH 535 Anthropology and the Human Condition: Seminar I, ANTH 536 Anthropology and the Human Condition: Seminar II, and ANTH 650 Methods in Anthropology) as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from ANTH 635 Regional Ethnography, ANTH 650 Methods in Anthropology, or ANTH 699 Contemporary Issues in Sociocultural Anthropology). These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP 1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Immigration Studies Minor**

Banner Code: IMMS

**Academic Advising**

B305 Robinson Hall
Fairfax Campus
Phone: 703-993-1178
Website: soan.gmu.edu/programs/LA-MINOR-LA-IMMS

The minor combines perspectives from the humanities and social sciences to provide an interdisciplinary and comparative understanding of the immigrant experience, ethnic identity, assimilation, ethnic exclusion and conflict, and refugee situations.

**Faculty**

Cleaveland, Haines, Ihara, Leeman, Rabin, Ritchie, Seligmann, Shutika, Trencher (director)

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 506) tab.
Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 340</td>
<td>Comparative Perspectives on Immigration</td>
<td>3</td>
</tr>
<tr>
<td>or SOCI 330</td>
<td>US Immigrants and Immigration</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Comparative Migration, Ethnicity and Race

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 331</td>
<td>Refugees (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 328</td>
<td>Asian American Women Writers (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 416</td>
<td>Ethnicity and Migration in Folklore</td>
<td></td>
</tr>
<tr>
<td>ENGH 352</td>
<td>Topics in Ethnic American Literature</td>
<td></td>
</tr>
<tr>
<td>GOVT 337</td>
<td>Ethnic Politics in Western Europe and North America</td>
<td></td>
</tr>
<tr>
<td>INTS 416</td>
<td>Refugee and Internal Displacement (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 417</td>
<td>Human Trafficking and the International Community</td>
<td></td>
</tr>
<tr>
<td>INTS 437</td>
<td>Critical Race Studies (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 438</td>
<td>Representations of Race (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SPAN 388</td>
<td>Introduction to Latina/o Studies (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Electives

Select two electives from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 302</td>
<td>Culture, Identity, and Conflict</td>
<td></td>
</tr>
<tr>
<td>GOVT 445</td>
<td>Human Rights</td>
<td></td>
</tr>
<tr>
<td>FRLN 385</td>
<td>Multilingualism, Identity, and Power (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 361</td>
<td>Neighborhood, Community, and Identity (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 332</td>
<td>The Urban World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 394</td>
<td>Sociology of Human Rights</td>
<td></td>
</tr>
<tr>
<td>SPAN 430</td>
<td>Spanish in the United States</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Sociology, BA

Banner Code: LA-BA-SOCI

B305 Robinson Hall
Fairfax Campus

Website: soan.gmu.edu/programs/la-ba-soci

Sociology involves the systematic study of social structures, cultural patterns, and human relationships. It combines rigorous methods with theory and observation, yielding insights that challenge commonly held assumptions about the social world. Sociology also informs the practice of social and public service, aiding efforts to address important social problems. Sociology majors pursue a varied set of career paths, ranging from teaching, human service and human resource occupations, to positions in the criminal justice system, marketing, and social research. The major is excellent preparation for students considering law school or graduate training in the social and behavioral sciences.

Admissions & Policies

Policies

Students pursuing this degree must complete 34 credits of sociology courses with a minimum GPA of 2.00. No more than 6 credits of courses with unsatisfactory grades (C- or D) may be applied toward the degree.

For policies governing all undergraduate degrees, see AP 5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 507) tab.

Core Courses in the Major

The introductory course must be completed with a minimum grade of 2.00.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 101</td>
<td>Introductory Sociology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Additional Core Courses

Each of these courses must be completed with a minimum grade of 2.00.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 303</td>
<td>Methods and Logic of Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 311</td>
<td>Classical Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 313</td>
<td>Statistics for the Behavioral Sciences (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>SOCI 412</td>
<td>Contemporary Sociological Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 13

Capstone Experience Course

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 485</td>
<td>RS: Sociological Analysis and Practice (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 416</td>
<td>Internship in Sociology I</td>
<td></td>
</tr>
<tr>
<td>SOCI 481</td>
<td>RS: Honors Seminar in Sociology II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3
## Electives in the Major

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 15 credits in SOCI at the 100 to 400 level (p. 2167)</td>
<td>15</td>
</tr>
<tr>
<td>SOCI 120</td>
<td>Globalization and Society (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 208</td>
<td>Introduction to Race and Ethnicity</td>
<td></td>
</tr>
<tr>
<td>SOCI 215</td>
<td>Gender and Society</td>
<td></td>
</tr>
<tr>
<td>Any sociology (SOCI) course at the 300 - 400 level. (p. 2167)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 15

---

1. SOCI 101 Introductory Sociology (Mason Core) (p. 142) does not count toward this requirement. A maximum of 6 credits of SOCI 120 Globalization and Society (Mason Core) (p. 142), SOCI 208 Introduction to Race and Ethnicity, and SOCI 215 Gender and Society can be counted toward the major.

Students are strongly encouraged to focus four of their elective courses (12 credits) in one of the concentrations which follow, chosen to suit their interests and career objectives. Students who choose a concentration will complete one remaining elective.

### Optional Concentrations in the Major

Students can focus 12 of their 15 elective credits to complete one of the following 12-credit concentrations.

- **Concentration in Childhood and Youth (CYC)** (p. 508)
- **Concentration in Deviance, Crime, and Social Control (DCSC)** (p. 508)
- **Concentration in Global Sociology (GSOC)** (p. 508)
- **Concentration in Inequality and Social Change (INSC)** (p. 509)

Students who graduate with honors in sociology may apply 3 credits of honors coursework to their selected concentration where appropriate and with prior written approval of the undergraduate director.

### Concentration in Childhood and Youth (CYC)

This concentration focuses on the changing social realities, experiences, and identities of children and youth as they are formed in different social and historical contexts. It emphasizes children in peer groups, youth subcultural activities, youth and children and the media, schools, families, social movements, social policy, and the welfare state. This concentration is appropriate for students interested in working directly with children and youth or in organizations serving them in a broad range of fields, such as educational counseling, teaching, policy, advocacy or clinical work, family and community services, social work, early child development, and juvenile justice.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 360</td>
<td>Youth Culture and Society</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select three from the following:</td>
<td>9</td>
</tr>
<tr>
<td>SOCI 302</td>
<td>Sociology of Delinquency</td>
<td></td>
</tr>
<tr>
<td>SOCI 307</td>
<td>Social Movements and Delinquency</td>
<td></td>
</tr>
<tr>
<td>SOCI 309</td>
<td>Marriage, Families, and Intimate Life</td>
<td></td>
</tr>
<tr>
<td>SOCI 314</td>
<td>Sociology of Culture</td>
<td></td>
</tr>
<tr>
<td>SOCI 315</td>
<td>Contemporary Gender Relations</td>
<td></td>
</tr>
<tr>
<td>SOCI 352</td>
<td>Social Problems and Solutions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 382</td>
<td>Education in Contemporary Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 395</td>
<td>Special Topics in Sociology</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 12

---

Depending on topic.

### Concentration in Deviance, Crime, and Social Control (DCSC)

This concentration focuses on the social, legal, and political systems that underpin social control in Western societies and beyond. The emphasis is on how norms, values, and common sense regulate human action and the social forces that produce deviant behavior and societal responses to it. This concentration is appropriate for students interested in the criminal justice system and the law.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 301</td>
<td>Criminology</td>
<td></td>
</tr>
<tr>
<td>SOCI 302</td>
<td>Sociology of Delinquency</td>
<td></td>
</tr>
<tr>
<td>SOCI 307</td>
<td>Social Movements and Political Protest</td>
<td></td>
</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SOCI 310</td>
<td>Sociology of Deviance</td>
<td></td>
</tr>
<tr>
<td>SOCI 326</td>
<td>Conflict, Violence, and Peace</td>
<td></td>
</tr>
<tr>
<td>SOCI 332</td>
<td>The Urban World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 340</td>
<td>Power, Politics, and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 352</td>
<td>Social Problems and Solutions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 388</td>
<td>Violence and Religion</td>
<td></td>
</tr>
<tr>
<td>SOCI 395</td>
<td>Special Topics in Sociology</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 12

---

Depending on topic.

### Concentration in Global Sociology (GSOC)

This concentration focuses on global interconnectedness and its effect on the nature of societies around the world. It emphasizes new technologies and social processes, migration, transnational communities, global cities, and social movements working across state borders. This concentration is appropriate for students interested in pursuing internationally oriented careers in social change, political reform, and international development.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select three from the following:</td>
<td>9</td>
</tr>
<tr>
<td>SOCI 307</td>
<td>Social Movements and Political Protest</td>
<td></td>
</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SOCI 326</td>
<td>Conflict, Violence, and Peace</td>
<td></td>
</tr>
<tr>
<td>SOCI 330</td>
<td>US Immigrants and Immigration</td>
<td></td>
</tr>
<tr>
<td>SOCI 332</td>
<td>The Urban World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 340</td>
<td>Power, Politics, and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 352</td>
<td>Social Problems and Solutions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 388</td>
<td>Violence and Religion</td>
<td></td>
</tr>
<tr>
<td>SOCI 395</td>
<td>Special Topics in Sociology</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 12

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Depending on topic.
ANTH 332 Cross-Cultural Perspectives on Globalization (Mason Core)  

Total Credits 12

1 Depending on topic.

Concentration in Inequality and Social Change (INSC)
The focus is on inequalities, such as those of race, class, and sex, and on the manner in which such inequalities become structurally rooted in a society. The emphasis is on understanding the rise of the struggle for human rights, democracy, and various social movements that have sought to reverse these inequalities through protests, demonstrations, counterorganizations, and the ballot. This concentration is appropriate for students who seek careers in social justice organizations, social services, or teaching, and those who wish to participate in social and political movements.

Select three from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 307</td>
<td>Social Movements and Political Protest</td>
<td></td>
</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SOCI 310</td>
<td>Sociology of Deviance</td>
<td></td>
</tr>
<tr>
<td>SOCI 315</td>
<td>Contemporary Gender Relations</td>
<td></td>
</tr>
<tr>
<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>SOCI 330</td>
<td>US Immigrants and Immigration</td>
<td></td>
</tr>
<tr>
<td>SOCI 332</td>
<td>The Urban World (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>SOCI 340</td>
<td>Power, Politics, and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 352</td>
<td>Social Problems and Solutions (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>SOCI 360</td>
<td>Youth Culture and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 382</td>
<td>Education in Contemporary Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 390</td>
<td>Sociology of Health, Illness, and Disability</td>
<td></td>
</tr>
<tr>
<td>SOCI 395</td>
<td>Special Topics in Sociology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

1 Depending on topic.

Writing-Intensive Requirement
The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in sociology may fulfill this requirement by successfully completing SOCI 412 Contemporary Sociological Theory.

Upper Level Requirement
Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives
Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree
In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL (p. 2044)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RELI (p. 2144)</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

1 Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH (p. 1212)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRIM (p. 1514)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON (p. 1564)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVT (p. 1774)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST (p. 1818)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>LING (p. 1896)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC (p. 2074)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCI (p. 2167)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
</tbody>
</table>
The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

Foreign Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Intermediate-level proficiency in one foreign language, fulfilled by:
| Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424) | 3 |
| Or achieving a satisfactory score on an approved proficiency test | 3 |
| Or completing the following ASL three course sequence: | 3 |
| EDSE 115 American Sign Language (ASL) I | 3 |
| EDSE 116 American Sign Language (ASL) II | 3 |
| EDSE 219 American Sign Language (ASL) III | 3 |

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 3 credits (additional to Mason Core Global Understanding requirement)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 326</td>
<td>Stalinism</td>
<td>3</td>
</tr>
<tr>
<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
<td>3</td>
</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
</tr>
<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>3</td>
</tr>
<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td>3</td>
</tr>
<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
</tr>
<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
</tr>
<tr>
<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
<td>3</td>
</tr>
<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 375</td>
<td>Qur’an and Hadith</td>
<td>3</td>
</tr>
<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
<td>3</td>
</tr>
<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
</tr>
</tbody>
</table>

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

### Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
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<tr>
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<td>Religions of Asia (Mason Core) (p. 142)</td>
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<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
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<tr>
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</tr>
<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.
Honors in the Major

Highly qualified students majoring in sociology may apply to graduate with honors in the major. To be eligible, students must have completed at least 75 credits, taken ENGH 302 Advanced Composition (Mason Core) (p. 142) for the social sciences, completed 21 credits of sociology, and have a minimum cumulative GPA of 3.30 and a minimum grade of B+ in sociology courses. Applicants must have completed SOCI 303 Methods and Logic of Inquiry and SOCI 311 Classical Sociological Theory with a minimum grade of B in each.

If accepted, to graduate with honors in sociology, students must complete SOCI 480 Honors Seminar in Sociology I and SOCI 481 RS: Honors Seminar in Sociology II with a minimum grade of B+ in each of these courses and have an overall GPA of 3.50 in sociology courses presented for graduation. SOCI 481 RS: Honors Seminar in Sociology II includes completion of an honors thesis, which will be presented at a sociology colloquium.

Accelerated Master's

The accelerated master's programs in the list below specify the BA in sociology as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)

Overview

Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Selected Majors

- Art history (p. 394)
- Philosophy (p. 442)
- Conflict analysis and resolution (p. 936)
- Global affairs (p. 523)
- History (p. 402)
- Religious studies (p. 491)
- Russian and Eurasian studies (p. 568)
- Sociology (p. 507)
- Anthropology (p. 497)

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious studie (p. 496).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements

While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master's pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td>6</td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td>6</td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td>6</td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td>6</td>
</tr>
</tbody>
</table>

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
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<td>Interreligious Dialogue</td>
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<td>6</td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6
The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)**

**Overview**

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master’s in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Selected Majors**

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total Credits**

6

**Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)**

**Overview**

Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Selected Majors**

Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master’s Transition Form and are admitted to graduate status.
As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

### Sociology Minor

**Banner Code:** SOCI

**Academic Advising**

B305 Robinson Hall
Fairfax Campus

Website: soan.gmu.edu/programs/la-minor-soan-soci

A minor in sociology is an excellent complement for students intending careers in health-related fields, the non-profit sector, government, higher education, human resource management, city and regional planning, or public policy.

#### Admissions & Policies

**Policies**

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 514) tab.
Core Courses

Students must complete each of these courses with a minimum grade of 2.00.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 101</td>
<td>Introductory Sociology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 311</td>
<td>Classical Sociological Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four electives</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits: 12

1 Students may focus the coursework for their minor by choosing electives from one of the four concentrations offered as part of the BA in sociology (p. 507).

Sociology, MA

Banner Code: LA-MA-SOCI

Academic Advising

B305 Robinson Hall
Fairfax Campus

Website: soan.gmu.edu/programs/la-ma-soci

Students pursing an master of arts in sociology may choose a specialization in either institutions and inequalities, or the sociology of globalization. Under the larger framework of these specializations, students may pursue studies in a wide range of areas of sociological inquiry. Faculty in the program specialize in culture (including music, art, new media, and consumption); family, youth and aging; gender; globalization; immigration and migration; political economy, development and economic sociology; political sociology and social movements; race/ethnicity; religion; sociological theory; and urban sociology. The program is strongly connected to nonprofit and community groups, providing ample opportunity for research, internships, and employment.

Admissions & Policies

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the MA in sociology, see Application Requirements and Deadlines (http://soan.gmu.edu/programs/la-ma-soci/application).

Policies

For policies governing all graduate degrees, see AP6 Graduate Policies.

Requirements

Degree Requirements

Total credits: 33

For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Core Courses

Social Theory

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 711</td>
<td>Classical Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 712</td>
<td>Contemporary Sociological Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

Research Methods

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 620</td>
<td>Methods and Logic of Social Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 631</td>
<td>Survey Research</td>
<td></td>
</tr>
<tr>
<td>SOCI 632</td>
<td>Evaluation Research for Social Programs</td>
<td></td>
</tr>
<tr>
<td>SOCI 633</td>
<td>Special Topics in Sociology</td>
<td></td>
</tr>
<tr>
<td>SOCI 634</td>
<td>Qualitative Research Methods</td>
<td></td>
</tr>
<tr>
<td>SOCI 636</td>
<td>Statistical Reasoning</td>
<td></td>
</tr>
<tr>
<td>SOCI 655</td>
<td>Ethnography</td>
<td></td>
</tr>
<tr>
<td>SOCI 660/860</td>
<td>Historical and Comparative Sociology</td>
<td></td>
</tr>
<tr>
<td>SOCI 730</td>
<td>Analytic Techniques of Social Research</td>
<td></td>
</tr>
<tr>
<td>ANTH 650</td>
<td>Methods in Anthropology</td>
<td></td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 611</td>
<td>Feminist Research Practice</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

Public Sociology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 601</td>
<td>Proseminar in Public and Applied Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

Elective Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three to four electives from the full range of offerings in sociology (any SOCI course) or focus their elective credits in one of two specializations:</td>
<td>9-12</td>
</tr>
</tbody>
</table>

Institutions and Inequalities Specialization:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 605</td>
<td>Gender and Social Structure</td>
<td></td>
</tr>
<tr>
<td>SOCI 608</td>
<td>Juvenile Delinquency</td>
<td></td>
</tr>
<tr>
<td>SOCI 614</td>
<td>Sociology of Culture</td>
<td></td>
</tr>
<tr>
<td>SOCI 623</td>
<td>Racial and Ethnic Relations: American and Selected Global Perspectives</td>
<td></td>
</tr>
<tr>
<td>SOCI 624</td>
<td>International Migration in the Age of Globalization</td>
<td></td>
</tr>
<tr>
<td>SOCI 635</td>
<td>Environment and Society</td>
<td></td>
</tr>
</tbody>
</table>
### Sociological Specializations

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 641</td>
<td>Micro Sociology: Inequality and Everyday Life</td>
<td></td>
</tr>
<tr>
<td>SOCI 670</td>
<td>Social Networks, New Media, and Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 840</td>
<td>Work Organizations and Social Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 844</td>
<td>Youth, Schooling, and Popular Culture</td>
<td></td>
</tr>
<tr>
<td>SOCI 845</td>
<td>Society and Education</td>
<td></td>
</tr>
<tr>
<td>SOCI 853</td>
<td>Cities in a Global Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 857</td>
<td>Sociology of Human Rights</td>
<td></td>
</tr>
<tr>
<td>SOCI 633</td>
<td>Special Topics in Sociology</td>
<td>1</td>
</tr>
<tr>
<td>SOCI 833</td>
<td>Special Topics in Sociology</td>
<td>1</td>
</tr>
</tbody>
</table>

### Sociology of Globalization Specialization:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 614</td>
<td>Sociology of Culture</td>
<td></td>
</tr>
<tr>
<td>SOCI 623</td>
<td>Racial and Ethnic Relations: American and Selected Global Perspectives</td>
<td></td>
</tr>
<tr>
<td>SOCI 624</td>
<td>International Migration in the Age of Globalization</td>
<td></td>
</tr>
<tr>
<td>SOCI 635</td>
<td>Environment and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 670</td>
<td>Social Networks, New Media, and Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 850</td>
<td>Sociology of Development</td>
<td></td>
</tr>
<tr>
<td>SOCI 851</td>
<td>Globalization and Social Movements</td>
<td></td>
</tr>
<tr>
<td>SOCI 853</td>
<td>Cities in a Global Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 857</td>
<td>Sociology of Human Rights</td>
<td></td>
</tr>
<tr>
<td>ANTH 631</td>
<td>Refugees in the Contemporary World</td>
<td></td>
</tr>
<tr>
<td>ANTH 632</td>
<td>International Migration in Comparative Perspective</td>
<td></td>
</tr>
<tr>
<td>ANTH 655</td>
<td>Nationalism, Transnationalism, and States: Local and Global Perspectives</td>
<td></td>
</tr>
<tr>
<td>SOCI 633</td>
<td>Special Topics in Sociology</td>
<td>1</td>
</tr>
<tr>
<td>SOCI 833</td>
<td>Special Topics in Sociology</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 9-12

1 Only with prior written approval of director.

### Thesis or MA Capstone Paper

**Thesis**

A master’s thesis demonstrates the student’s capacity to carry out independent research. The thesis consists of a substantial sociological research or theoretical project that will contribute to the advancement of knowledge in sociology.

Students must follow the thesis enrollment policy of the university and once enrolled in SOCI 799 Thesis, maintain continuous enrollment as specified in AP.6.9.3 Master’s Thesis (p. 95).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three or six credits of</td>
<td>Thesis</td>
<td>3-6</td>
</tr>
</tbody>
</table>

- **Total Credits**: 3-6

### Accelerated Master’s

#### Sociology, BA/Sociology, Accelerated MA

Overview

Highly-qualified Mason sociology majors may apply to the accelerated master’s degree program. If accepted, students will be able to earn both a BA and an MA in sociology following satisfactory completion of 147 credits, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in sociology, see Application Requirements and Deadlines (http://soan.gmu.edu/programs/LA-MA-ACEL-SOCI/application).

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate SOCI courses at the 500 and 600 level (chosen in consultation with the graduate program director and indicated on their Accelerated Master’s Program Application) with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits of SOCI (p. 2167) courses as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).
Sociology, PhD
Banner Code: LA-PHD-SOCI

Academic Advising
B305 Robinson Hall
Fairfax Campus
Website: soan.gmu.edu/programs/la-phd-soci

The sociology doctoral degree provides rigorous training in public and applied social research, including skills in research design, data analysis, and substantive areas that are pertinent to various sectors in the Washington, D.C. area. Graduates have the theoretical, analytical, and professional skills that prepare them for academic positions in teaching or research. They are also well-qualified for nonacademic positions in the many settings that rely on the expertise of sociologists including human service agencies, marketing research firms, educational systems, nonprofit foundations, and law enforcement agencies.

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information, see Application Requirements and Deadlines (http://soan.gmu.edu/programs/application/LA-PHD-SOCI) on the departmental web site.

Policies
Reduction of Credit
Students who enter the program with a master's degree may be allowed a reduction of credit up to 30 credits subject to the approval of the graduate director and the dean.

Requirements

Degree Requirements
Total credits: 72

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 517) tab.

Following completion of all required course work and passing a candidacy exam, students are advanced to candidacy by the dean and complete a dissertation, an original and independent research project.

Foundation Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 601</td>
<td>Proseminar in Public and Applied Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 711</td>
<td>Classical Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 712</td>
<td>Contemporary Sociological Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Required Courses of Methodology and Analysis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 620</td>
<td>Methods and Logic of Social Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 636</td>
<td>Statistical Reasoning</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective Courses of Methodology and Analysis

Select three from the following: 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 631</td>
<td>Survey Research</td>
<td></td>
</tr>
<tr>
<td>SOCI 632</td>
<td>Evaluation Research for Social Programs</td>
<td></td>
</tr>
<tr>
<td>SOCI 633</td>
<td>Special Topics in Sociology (when topic is Critical Theory or Feminist Theory, may substitute for this requirement or for one course under the statistics/methods requirement.)</td>
<td></td>
</tr>
<tr>
<td>SOCI 634</td>
<td>Qualitative Research Methods</td>
<td></td>
</tr>
<tr>
<td>SOCI 655</td>
<td>Ethnography</td>
<td></td>
</tr>
<tr>
<td>SOCI 660</td>
<td>Historical and Comparative Sociology</td>
<td></td>
</tr>
<tr>
<td>or SOCI 860</td>
<td>Historical and Comparative Sociology</td>
<td></td>
</tr>
<tr>
<td>SOCI 730</td>
<td>Analytic Techniques of Social Research</td>
<td></td>
</tr>
<tr>
<td>ANTH 650</td>
<td>Methods in Anthropology</td>
<td></td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
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</tr>
<tr>
<td>WMST 611</td>
<td>Feminist Research Practice</td>
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</table>

Total Credits 24

Two Proseminars

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SOCI 803</td>
<td>Institutions and Inequality</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 804</td>
<td>Sociology of Globalization</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Three Courses in a Specialization

Students specialize in either institutions and inequalities or sociology of globalization. Depending on the topic, special topics courses SOCI 633 Special Topics in Sociology and SOCI 833 Special Topics in Sociology (or others) may be applied to the specialization with prior written approval of the director. Up to two courses may be from outside sociology, chosen in consultation with (and with approval of) the student’s advisor or the graduate director.

Institutions and Inequalities Specialization

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 3 courses toward the degree from the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>SOCI 605</td>
<td>Gender and Social Structure</td>
<td></td>
</tr>
<tr>
<td>SOCI 608</td>
<td>Juvenile Delinquency</td>
<td></td>
</tr>
<tr>
<td>SOCI 614</td>
<td>Sociology of Culture</td>
<td></td>
</tr>
<tr>
<td>SOCI 623</td>
<td>Racial and Ethnic Relations: American and Selected Global Perspectives</td>
<td></td>
</tr>
<tr>
<td>SOCI 624</td>
<td>International Migration in the Age of Globalization</td>
<td></td>
</tr>
<tr>
<td>SOCI 635</td>
<td>Environment and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 641</td>
<td>Micro Sociology: Inequality and Everyday Life</td>
<td></td>
</tr>
<tr>
<td>SOCI 670</td>
<td>Social Networks, New Media, and Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 840</td>
<td>Work Organizations and Social Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 844</td>
<td>Youth, Schooling, and Popular Culture</td>
<td></td>
</tr>
<tr>
<td>SOCI 845</td>
<td>Society and Education</td>
<td></td>
</tr>
</tbody>
</table>
African and African American Studies Program

SOCI 853 Cities in a Global Society
SOCI 857 Sociology of Human Rights
SOCI 633 Special Topics in Sociology (with prior written approval of director)
SOCI 833 Special Topics in Sociology (with prior written approval of director)

Total Credits 9

Sociology of Globalization Specialization

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 614</td>
<td>Sociology of Culture</td>
<td>9</td>
</tr>
<tr>
<td>SOCI 623</td>
<td>Racial and Ethnic Relations: American and Selected Global Perspectives</td>
<td>9</td>
</tr>
<tr>
<td>SOCI 624</td>
<td>International Migration in the Age of Globalization</td>
<td></td>
</tr>
<tr>
<td>SOCI 635</td>
<td>Environment and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 670</td>
<td>Social Networks, New Media, and Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 850</td>
<td>Sociology of Development</td>
<td></td>
</tr>
<tr>
<td>SOCI 851</td>
<td>Globalization and Social Movements</td>
<td></td>
</tr>
<tr>
<td>SOCI 853</td>
<td>Cities in a Global Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 857</td>
<td>Sociology of Human Rights</td>
<td></td>
</tr>
<tr>
<td>ANTH 631</td>
<td>Refugees in the Contemporary World</td>
<td></td>
</tr>
<tr>
<td>ANTH 632</td>
<td>International Migration in Comparative Perspective</td>
<td></td>
</tr>
<tr>
<td>ANTH 655</td>
<td>Nationalism, Transnationalism, and States: Local and Global Perspectives</td>
<td></td>
</tr>
<tr>
<td>SOCI 633</td>
<td>Special Topics in Sociology (with prior written approval of director)</td>
<td>12</td>
</tr>
<tr>
<td>SOCI 833</td>
<td>Special Topics in Sociology (with prior written approval of director)</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits 12

Electives may include up to two courses from outside sociology, chosen in consultation with and approval of the graduate director.

Dissertation

Once enrolled in SOCI 999 Doctoral Dissertation, students must maintain continuous registration each semester (excluding summers) until the dissertation is submitted to and accepted by the University Libraries. Once enrolled in SOCI 999 Doctoral Dissertation, students must follow the university’s continuous registration policy as specified in AP6.10.6 Dissertation Research (p. 98). Students who defend in the summer must be registered for at least 1 credit of SOCI 999 Doctoral Dissertation.

Students complete a minimum of 3 credits of SOCI 998 Doctoral Dissertation Proposal and 3 credits of SOCI 999 Doctoral Dissertation. They may apply a maximum of 12 dissertation credits (SOCI 998 Doctoral Dissertation Proposal and SOCI 999 Doctoral Dissertation combined) to the degree. Because of the continuous registration policy, students may be required to register for additional credits of SOCI 999 Doctoral Dissertation. Because students cannot register for credits of SOCI 999 Doctoral Dissertation until they have advanced to PhD candidacy, they may choose (but are not required) to register for additional credits of SOCI 998 Doctoral Dissertation Proposal.

Code | Title                        | Credits |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>12</td>
</tr>
<tr>
<td>SOCI 999</td>
<td>Doctoral Dissertation</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits 12

African and African American Studies Program

Enterprise Hall 332
Fairfax Campus

Phone: 703-993-4414
Website: aaas.gmu.edu

The African and African American Studies Program offers an interdisciplinary minor open to students in all majors.

Students who pursue this minor examine the cultural, historical, economic, and political dimensions of people of African descent in America, the Caribbean, Africa, and throughout the Diaspora. Students learn theories and methodologies that are used to examine the complex dynamics of race, class, gender, and ethnicity in America. Through the coursework for this program, students develop critical and analytical approaches to societal issues because they are addressed through a variety of academic disciplines.

The African and African American Studies Program offers an interdisciplinary minor open to students in all majors.

Students who pursue this minor examine the cultural, historical, economic, and political dimensions of people of African descent in America, the Caribbean, Africa, and throughout the Diaspora. Students learn theories and methodologies that are used to examine the complex dynamics of race, class, gender, and ethnicity in America. Through the coursework for this program, students develop critical and analytical approaches to societal issues because they are addressed through a variety of academic disciplines.

Students are encouraged to do an internship as part of the minor to further enhance their education and provide them with valuable preparation for the workforce.

African American Studies Research and Resource Center

The goal of the African American Studies Research and Resource Center (Paul Robeson Room) is to facilitate new ways for George Mason University students to learn about the African Diaspora. As part of their academic and community involvements, students often need to address
issues related to African and African American Studies. The center offers them opportunities for hands-on experience with African and African American life. It has been instrumental in assisting students, faculty, staff, and the community in finding resources to accomplish this goal.

The center sponsors a lecture series and a scholar-in-residence program and offers research and resources support for the Mason community.

Faculty

Program Faculty
Carbonneau, Carton, Cherubin, Clark, Dennis, Fauntroy, Fuchs, Haley, Hopson, Johnson, Lepore, Levine, Manuel-Scott, Miller, Paden, Richards Jordan, Smith, Stewart, Travis, Weatherspoon

Programs

• African and African American Studies Minor

African and African American Studies Minor
Banner Code: AAMS

Academic Advising
332 Enterprise Hall
Fairfax Campus
Website: aaas.gmu.edu/programs/LA-MINOR-LA-AFAM/

In the minor, students will examine the cultural, historical, economic, and political dimensions and experiences of people of African descent in America, the Caribbean, Africa, and throughout the Diaspora. Students will learn theories and methodologies that are used to examine the complex dynamics of race, class, gender, and ethnicity in America. Through this minor, students are able to develop critical and analytical approaches to societal issues because such issues are addressed and delineated through a variety of academic disciplines.

Students are encouraged to do an internship as part of the minor to further enhance their education and provide them with valuable preparation for the workforce.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 519) tab.

Required Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFAM 200</td>
<td>Introduction to African American Studies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Electives

Select four courses (12 credits) from the following: ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFAM 390</td>
<td>Special Topics in African and African American Studies</td>
<td>3</td>
</tr>
<tr>
<td>AFAM 490</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>AFAM 499</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142) (May be applied to the minor when the topic is relevant to African and African American Studies)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 348</td>
<td>Beginnings of African American Literature Through 1865</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 349</td>
<td>African American Literature: Reconstruction to 1903</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 350</td>
<td>African American Literature Through 1946</td>
<td></td>
</tr>
<tr>
<td>ENGH 351</td>
<td>Contemporary African American Literature</td>
<td></td>
</tr>
<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GOVT 464</td>
<td>Issues in Public Policy and Administration</td>
<td></td>
</tr>
<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 335</td>
<td>The African American Experience in the United States: African Background to 1885</td>
<td>3</td>
</tr>
<tr>
<td>HIST 336</td>
<td>The African American Experience in the United States: Reconstruction to the Present</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SOCI 332</td>
<td>The Urban World (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

¹ Other courses, when relevant, may be able to meet this requirement with prior written approval of the director.

Cultural Studies Program

333 Enterprise Hall
Fairfax Campus
Phone: 703-993-2851
The Cultural Studies Program is distinctive in several respects. While similar programs at other universities are based in a department, the program at Mason has a truly interdisciplinary foundation, drawing on faculty members from 14 different departments across the university. The program explicitly links the social sciences and the humanities by combining their methods of interpretation to explore the production, distribution, and consumption of cultural objects in their social contexts. With particular focus on theory and method in crafting this linkage, the program addresses contemporary issues of nationality, class, race, and gender and opens the scope of scholarly inquiry to all forms of culture, past and present.

Undergraduate Programs
Cultural studies does not have an undergraduate program, but supports the interdisciplinary undergraduate program in global affairs as well as a special topics course in cultural studies. CULT 320 Globalization and Culture is a core requirement for students majoring in global affairs. CULT 390 Topics in Cultural Studies is a course whose content will change from offering to offering and may be of special interest to global affairs majors.

Graduate Programs
The doctoral program in cultural studies trains students for scholarship and teaching. The core curriculum includes an introduction to cultural studies and a methods course, as well as courses on political economy, gender and sexuality, critical race studies, science and technology, social institutions, and visual and performance culture.

All students develop field specializations in two areas of cultural studies. The particular strengths of the program are visual culture, media, and new media studies; political economy and globalization; and gender and sexuality studies.

Related Master’s Degrees
Applicants to the doctoral degree in cultural studies must already hold a master’s degree. Students interested in pursuing the PhD in cultural studies at Mason who do not meet this requirement might wish to consider one of the related master’s degrees at Mason (anthropology, English, history, foreign languages, philosophy, and sociology). The required master’s degree may be taken from any institution of the student’s choice.

Funding
The program offers teaching assistantships and fellowships, which are awarded on a competitive basis. Other sources of funding such as grants, loans, and employment on campus are also available. Students awarded assistantships must register for a minimum of six credits a semester and show satisfactory progress toward their degree.

Faculty
Program Faculty

Programs
• Cultural Studies, PhD

Cultural Studies, PhD
Banner Code: LA-PHD-CULT
Academic Advising
320 Enterprise Hall
Fairfax Campus
Email: cultural@gmu.edu
Website: culturalstudies.gmu.edu/programs/la-phd-cult

The PhD in Cultural Studies combines theory and method with practice and concrete case studies. Students’ research projects are individualized, as should be the case when research is not confined to the objects and methods of a single discipline. The program’s emphasis is in the development of intellectual mastery and professional competence, while training students for scholarship and teaching. Most graduates go on to careers as university professors. Others pursue careers in cultural advocacy, museum work, and related areas.

Admissions & Policies
Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Applicants must already have earned a master’s degree in a relevant field. For further information specific to the PhD in cultural studies, see Application Requirements and Deadlines (https://culturalstudies.gmu.edu/programs/la-phd-cult/application).

Policies
For policies governing all graduate degrees, see Graduate Policies (p. 90).

Reduction of Credit
Students must have a master’s degree before being admitted to the PhD. Most students receive a reduction of study of 30 credits based on their previous master’s degree.

Academic Performance Standards
Students are required to maintain a minimum cumulative GPA of 3.33 for all coursework, with no unsatisfactory grades. Students who fail to meet this standard at any point will be given a warning and one semester to raise their GPA to the 3.33 minimum. Students who fail to meet this minimum standard for two consecutive or non-consecutive semesters will be terminated from the program.
Requirements

Degree Requirements

Total credits: 78-81

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 520) tab.

Doctoral Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CULT 802</td>
<td>Histories of Cultural Studies</td>
<td>3</td>
</tr>
<tr>
<td>CULT 804</td>
<td>Histories of Cultural Studies II</td>
<td>3</td>
</tr>
<tr>
<td>CULT 806</td>
<td>Research Seminar in Cultural Studies</td>
<td>3</td>
</tr>
<tr>
<td>CULT 808</td>
<td>Student/Faculty Colloquium in Cultural Studies</td>
<td>1</td>
</tr>
<tr>
<td><strong>Theory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select a minimum of one course from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CULT 810</td>
<td>Culture and Political Economy</td>
<td></td>
</tr>
<tr>
<td>CULT 814</td>
<td>Gender and Sexuality</td>
<td></td>
</tr>
<tr>
<td>CULT 820</td>
<td>After Colonialism</td>
<td></td>
</tr>
<tr>
<td><strong>Topic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select a minimum of one course from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CULT 812</td>
<td>Visual Culture</td>
<td></td>
</tr>
<tr>
<td>CULT 816</td>
<td>Science/Technology</td>
<td></td>
</tr>
<tr>
<td>CULT 818</td>
<td>Social Institutions</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

1 Students must take CULT 808 Student/Faculty Colloquium in Cultural Studies a minimum of 3 times

Field Requirements

Under the guidance of faculty advisory committees, students define two fields that point topically and theoretically toward teaching interests, dissertation research, and related forms of professional development. If doctoral level coursework is not available in a given area, students may take one independent study (CULT 870 Independent Study) to support the development of the field.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field One</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CULT 880</td>
<td>Field Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Two relevant courses from theory or topic courses not used to fulfill the previous requirements or from special topics courses.</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Field Two</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CULT 880</td>
<td>Field Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Two relevant courses from theory or topic courses not used to fulfill the previous requirements or from special topics courses.</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

1 Must be taught by that field’s primary advisor.

Field Statements

Students demonstrate competence in each of their two chosen fields by producing and orally defending a field statement that consists of a comprehensive, critical literature review.

The field statements and the defense constitute the candidacy exam for the PhD.

Methodology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students must take one course in a relevant methodology in which they are not already trained</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Students choose the specific course from program or departmental graduate offerings (600 level or above) under the guidance of their faculty advisory committee.

A course chosen to fulfill the credits for a field requirement, if relevant, may be used to meet the methodology requirement with permission of the faculty advisory committee. Students who do not take a relevant and approved methodology course in partial fulfillment of a field requirement need to take a methodology course (3 credits) to fulfill this requirement. They will have a degree total of 81 credits.

Proficiency in a Foreign Language

Students are required to demonstrate proficiency in at least one foreign language before being permitted to defend the doctoral dissertation proposal.

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students can complete the 78 credit requirement through credits of additional coursework chosen in consultation with an advisor</td>
<td>0-30</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>0-30</td>
<td></td>
</tr>
</tbody>
</table>

Advancement to Candidacy

To advance to candidacy, students must successfully complete all course work required on their approved program of study and demonstrate proficiency in a foreign language. Students must also successfully complete two written field statements and pass an oral comprehensive exam based on them.

Dissertation

Once enrolled in CULT 998 Doctoral Dissertation Proposal, students in this degree program must maintain continuous registration in CULT 998 Doctoral Dissertation Proposal or CULT 999 Doctoral Dissertation each semester (excluding summers) until the dissertation is submitted to and accepted by the University Libraries. Once enrolled in CULT 999 Doctoral Dissertation, students must follow the university’s continuous registration policy. Students who defend in the summer must be registered for at least 1 credit of CULT 999 Doctoral Dissertation.

Students must complete a minimum of 3 credits of CULT 999 Doctoral Dissertation. They may apply a maximum of 12 dissertation credits (CULT 998 Doctoral Dissertation Proposal and CULT 999 Doctoral Dissertation combined) to the degree.
Global Affairs Program

Lisa Breglia, Director

Phone: 703-993-9185
Website: globalaffairs.gmu.edu

Undergraduate Program
Global Affairs is an interdisciplinary major that introduces students to the processes of globalization that affect all societies. Students gain a sophisticated understanding of complex issues such as terrorism, refugee crises, global inequality, and health and environmental challenges. Core courses in the major provide a knowledge foundation of the political, economic, cultural, and environmental processes in our global and globalizing world. The choice of a thematic or regional concentration helps students tailor the degree to their particular interests and career goals. Students in this program are encouraged to participate in study abroad opportunities and internships. They can complement their major with a second major or a minor.

Global Affairs with a Second Major or Minor
Students can complement their major in global affairs with a second major. Students interested in this option are encouraged to discuss their plans with advisors in both majors. See the section AP.5.3.7 Credit for More than One Undergraduate Major in Undergraduate Policies (p. 90).

Students majoring in global affairs are encouraged to complement their major with one of the many minors offered by the college.

Minor
The undergraduate program in global affairs offers a minor in global affairs, which is available to students in any major in the university except those majoring in global affairs.

Graduate Program
The master’s degree in global affairs is an interdisciplinary program that offers students the opportunity to engage in advanced study of a broad range of international global issues.

Bachelor’s/Accelerated Master’s Program
Highly qualified undergraduates in any major are invited to apply to the accelerated master’s degree program in global affairs (p. 539). If accepted, students will be able to earn an undergraduate degree in their chosen major and a graduate degree in global affairs after satisfactory completion of 144 credits, generally within five years.

Faculty

Program Faculty
Ashley, Bockman, Boudreaux, Breglia (director), Burt, Copelman, Hultin, Ipek, Kelly, Kim, Mandaville, McGlinchey, Mitcho (assistant director), Ngalabak, Platt, Smith, Son

Programs
- Asia-Pacific and Northeast Asian Studies Minor
- Global Affairs Minor
- Global Affairs, BA
- Global Affairs, MA

Asia-Pacific and Northeast Asian Studies Minor
Banner Code: APNS
D215 Buchanan Hall
Fairfax Campus
Email: gloa@gmu.edu
Website: globalaffairs.gmu.edu/programs/la-minor-la-apns

This interdisciplinary minor is for students whose interests focus on the humanities and social sciences and Asia’s role in global systems and the cultural mosaic of human experience.

Asia is the birthplace of many great religious and cultural traditions. It is a region in rapid and profound transformation. With half of the world’s population and half of its land mass, Asia is destined to play an increasingly important role in the global economy and world politics. This minor will give students a better understanding of an important region of the world, broaden their perspective, and provide an edge in seeking jobs in various government agencies, international organizations, private businesses, law firms, and non-profit organizations that deal with Asia. It prepares students for graduate studies in the humanities or social sciences. This minor complements many majors including history, anthropology, communication, economics, and government and politics.

Faculty
Chang, Cuong, DeCaroli, Hinton, H. Nguyen, Lin, Paden, Platt, Ro, Son (director), Wan, Zhang

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and nine of the 18 credits required must be at the 300 and 400 level. Three credits of Chinese, Korean, or Japanese at the intermediate level (200-level) or above may be applied to the minor.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).
Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies tab.

It is recommended that students interested in this minor take language courses in Chinese (p. 1380), Korean (p. 1893), or Japanese (p. 1887).

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two core courses (6 credits) from the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>One course (3 credits) in a language relevant to the area such as Chinese, Korean, or Japanese at the 200-level (or higher)</td>
<td></td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td></td>
</tr>
<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select four electives (12 credits) from the following:</td>
<td></td>
</tr>
<tr>
<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 310</td>
<td>Survey of Chinese Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 311</td>
<td>Modern Chinese Literature in Translation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td></td>
</tr>
<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHIN 470</td>
<td>Special Topics in Chinese Studies</td>
<td></td>
</tr>
<tr>
<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td></td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td></td>
</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
<td></td>
</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td></td>
</tr>
<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RELI 317</td>
<td>Daoism</td>
<td></td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

Any course from the list of core course options not used to fulfill that requirement may be used as an elective course. Other electives are possible, including special topics courses when focused on this region (e.g. GOVT 490 Synthesis Seminar (Mason Core) (p. 142), HIST 387 Topics in Global History (Mason Core) (p. 142), HNRS 122 Reading the Arts (Topic Varies), HNRS 230) and approved study abroad courses or internships, when relevant, with prior written approval of the director.

Global Affairs, BA

Banner Code: LA-BA-GLOA

D215 Buchanan Hall
Fairfax Campus

Email: gloa@gmu.edu
Website: globalaffairs.gmu.edu/programs/la-ba-gloa

Global affairs is an interdisciplinary major that introduces students to the processes of globalization that affect all societies. Students gain a sophisticated understanding of complex issues such as terrorism, refugee crises, global inequality, and health and environmental challenges. Core courses in the major provide a knowledge foundation of the political, economic, cultural, and environmental processes in our global and globalizing world. The choice of a thematic or regional concentration helps students tailor the degree to their particular interests and career goals. Students in this program are encouraged to participate in study abroad opportunities and internships. They can complement their major with a second major or a minor.

This is a Green Leaf program (p. 107).

Admissions & Policies

Policies

Students pursuing this degree must complete 36-39 credits within the major, with a minimum cumulative GPA of 2.00. Students completing the Smithsonian-Mason semester program will have a total of 40-43 credits. Students must have a minimum grade of C in each of the core courses and a minimum grade of C- in each of the courses used to fulfill the concentration and the language requirement for global affairs majors. Students who major in global affairs may not also earn the minor in global systems.

Global affairs majors may fulfill the Mason Core Capstone requirement by successfully completing GLOA 400.

For policies governing all undergraduate degrees, see AP 5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

This is a Green Leaf program.
Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 523) tab.

Core Courses in the Major

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLOA 101</td>
<td>Introduction to Global Affairs (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or SOCI 120</td>
<td>Globalization and Society (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CONF 340</td>
<td>Global Conflict Analysis and Resolution (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CULT 320</td>
<td>Globalization and Culture</td>
<td>3</td>
</tr>
<tr>
<td>ECON 385</td>
<td>International Economic Policy</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 337</td>
<td>Environmental Policy Making in Developing Countries</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 322</td>
<td>International Relations Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

1 Note the prerequisite for this course: GOVT 132 Introduction to International Politics (Mason Core) (p. 142) or GOVT 133 Introduction to Comparative Politics (Mason Core) (p. 142)

Language Study Beyond Intermediate Proficiency

To fulfill this requirement, students can continue the study of one language beyond the intermediate proficiency level (required for all BA degrees in the college) or choose to study other languages. After a student has demonstrated intermediate proficiency in one language, the remainder of the requirement may be fulfilled by taking any courses taught in a foreign language, at any level. Students are required to complete:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6-9 credits of language study beyond intermediate proficiency</td>
<td>6-9</td>
<td></td>
</tr>
<tr>
<td>9 credits beyond the completion of 210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 credits beyond the completion of 202 or the receipt of proficiency waiver</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6-9

Concentrations in the Major

Students select one concentration and complete the requirements therein. Courses applied to a global affairs concentration must come from at least two different departments. Concentration courses must be unique to the concentration: they cannot be simultaneously used to fulfill any Mason Core (p. 142) or college requirement for the bachelor’s degree. They cannot be applied to any other major, minor, concentration, or certificate.

In addition to the courses listed with each concentration, other relevant courses, including special topics courses, study abroad, and internships (maximum 3 credits), may be applied to a concentration with prior written approval from the director.

Available Concentrations

- Concentration in the Environment (EVT) (p. 524)
- Concentration in Global Economy and Management (GEM) (p. 525)
- Concentration in Global Governance (GLGV) (p. 525)
- Concentration in Global Inequalities and Responses (GIR) (p. 526)
- Concentration in Human Security (HMSC) (p. 526)
- Concentration in International Development (IDEV) (p. 526)
- Concentration in Media, Communication, and Culture (MCC) (p. 527)
- Concentration in Africa (AFR) (p. 527)
- Concentration in Asia (ASA) (p. 527)
- Concentration in Europe (EU) (p. 528)
- Concentration in Latin America (LA) (p. 528)
- Concentration in Middle East and North Africa (MNA) (p. 529)
- Concentration in North America (NA) (p. 529)
- Concentration in Russia and Central Asia (RCA) (p. 530)
- Individualized Concentration (IND) (p. 530)

Concentration in the Environment (EVT)
Students may complete this concentration through 12 credits of regular coursework or through the Smithsonian-Mason Semester Program (15-16 credits).

Regular Coursework

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>ANTH 370</td>
<td>Environment and Culture</td>
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<tr>
<td>BIOL 301</td>
<td>Biology and Society (Mason Core) (p. 142)</td>
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<tr>
<td>ECON 335</td>
<td>Environmental Economics</td>
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<tr>
<td>ECON 435</td>
<td>Economics of Energy</td>
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<tr>
<td>EVPP 110</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142)</td>
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<td>EVPP 336</td>
<td>Human Dimensions of the Environment</td>
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<td>EVPP 377</td>
<td>Applied Ecology</td>
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<td>EVPP 475</td>
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<td>GEOL 309</td>
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<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
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<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
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<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
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<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
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<td>GOVT 351</td>
<td>Introduction to Environmental Policy</td>
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<td>GOVT 362</td>
<td>Intermediate Environmental Policy</td>
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<td>or EVPP 362</td>
<td>Intermediate Environmental Policy</td>
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<td>Environmental Justice (Mason Core) (p. 142)</td>
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<td>PHIL 243</td>
<td>Global Environmental Ethics (Mason Core) (p. 142)</td>
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<td>PHIL 343</td>
<td>Topics in Environmental Philosophy (Mason Core) (p. 142)</td>
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<td>TOUR 340</td>
<td>Sustainable Tourism</td>
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</table>

Total Credits 12

1 Note the prerequisites for this course: ECON 103 Contemporary Microeconomic Principles (Mason Core) (p. 142) and ECON 104 Contemporary Macroeconomic Principles (Mason Core) (p. 142)

Smithsonian-Mason Semester Program
Students complete 16 credits offered through the Mason Center for Conservation Studies in cooperation with the Smithsonian National Zoo Smithsonian Conservation Biology Institute. Students may choose to
focus their study on "Conservation, Biodiversity and Society", "Wildlife Ecology and Conservation", or "Endangered Species Conservation". Students take the courses in the selected focus area together in one semester, living on site at the institute in Front Royal, VA. Students who apply this coursework to the concentration cannot also apply it to the minor in Conservation Studies.

<table>
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<tr>
<th>Code</th>
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<th>Credits</th>
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<td><strong>Conservation, Biodiversity and Society option (16 credits):</strong></td>
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<tr>
<td>CONS 320</td>
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<td>CONS 401</td>
<td>Conservation Theory</td>
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<td>CONS 402</td>
<td>Applied Conservation</td>
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<td>CONS 410</td>
<td>Human Dimensions in Conservation (Mason Core) (p. 142)</td>
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<tr>
<td>CONS 490</td>
<td>RS: Integrated Conservation Strategies (Mason Core) (p. 142)</td>
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<tr>
<td><strong>Wildlife Ecology and Conservation option (16 credits):</strong></td>
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<tr>
<td>Offered only in Fall semesters, students complete four required courses:</td>
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<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
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<td>CONS 404</td>
<td>Biodiversity Monitoring</td>
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<td>CONS 405</td>
<td>Landscape and Macrosystems Ecology</td>
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<td>CONS 496</td>
<td>Research in Conservation (Mason Core) (p. 142)</td>
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<tr>
<td><strong>Endangered Species and Conservation option (16 credits):</strong></td>
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<tr>
<td>Offered only in Spring semesters, students complete four required courses:</td>
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<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
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<tr>
<td>CONS 406</td>
<td>Small Population Management</td>
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<td>CONS 491</td>
<td>RS: Conservation Management Planning (Mason Core) (p. 142)</td>
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<td>CONS 496</td>
<td>Research in Conservation (Mason Core) (p. 142)</td>
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Total Credits 16

Concentration in Global Economy and Management (GEM)

In this concentration, students explore marketing, managing, financing, and networking dimensions of the globalizing world economy. Students will take classes on economic policies of national governments and international organizations as well as operations of non-government market actors.

<table>
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<tr>
<th>Code</th>
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<td>ECON 310</td>
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<td>ECON 360</td>
<td>Economics of Developing Areas (Mason Core) (p. 142)</td>
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<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>Economies in Transition (Mason Core) (p. 142)</td>
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<td>International Political Economy</td>
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<td>Cross Cultural and Global Management</td>
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<td>MKTG 407</td>
<td>Global Marketing</td>
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<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
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<td>Managing Information in a Global Economy</td>
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<td>Marketing in a Global Economy</td>
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<td>Introduction to International Business (Mason Core) (p. 142)</td>
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<td>MBUS 491</td>
<td>Special Topics: Business Minor</td>
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<td>BULE 303</td>
<td>Legal Environment of Business ¹</td>
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<td>BULE 402</td>
<td>Commercial Law ¹</td>
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</table>

Total Credits 12

¹ BULE courses require the approval of the director.

Concentration in Global Governance (GLGV)

In this concentration students explore how national governments, international organizations, and non-governmental organizations interact to identify, understand, and address global issues. Coursework covers such topics as transnational challenges, theories of international relations, global institutions, international law and ethics, international security, and conflict. Students are expected to garner theoretical and practical understanding of the ways in which national and transnational actors approach global problems.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core) (p. 142)</td>
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<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
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<td>CRIM 475</td>
<td>Theory and Politics of Terrorism</td>
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<td>Diplomacy</td>
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<td>American Foreign Policy</td>
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<td>American Security Policy</td>
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<td>GOVT 347</td>
<td>International Security</td>
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<td>GOVT 412</td>
<td>Politics and the Mass Media</td>
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<td>GOVT 434</td>
<td>Democracy in Global Perspective</td>
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<td>GOVT 445</td>
<td>Human Rights</td>
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<td>GOVT 446</td>
<td>International Law and Organization</td>
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<td>GOVT 447</td>
<td>Revolution and International Politics</td>
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<td>GOVT 448</td>
<td>Ethics and International Politics</td>
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<tr>
<td>INTS 305</td>
<td>Conflict Resolution and Transformation</td>
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<tr>
<td>INTS 416</td>
<td>Refugee and Internal Displacement (Mason Core) (p. 142)</td>
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</table>
Global Affairs, BA

INTS 422  An Experiential Approach to American Foreign Policy
SOCI 340  Power, Politics, and Society
Or other course approved by the program director

Total Credits  12

Concentration in Global Inequalities and Responses (GIR)
This concentration addresses global social issues and the steps actors such as non-profits, social movements, and international organizations take to address these issues. Courses cover human rights, refugee crises, gender violence, racial discrimination, and economic inequality from both historical and contemporary perspectives and in different parts of the world. Students are expected to acquire the skills to analyze complex social problems and to be able to formulate effective strategies to address these.

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<td>ANTH 365</td>
<td>Scientific Racism and Human Variation</td>
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<tr>
<td>ANTH 488</td>
<td>Gender, Sexuality, and Culture</td>
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<td>CONF 394</td>
<td>Human Rights and Inequality</td>
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<tr>
<td>GCH 332</td>
<td>Health and Disease</td>
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<tr>
<td>GCH 450</td>
<td>Culture, Sexuality and the Global AIDS Epidemic</td>
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<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
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<td>GOVT 414</td>
<td>Politics of Race and Gender</td>
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<td>Comparative Slavery</td>
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<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142)</td>
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<td>Refugee and Internal Displacement (Mason Core) (p. 142)</td>
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<td>SOCI 307</td>
<td>Social Movements and Political Protest</td>
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<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
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<td>SOCI 315</td>
<td>Contemporary Gender Relations</td>
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<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
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<td>WMST 100</td>
<td>Global Representations of Women (Mason Core) (p. 142)</td>
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<td>WMST 200</td>
<td>Introduction to Women and Gender Studies (Mason Core) (p. 142)</td>
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</table>
Or other course approved by the program director

Total Credits  12

Concentration in Human Security (HMSC)
This concentration is designed to conceptualize security beyond the boundaries of national security and to promote a more comprehensive understanding of “human security” in its multiple facets, including: food and health (famine and infectious disease), environmental security (natural disasters and climate change), and economic security (development). Coursework addresses these and other themes and draws on government, sociology, criminology, environmental science and policy, and other fields. Students are expected to garner an understanding of the sources of insecurity in today’s world.

<table>
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<td>ECON 360</td>
<td>Economics of Developing Areas (Mason Core) (p. 142)</td>
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<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>EVPP 472</td>
<td>Tools and Techniques for International Development</td>
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<td>GCH 205</td>
<td>Global Biodiversity Governance</td>
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Total Credits  12
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<td>GCH 405</td>
<td>Global Health Interventions: History and Systems</td>
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<td>Geography of Resource Conservation (Mason Core)</td>
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<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
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<td>GOVT 434</td>
<td>Democracy in Global Perspective</td>
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<td>GOVT 445</td>
<td>Human Rights</td>
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<td>GOVT 446</td>
<td>International Law and Organization</td>
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<td>HEAL 350</td>
<td>Interventions for Populations and Communities at Risk</td>
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<td>TOUR 340</td>
<td>Sustainable Tourism</td>
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**Concentration in Media, Communication, and Culture (MCC)**

In this concentration, students examine historic trends and recent changes in media and communication technologies as well as their cultural contexts. Coursework includes critical analysis of media content, comparison of global media infrastructures and systems of political communication, discussion of the foundations of intercultural communication, and more. Students are expected to gain an understanding of the role of media and communication in shaping and responding to global issues of concern.

<table>
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<th>Title</th>
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<td>ANTH 332</td>
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<td>ANTH 380</td>
<td>Language and Culture</td>
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<td>ANTH 395</td>
<td>Work, Technology, and Society: An IT Perspective (Mason Core)</td>
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<td>AVT 372</td>
<td>Hip Hop Culture</td>
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<td>COMM 202</td>
<td>Media and Society</td>
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<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core)</td>
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<td>COMM 306</td>
<td>Issues in Intercultural Communication</td>
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<td>COMM 380</td>
<td>Media Criticism</td>
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<td>COMM 412</td>
<td>Politics and the Mass Media</td>
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<td>COMM 456</td>
<td>Comparative Mass Media (Mason Core)</td>
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<td>Global Perspectives: World Dance Forms (Mason Core)</td>
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<td>Folklore and Folklife</td>
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<td>Global Voices (Mason Core)</td>
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<td>ENGH 366</td>
<td>The Idea of a World Literature (Mason Core)</td>
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<td>World Literatures in English</td>
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<td>Digital Futures</td>
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<td>Applied Cross-Cultural Psychology (Mason Core)</td>
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<td>SOCI 314</td>
<td>Sociology of Culture</td>
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<td>THR 359</td>
<td>World Stages (Mason Core)</td>
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<td>Total Credits</td>
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</table>

**Concentration in Africa (AFR)**

This concentration focuses on the societies of Africa, their history, culture, economics, and politics, including the pre-colonial, colonial, and post-colonial experiences. Course options include African diaspora experiences. Upon completion of this concentration, students will have an in-depth understanding of Africa as an international actor, African contributions (past and present) to global society, the political and economic challenges facing the continent today, and African solutions to problems such as civil wars and inequality.

<table>
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<th>Title</th>
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<td>Survey of African Art (Mason Core)</td>
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<td>ECON 362</td>
<td>African Economic Development (Mason Core)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>Geography of North Africa and the Middle East</td>
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<td>HIST 261</td>
<td>Survey of African History (Mason Core)</td>
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<td>HIST 262</td>
<td>Survey of African History (Mason Core)</td>
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<td>HIST 335</td>
<td>The African American Experience in the United States: African Background to 1885</td>
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<td>The African American Experience in the United States: Reconstruction to the Present</td>
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<td>History of South Africa (Mason Core)</td>
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<td>12</td>
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</tbody>
</table>

**Concentration in Asia (ASA)**

This concentration emphasizes Asia’s increasingly significant role in contemporary global issues as well as its historical contexts. The courses in this concentration cover the economic, social, and political issues that confront the Asia-Pacific region (that is, East and Southeast Asian countries). Students interested in anthropology, history, art history, government, and religious studies should consider this concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 324</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core)</td>
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<td>ANTH 380</td>
<td>Language and Culture</td>
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<td>ANTH 395</td>
<td>Work, Technology, and Society: An IT Perspective (Mason Core)</td>
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<td>Issues in Intercultural Communication</td>
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<td>COMM 456</td>
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<td>Global Perspectives: World Dance Forms (Mason Core)</td>
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<td>Folklore and Folklife</td>
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<td>ENGH 362</td>
<td>Global Voices (Mason Core)</td>
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<td>ENGH 366</td>
<td>The Idea of a World Literature (Mason Core)</td>
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<td>World Literatures in English</td>
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<td>FRLN 330</td>
<td>Topics in World Literature (Mason Core)</td>
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### Global Affairs, BA

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<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<tr>
<td>CHIN 310</td>
<td>Survey of Chinese Literature (Mason Core) (p. 142)</td>
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<td>CHIN 311</td>
<td>Modern Chinese Literature in Translation (Mason Core)</td>
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<td>CHIN 328</td>
<td>Asian American Women Writers (Mason Core) (p. 142)</td>
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<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
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<td>GOVT 433</td>
<td>Chinese Foreign Policy</td>
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<td>GOVT 451</td>
<td>Politics of Europe</td>
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<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>HIST 353</td>
<td>History of Traditional China</td>
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<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
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<td>JAPA 320</td>
<td>Japanese Cinema</td>
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<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
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<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
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<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
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<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
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<td>RELI 317</td>
<td>Daoism</td>
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<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Or other course approved by the program director

**Total Credits:** 12

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### Concentration in Europe (EU)

This concentration is designed to equip students with a deep and broad understanding of politics, history, culture, religion, and the arts in Europe as well as Europe’s lasting legacies across the globe. Coursework includes broad surveys on government, geography, literature, and economics as well as special topics courses on the Renaissance, World Wars I and II, and nationalism in Eastern Europe. Upon completion of this concentration, students will have the ability to think critically about how historical processes and current events in Europe not only impact Europeans, but also the global community at large.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>ARTH 340</td>
<td>Early Renaissance Art in Italy, 1300-1500 (Mason Core) (p. 142)</td>
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<td>ARTH 360</td>
<td>Nineteenth-Century European Art (Mason Core) (p. 142)</td>
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<td>ARTH 362</td>
<td>Twentieth-Century European Art (Mason Core) (p. 142)</td>
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<td>ENGH 339</td>
<td>British and Irish Drama after 1900</td>
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<tr>
<td>ENGH 361</td>
<td>Continental Fiction, 1880-1950</td>
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<td>FREN 325</td>
<td>Major French Writers (Topic Varies) (Mason Core) (p. 142)</td>
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<td>FREN 470</td>
<td>French and Francophone Cinema</td>
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<td>GERM 325</td>
<td>Major Writers (Mason Core) (p. 142)</td>
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<td>GERM 340</td>
<td>Topics in German Literature and Film</td>
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<td>GERM 451</td>
<td>Modern Literature: 1925 to the Present</td>
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<td>GGS 320</td>
<td>Geography of Europe</td>
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<td>GOVT 334</td>
<td>Government and Politics of Europe</td>
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<td>GOVT 337</td>
<td>Ethnic Politics in Western Europe and North America</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
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<td>HIST 304</td>
<td>Western Europe in the Middle Ages</td>
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<td>HIST 305</td>
<td>The Renaissance</td>
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<td>HIST 306</td>
<td>The Reformation</td>
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<td>HIST 307</td>
<td>Old Regime and Revolutionary Europe</td>
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<td>HIST 308</td>
<td>Nineteenth-Century Europe</td>
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<td>HIST 309</td>
<td>Europe in Crisis: 1914-1948</td>
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<td>HIST 312</td>
<td>Nationalism in Eastern Europe</td>
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<td>History of Germany</td>
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<td>HIST 322</td>
<td>Modern Britain</td>
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<td>HIST 436</td>
<td>European Society and Culture: 19th and 20th Centuries</td>
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<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
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<td>SPAN 321</td>
<td>Introduction to Spanish Culture</td>
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<td>SPAN 325</td>
<td>Major Hispanic Writers</td>
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<td>SPAN 461</td>
<td>Spanish Civilization and Culture</td>
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<td>SPAN 483</td>
<td>Medieval and Early Modern Literature of Spain</td>
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<td>SPAN 484</td>
<td>Modern and Contemporary Literature of Spain</td>
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</tbody>
</table>

Or other course approved by the program director

**Total Credits:** 12

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### Concentration in Latin America (LA)

This concentration is designed to provide students with an overview of Latin America and its diaspora. Course options include broad surveys of Latin American history, art, literature, music, culture, and politics, as well as courses that provide in-depth exploration of topics such as colonialism, economic development, political movements, race and ethnicity, migration, and aesthetic trends. Upon completion of this concentration, students will have an in-depth understanding of Latin America as an international actor, Latin American contributions (past and present) to global society, and the political and economic challenges faced by the region.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
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<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
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<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
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<tr>
<td>RELI 317</td>
<td>Daoism</td>
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<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
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Or other course approved by the program director

**Total Credits:** 12
Select 12 credits from the following:

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<th>Credits</th>
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<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
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<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
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<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<td>ARTH 376</td>
<td>Twentieth-Century Latin American Art (Mason Core) (p. 142)</td>
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<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>GOVT 331</td>
<td>Government and Politics of Latin America</td>
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<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
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<td>SPAN 322</td>
<td>Introduction to Latin American Culture (Mason Core) (p. 142)</td>
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<td>SPAN 325</td>
<td>Major Hispanic Writers (Mason Core) (p. 142)</td>
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<td>SPAN 388</td>
<td>Introduction to Latina/o Studies (Mason Core) (p. 142)</td>
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<td>SPAN 466</td>
<td>Latin American Civilization and Culture (Mason Core) (p. 142)</td>
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<td>SPAN 488</td>
<td>The Literature of Spanish America</td>
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Total Credits 12

Concentration in Middle East and North Africa (MNA)
This concentration provides students with a contemporary and historical perspective on the politics, economics, and religious diversity of the Middle East and North Africa. Coursework includes broad surveys as well as courses on specific topics such as the Arab-Israeli conflict, francophone literature from North Africa, politics and Islam, and art and archeology of the ancient Near East. Upon completion of this concentration, students are expected to have an in-depth understanding of the current state of the Middle East and North Africa and how this state has developed historically.

Select 12 credits from the following:

<table>
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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
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<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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</tbody>
</table>

Concentration in North America (NA)
In this concentration, students explore the multifaceted development of the United States and its relationship with its North American neighbors. Coursework includes historical examinations of pre-American culture, as well as in-depth surveys of political, economic, cultural, and artistic developments in United States. Upon completion of this concentration, students will have the ability to critically assess how the US has influenced and been influenced by European and non-European societies and traditions, knowledge of the development of American government and its consequences within and beyond North America, and an appreciation of the role of arts and literature in American culture.

Select 12 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>ARTH 371</td>
<td>American Architecture and Material Culture (Mason Core) (p. 142)</td>
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<td>ARTH 372</td>
<td>Studies in 18th- and 19th-Century Art of the United States (Mason Core) (p. 142)</td>
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<td>ARTH 373</td>
<td>Studies in 20th-Century Art of the United States (Mason Core) (p. 142)</td>
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<td>ENGH 355</td>
<td>Recent American Fiction</td>
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<td>ENGH 356</td>
<td>Recent American Poetry</td>
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<td>GGS 315</td>
<td>Geography of the United States</td>
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<td>GOVT 301</td>
<td>Public Law and the Judicial Process</td>
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<td>Legislative Behavior</td>
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<td>GOVT 308</td>
<td>The American Presidency</td>
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<td>GOVT 337</td>
<td>Ethnic Politics in Western Europe and North America</td>
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<tr>
<td>GOVT 420</td>
<td>American Political Thought</td>
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</table>
HIST 336  The African American Experience in the United States: Reconstruction to the Present
HIST 350  U.S. Women's History
HIST 351  History of the Old South
HIST 352  The South since 1865
HIST 370  War and American Society
USST 401  Seminar: The Future of Metropolitan America
Or other course approved by the program director

Total Credits  12

Concentration in Russia and Central Asia (RCA)
This concentration provides students contemporary and historical perspectives on the political, economic, and cultural climates and trends in Russia and Central Asia. Upon completion of this concentration, students will not only have the skills to critically assess the impacts of Soviet-era legacies on newly independent political systems, economies in transition, and re-emerging cultural traditions, but also knowledge of pre-Soviet sociocultural and political environments in Russia and Central Asia.

Code Title Credits
Select 12 credits from the following:

<table>
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<tr>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ECON 380</td>
<td>Economies in Transition (Mason Core) (p. 142)</td>
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<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
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<td>Central Asian Politics</td>
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<td>GOVT 447</td>
<td>Revolution and International Politics</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
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<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
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<td>HIST 426</td>
<td>The Russian Revolution</td>
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<td>RUSS 325</td>
<td>Major Russian Writers (Mason Core) (p. 142)</td>
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<tr>
<td>RUSS 326</td>
<td>A Survey of Russian Literature (Mason Core)    (p. 142)</td>
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<td>RUSS 327</td>
<td>A Survey of Russian Literature (Mason Core)    (p. 142)</td>
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<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
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<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core)    (p. 142)</td>
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<td>RUSS 407</td>
<td>Russian Drama and Theater</td>
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<td>RUSS 410</td>
<td>Russian Poetry</td>
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<td>RUSS 470</td>
<td>Topics in (Post) Soviet Film</td>
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<tr>
<td>Or other course approved by the program director</td>
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</tbody>
</table>

Total Credits  12

Individualized Concentration (IND)
Students who wish to design their own concentration must submit a one-page proposal and create a curriculum plan to be approved by the director.

Writing-Intensive Requirement
The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in global affairs may fulfill this requirement by successfully completing EVPP 337 Environmental Policy Making in Developing Countries.

Upper Level Requirement
Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives
Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements in the BA Degree
In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies
Code Title Credits
Select 3 credits from the following: [3 credits]

<table>
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<th>Title</th>
<th>Credits</th>
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<td>(p. 2044)</td>
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<tr>
<td>RELI</td>
<td>(p. 2144)</td>
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</tbody>
</table>

Note that the following courses may not be used to fulfill this requirement:
- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences
Code Title Credits
Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement) [3 credits]

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td>(p. 1212)</td>
<td></td>
</tr>
<tr>
<td>CRIM</td>
<td>(p. 1514)</td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td>(p. 1774)</td>
<td></td>
</tr>
<tr>
<td>HIST</td>
<td>(p. 1818)</td>
<td>2</td>
</tr>
<tr>
<td>LING</td>
<td>(p. 1896)</td>
<td></td>
</tr>
<tr>
<td>PSYC</td>
<td>(p. 2074)</td>
<td></td>
</tr>
</tbody>
</table>
Or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>

1 The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

2 HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

Foreign Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
</tbody>
</table>

Intermediate-level proficiency in one foreign language, fulfilled by:

1. Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)
2. Or achieving a satisfactory score on an approved proficiency test
3. Or completing the following ASL three course sequence:
   - EDSE 115 American Sign Language (ASL) I
   - EDSE 116 American Sign Language (ASL) II
   - EDSE 219 American Sign Language (ASL) III

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits (additional to Mason Core Global Understanding requirement)</td>
<td></td>
</tr>
</tbody>
</table>
FREN 454  Topics in Caribbean Francophone Literature and Culture  3

GGS 101  Major World Regions (Mason Core)  3
(p. 142)

GGS 316  Geography of Latin America  3

GGS 325  Geography of North Africa and the Middle East  3

GGS 330  Geography of the Soviet Succession States  3

GGS 399  Select Topics in GGS  3

GOVT 328  Global Political Theory  3

GOVT 332  Government and Politics of the Middle East and North Africa  3

GOVT 333  Government and Politics of Asia  3

GOVT 338  Government and Politics of Russia  3

GOVT 340  Central Asian Politics  3

GOVT 341  Chinese Foreign Policy  3

GOVT 345  Islam and Politics  3

HIST 251  Survey of East Asian History (Mason Core)  3
(p. 142)

HIST 252  Survey of East Asian History (Mason Core)  3
(p. 142)

HIST 261  Survey of African History (Mason Core)  3
(p. 142)

HIST 262  Survey of African History (Mason Core)  3
(p. 142)

HIST 271  Survey of Latin American History (Mason Core)  3
(p. 142)

HIST 272  Survey of Latin American History (Mason Core)  3
(p. 142)

HIST 281  Survey of Middle Eastern Civilization (Mason Core)  3
(p. 142)

HIST 282  Survey of Middle Eastern Civilization (Mason Core)  3
(p. 142)

HIST 326  Stalinism  3

HIST 327  The Soviet Union and Russia Since World War II  3

HIST 328  Rise of Russia (Mason Core)  3
(p. 142)

HIST 329  Modern Russia and the Soviet Union (Mason Core)  3
(p. 142)

HIST 353  History of Traditional China  3

HIST 354  Modern China (Mason Core)  3
(p. 142)

HIST 356  Modern Japan (Mason Core)  3
(p. 142)

HIST 357  Postwar Japan (Mason Core)  3
(p. 142)

HIST 358  Post-1949 China (Mason Core)  3
(p. 142)

HIST 360  History of South Africa (Mason Core)  3
(p. 142)

HIST 364  Revolution and Radical Politics in Latin America (Mason Core)  3
(p. 142)

HIST 365  Conquest and Colonization in Latin America (Mason Core)  3
(p. 142)

HIST 366  Comparative Slavery  3

HIST 367  History, Fiction, and Film in Latin America  3

HIST 387  Topics in Global History (Mason Core)  3-6
(p. 142)

HIST 397  The Russian Revolution  3

HIST 426  Modern Iran (Mason Core)  3
(p. 142)

HIST 461  Arab-Israeli Conflict  3

HIST 462  Women in Islamic Society (Mason Core)  3
(p. 142)

HIST 465  The Middle East in the 20th Century  3

JAPA 310  Japanese Culture in a Global World (Mason Core)  3
(p. 142)

JAPA 340  Topics in Japanese Literature (Mason Core)  3
(p. 142)

KORE 320  Korean Popular Culture in a Global World  3

MUSI 103  Musics of the World (Mason Core)  3
(p. 142)

RELI 211  Religions of the West (Mason Core)  3
(p. 142)

RELI 212  Religions of Asia (Mason Core)  3
(p. 142)

RELI 240  Death and the Afterlife in World Religions  3

RELI 272  Islam  3

RELI 313  Hinduism (Mason Core)  3
(p. 142)

RELI 314  Chinese Philosophies and Religious Traditions  3

RELI 315  Buddhism (Mason Core)  3
(p. 142)

RELI 337  Mysticism: East and West  3

RELI 365  Muhammad: Life and Legacy  3

RELI 374  Islamic Thought (Mason Core)  3
(p. 142)

RELI 375  Qur’an and Hadith  3

RELI 379  Islamic Law, Society, and Ethics  3

RELI 387  Islam, Democracy, and Human Rights  3

RELI 490  Comparative Study of Religions (Mason Core)  3
(p. 142)

RUSS 353  Russian Civilization (Mason Core)  3
(p. 142)

RUSS 354  Contemporary Post-Soviet Life (Mason Core)  3
(p. 142)

1  A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
</tbody>
</table>
Information Technology and Computing (p. 143) 3
Exploration Requirements
Arts (p. 144) 3
Global Understanding (p. 146) 3
Literature (p. 147) 3
Natural Science (p. 148) 7
Social and Behavioral Sciences (p. 150) 3
Western Civilization/World History (p. 151) 3
Integration Requirements
Written Communications (ENGH 302) (p. 142) 3
Writing-Intensive (p. 151) 1
Synthesis/Capstone (p. 153) 2
Total Credits 40

Honors
Honors in the Major
Highly qualified students may pursue advanced work leading to graduation with honors in the major. Global affairs majors who have completed 75 credits with an overall GPA of 3.50 and a GPA of 3.50 in courses for the major are eligible to apply to graduate with honors.

Students pursuing honors in the major must complete the two-course honors sequence, GLOA 491 Honors Seminar in Global Affairs and GLOA 492 Honors Research Project in Global Affairs, with a minimum GPA of 3.50 in the sequence. Not all applicants who meet the minimum requirements are guaranteed acceptance.

Accelerated Master's
The accelerated master’s programs listed below specify the BA in global affairs as a feeder degree for their programs. It is important to note, however, that many accelerated master’s programs are available for any bachelor’s degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason. In addition, as a student with a BA in global affairs you may be particularly interested in the accelerated (p. 539) MA in global affairs (p. 539).

Bachelor's Degree (any)/Middle East and Islamic Studies, Accelerated MA
Overview
Highly-qualified undergraduates pursuing a BA may apply to the accelerated master’s degree in Middle East and Islamic studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in Middle East and Islamic studies after satisfactory completion of 144 credits, sometimes within five years. See AP.6.7 Bachelor’s/ Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in Middle East and Islamic studies, see Application Requirements and Deadlines (http://meis.gmu.edu/programs/la-ma-acel-ma).

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEIS 500</td>
<td>Critical Issues and Debates in Middle East and Islamic Studies</td>
<td>6</td>
</tr>
<tr>
<td>HIST 575</td>
<td>Approaches to Middle East and Islamic History</td>
<td></td>
</tr>
<tr>
<td>GOVT 632</td>
<td>Politics and Societies of the Middle East</td>
<td></td>
</tr>
<tr>
<td>RELI 644</td>
<td>Islamic Texts and Contexts</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEIS 500</td>
<td>Critical Issues and Debates in Middle East and Islamic Studies</td>
<td>6</td>
</tr>
<tr>
<td>HIST 575</td>
<td>Approaches to Middle East and Islamic History</td>
<td></td>
</tr>
<tr>
<td>GOVT 731</td>
<td>Advanced Seminar in Comparative Politics (when content focus is the Middle East)</td>
<td></td>
</tr>
<tr>
<td>GOVT 733</td>
<td>Islam and Politics</td>
<td></td>
</tr>
<tr>
<td>MEIS 599</td>
<td>Issues in Middle East and Islamic Studies</td>
<td></td>
</tr>
<tr>
<td>RELI 644</td>
<td>Islamic Texts and Contexts</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6
The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Bachelor’s Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)**

**Overview**
Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Selected Majors**
- Art history (p. 394)
- Philosophy (p. 442)
- Conflict analysis and resolution (p. 936)
- Global affairs (p. 523)
- History (p. 402)
- Religious studies (p. 491)
- Russian and Eurasian studies (p. 568)
- Sociology (p. 507)
- Anthropology (p. 497)

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious studies (p. 496).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application).

**Accelerated Option Requirements**
While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Bachelor’s Degree (selected)/Environmental Science and Policy, Accelerated MS**

**Overview**
This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy, MS (p. 696) in less time than if they had first graduated with an environmentally-focused Green Leaf-designated (p. 107) BA or BS degree and then applied to the MS program sequentially.
For more detailed information, see AP6.7 Bachelor's/Accelerated Master’s Degrees (p. 93). For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

### Admission Requirements

Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated (p. 107) major or minor may apply for provisional acceptance into this accelerated master’s program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 212 General Chemistry II (Mason Core) (p. 142) and three semesters of biology, including a course in ecology, or the equivalent, for example:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td></td>
</tr>
</tbody>
</table>

**Option 2:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
<td></td>
</tr>
<tr>
<td>EVPP 301</td>
<td>Environmental Science: Biological Diversity and Ecosystems</td>
<td></td>
</tr>
<tr>
<td>EVPP 302</td>
<td>Environmental Science: Biomes and Human Dimensions</td>
<td></td>
</tr>
<tr>
<td>EVPP 305</td>
<td>Environmental Microbiology Essentials</td>
<td></td>
</tr>
<tr>
<td>EVPP 306</td>
<td>Environmental Microbiology Essentials Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

**Option 3:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td></td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td></td>
</tr>
<tr>
<td>6 credits of BIOL or CONS electives</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

By the beginning of the undergraduate's senior year, they should first submit a Graduate Application for Accelerated Master’s Program form (obtained from the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us)). Secondly, in their senior year accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application with a minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. Upon completion and conferral of the undergraduate degree in a Green Leaf-designated (p. 107) program, in the semester indicated in the application, they must additionally submit the Bachelor’s/Accelerated Master’s Transition form (found on the Office of the University Registrar website (http://registrar.gmu.edu/forms)) and will subsequently be admitted into graduate status.

By at least the beginning of their senior year, they should seek out a faculty member in the Department of Environmental Science and Policy (p. 688) who is willing to serve as their advisor. This advisor will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies. Admission into a research-oriented master’s concentration is dependent upon securing the agreement of a faculty advisor. Faculty from a variety of departments and colleges at George Mason (called “program faculty”) can serve as master’s advisors. Potential students are encouraged to speak with the

### Global Affairs Minor

**Banner Code:** GLOA

**Academic Advising**

D215 Buchanan Hall  
Fairfax Campus  

Email: gloa@gmu.edu  
Website: globalaffairs.gmu.edu/programs/la-minor-la-gloa

This minor provides students with a global perspective that can enhance many different majors. The minor is not available to students majoring in global affairs (p. 523) or minoring in global systems (p. 971).

This is a Green Leaf Program (p. 107).
Global Affairs, MA

Banner Code: LA-MA-GLOA

Academic Advising
D215 Buchanan Hall
Fairfax Campus

Email: globalma@gmu.edu
Website: globalaffairs.gmu.edu/programs/la-ma-gloa

The Global Affairs, MA is an interdisciplinary program offering students the opportunity to engage in advanced study of a broad range of global issues. Students complete a core curriculum that provides the knowledge and skills to think and act globally. Students also pursue specializations that include relevant courses from academic departments across the university. All students in the program take part in a residency abroad, typically two weeks in duration, and complete a capstone seminar. Graduates enter the workforce or move forward in their already-established international and domestic careers in the public sector, nongovernmental organizations, and business.

This is a Green Leaf program (p. 107).

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15
This is a Green Leaf program.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 536) tab.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLOA 101</td>
<td>Introduction to Global Affairs (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or SOCI 120</td>
<td>Globalization and Society (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CULT 320</td>
<td>Globalization and Culture</td>
<td>3</td>
</tr>
<tr>
<td>ECON 385</td>
<td>International Economic Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 322</td>
<td>International Relations Theory</td>
<td>3</td>
</tr>
<tr>
<td>CONF 340</td>
<td>Global Conflict Analysis and Resolution (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or EVPP 337</td>
<td>Environmental Policy Making in Developing Countries</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information, see Application Requirements and Deadlines (http://globalaffairs.gmu.edu/programs/application/LA-MA-GLOA) on the departmental website.

Policies
For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Students who wish to pursue study abroad in addition to the required core course GLOA 710 Seminar Abroad must receive prior approval and may not use more than 3 credits earned while abroad towards their specialization. Students must maintain a 3.00 cumulative grade point average with no more than two grades below B.

Requirements

Degree Requirements
Total credits: 30
This is a Green Leaf program.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 536) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>GLOA 600</td>
<td>Global Competencies</td>
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<tr>
<td>GLOA 605</td>
<td>Interdisciplinary Research Methods</td>
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</tr>
<tr>
<td>GLOA 610</td>
<td>Economic Globalization and Development</td>
<td>3</td>
</tr>
<tr>
<td>GLOA 615</td>
<td>Case Studies in Globalization</td>
<td>3</td>
</tr>
<tr>
<td>GLOA 710</td>
<td>Seminar Abroad</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Specialization

Students choose to specialize in one of eight fields by completing 12 credits in that field selected from the courses listed. The specialization is developed in consultation with an advisor. Students who wish to design their own specialization must submit a one-page proposal and receive written approval from the director. Specialization courses must come from at least two academic disciplines.

Global Conflict and Security

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 610</td>
<td>Advanced Topics in Global Health Security (minimum of 3 credits)</td>
<td>3</td>
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<tr>
<td>BIOD 621</td>
<td>Ethics and International Security</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 705</td>
<td>Intelligence: Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 706</td>
<td>Nuclear, Biological, and Chemical Weapons Policy and Security</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>BIOD 709</td>
<td>Nonproliferation and Arms Control</td>
<td></td>
</tr>
<tr>
<td>BIOD 722</td>
<td>Examining Terrorist Groups</td>
<td></td>
</tr>
<tr>
<td>BIOD 725</td>
<td>Terrorism and Weapons of Mass Destruction</td>
<td></td>
</tr>
<tr>
<td>CONF 501</td>
<td>Introduction to Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 652</td>
<td>Conflict Analysis and Resolution for Prevention, Reconstruction, and Stabilization Contexts</td>
<td></td>
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<tr>
<td>CONF 653</td>
<td>World Religions, Diplomacy, and Conflict Resolution</td>
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<tr>
<td>CONF 658</td>
<td>Diversity and Difference in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 659</td>
<td>Leadership and Difference in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 720</td>
<td>Ethnic and Cultural Factors in Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 736</td>
<td>Globalization and International Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 746</td>
<td>Peace Building</td>
<td></td>
</tr>
<tr>
<td>GOVT 541</td>
<td>Introduction to Critical Analysis and Strategic Response to Terrorism</td>
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</tr>
<tr>
<td>GOVT 640</td>
<td>Strategic Responses to Terrorism: Coordinated Decision Making</td>
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<tr>
<td>GOVT 742</td>
<td>International Negotiation</td>
<td></td>
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<tr>
<td>GOVT 745</td>
<td>International Security</td>
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<tr>
<td>PUAD 634</td>
<td>Management of International Security</td>
<td></td>
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<tr>
<td>PUBP 650</td>
<td>International Conflict and Crisis Response</td>
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<tr>
<td>PUBP 651</td>
<td>Peace and Stabilization Operations</td>
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<tr>
<td>Total Credits</td>
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**Global Culture and Society**

<table>
<thead>
<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>ANTH 580</td>
<td>Environmental Anthropology</td>
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<tr>
<td>ANTH 635</td>
<td>Regional Ethnography</td>
<td></td>
</tr>
<tr>
<td>ANTH 655</td>
<td>Nationalism, Transnationalism, and States: Local and Global Perspectives</td>
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<tr>
<td>ANTH 721</td>
<td>Culture, Power, and Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 707</td>
<td>Gender and Violence</td>
<td></td>
</tr>
<tr>
<td>CONF 720</td>
<td>Ethnic and Cultural Factors in Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 753</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGH 665</td>
<td>Seminar in Global Culture</td>
<td></td>
</tr>
<tr>
<td>GOVT 530</td>
<td>Comparative Politics</td>
<td></td>
</tr>
<tr>
<td>GOVT 641</td>
<td>Global Governance</td>
<td></td>
</tr>
<tr>
<td>GOVT 725</td>
<td>Democratic Theory</td>
<td></td>
</tr>
<tr>
<td>GOVT 739</td>
<td>Issues in Comparative and International Politics</td>
<td></td>
</tr>
<tr>
<td>HIST 510</td>
<td>Approaches to Modern World History</td>
<td></td>
</tr>
<tr>
<td>HIST 535</td>
<td>Problems in Comparative World History</td>
<td></td>
</tr>
<tr>
<td>HIST 615</td>
<td>Problems in American History</td>
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<tr>
<td>MUSI 640</td>
<td>Topics in World Musics</td>
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<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
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<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
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<tr>
<td>RELI 642</td>
<td>Sacred Language, Scripture, and Culture</td>
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<tr>
<td>SOAN 510</td>
<td>Culture and Globalization</td>
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<tr>
<td>SOCI 623</td>
<td>Racial and Ethnic Relations: American and Selected Global Perspectives</td>
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<tr>
<td>SPMT 551</td>
<td>Sport in the Global Marketplace</td>
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<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
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<tr>
<td>or other course approved by the program director</td>
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<tr>
<td>Total Credits</td>
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</tbody>
</table>

**Global Economics and Development**

This specialization is best suited for students with an academic background in economics or for students who have taken microeconomics, macroeconomics, and calculus with a minimum grade of 3.00 in all three.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CONF 732</td>
<td>Conflict in Development</td>
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</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory</td>
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<tr>
<td>ECON 612</td>
<td>Microeconomic Theory II</td>
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<td>ECON 615</td>
<td>Macroeconomic Theory</td>
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<td>ECON 676</td>
<td>Comparative Economic Systems</td>
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<tr>
<td>EVPP 642</td>
<td>Environmental Policy</td>
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<tr>
<td>GOVT 743</td>
<td>International Political Economy</td>
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<tr>
<td>ITRN 500</td>
<td>Global Political Economy</td>
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<tr>
<td>ITRN 503</td>
<td>Macroeconomic Policy in the Global Economy</td>
<td></td>
</tr>
<tr>
<td>ITRN 602</td>
<td>Global Financial Crises and Institutions</td>
<td></td>
</tr>
<tr>
<td>ITRN 603</td>
<td>Global Trade Relations</td>
<td></td>
</tr>
<tr>
<td>ITRN 701</td>
<td>Special Topics in International Commerce and Policy</td>
<td></td>
</tr>
<tr>
<td>ITRN 767</td>
<td>Political Economy and Integration in Latin America</td>
<td></td>
</tr>
<tr>
<td>PUAD 504</td>
<td>Managing in the International Arena: Theory and Practice</td>
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**Global Education**

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<tbody>
<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td></td>
</tr>
<tr>
<td>EDUC 606</td>
<td>Education and Culture</td>
<td></td>
</tr>
<tr>
<td>EDUC 671</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDEP 550</td>
<td>Theories of Learning and Cognition</td>
<td></td>
</tr>
<tr>
<td>EDEP 650</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDEP 653</td>
<td>Culture and Intelligence</td>
<td></td>
</tr>
<tr>
<td>ENGH 665</td>
<td>Seminar in Global Culture</td>
<td></td>
</tr>
<tr>
<td>SOCI 845</td>
<td>Society and Education</td>
<td></td>
</tr>
<tr>
<td>or other course approved by the program director</td>
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### Global Governance and Public Management

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<tbody>
<tr>
<td>BIOD 709</td>
<td>Nonproliferation and Arms Control</td>
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</tr>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td></td>
</tr>
<tr>
<td>GOVT 631</td>
<td>Seminar in Comparative Politics and Institutions</td>
<td></td>
</tr>
<tr>
<td>GOVT 641</td>
<td>Global Governance</td>
<td></td>
</tr>
<tr>
<td>GOVT 741</td>
<td>Advanced Seminar in International Politics</td>
<td></td>
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<tr>
<td>ITRN 701</td>
<td>International Negotiation</td>
<td></td>
</tr>
<tr>
<td>ITRN 761</td>
<td>Special Topics in International Commerce and Policy</td>
<td></td>
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<tr>
<td>PUAD 636</td>
<td>The NGO: Policy and Management</td>
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<tr>
<td>PUAD 701</td>
<td>Cross-Cultural and Ethical Dimensions of International Management</td>
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</tr>
<tr>
<td>PUBP 502</td>
<td>Governance and Policy Processes</td>
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<tr>
<td>PUBP 700</td>
<td>Theory and Practice in Public Policy</td>
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<tr>
<td>PUBP 783</td>
<td>Global Governance</td>
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</table>

Or other course approved by the program director

Total Credits 12

### Global Health

<table>
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<tr>
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<tbody>
<tr>
<td>COMM 705</td>
<td>Intercultural Health and Risk Communication</td>
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<tr>
<td>GCH 543</td>
<td>Global Health</td>
<td></td>
</tr>
<tr>
<td>GCH 560</td>
<td>Environmental Health</td>
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<tr>
<td>GCH 571</td>
<td>HIV/AIDS: Concepts, Principles, and Interventions</td>
<td></td>
</tr>
<tr>
<td>GCH 611</td>
<td>Health Program Planning and Evaluation</td>
<td></td>
</tr>
<tr>
<td>GCH 640</td>
<td>Global Infectious Diseases</td>
<td></td>
</tr>
<tr>
<td>GCH 645</td>
<td>U.S. and Global Public Health Systems</td>
<td></td>
</tr>
<tr>
<td>GGS 540</td>
<td>Health Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 581</td>
<td>World Food and Population</td>
<td></td>
</tr>
<tr>
<td>HAP 609</td>
<td>Comparative International Health Systems</td>
<td></td>
</tr>
<tr>
<td>NUTR 630</td>
<td>Global Nutrition</td>
<td></td>
</tr>
<tr>
<td>PUBP 757</td>
<td>Public Policy in Global Health and Medical Practice</td>
<td></td>
</tr>
<tr>
<td>PUBP 758</td>
<td>Global Threats and Medical Policies</td>
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Or other course approved by the program director

Total Credits 12

### Global Media and Information Technology

<table>
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<tbody>
<tr>
<td>COMM 506</td>
<td>Communication in International Organizations</td>
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<tr>
<td>COMM 630</td>
<td>Theories of Public Relations</td>
<td></td>
</tr>
<tr>
<td>ITRN 604</td>
<td>International Trade and Technology</td>
<td></td>
</tr>
<tr>
<td>ITRN 701</td>
<td>Special Topics in International Commerce and Policy</td>
<td></td>
</tr>
<tr>
<td>ITRN 742</td>
<td>Technology Policy and International Strategies</td>
<td></td>
</tr>
<tr>
<td>PUBP 503</td>
<td>Culture, Organization, and Technology</td>
<td></td>
</tr>
<tr>
<td>PUBP 726</td>
<td>Telecommunications Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 736</td>
<td>International Migration and Public Policy</td>
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</table>

Or other course approved by the program director

Total Credits 12

### Global Population and Geography

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 580</td>
<td>Environmental Anthropology</td>
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</tr>
<tr>
<td>GGS 505</td>
<td>Transportation Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 533</td>
<td>Issues in Regional Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 540</td>
<td>Health Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 550</td>
<td>Geospatial Science Fundamentals</td>
<td></td>
</tr>
<tr>
<td>GGS 581</td>
<td>World Food and Population</td>
<td></td>
</tr>
<tr>
<td>GGS 590</td>
<td>Selected Topics in Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 631</td>
<td>Spatial Agent-Based Models of Human-Environment Interactions</td>
<td></td>
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<tr>
<td>PUBP 754</td>
<td>Geographic Information Systems and Spatial Analysis for Public Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 653</td>
<td>Immigration Policy</td>
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</tr>
</tbody>
</table>

Or other course approved by the program director

Total Credits 12

### Capstone Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GLOA 720</td>
<td>Capstone Research Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

### Dual Degree Options

Foreign Languages, MA and Global Affairs, MA Dual Degree

Students interested in pursuing a dual master’s program linking foreign languages or global affairs with another discipline should discuss their interest with the graduate program directors of both programs and review the university policies regarding Individualized Dual Master’s Degree Programs (p. 96).

Students approved to pursue a dual master’s program linking the foreign languages MA with a concentration in French, Spanish, or Spanish bilingual/multicultural education with the global affairs MA can share 12 credits between the two programs. Application to the second master’s program should be pursued with consultation of the directors of both programs. Admission to the second master’s program will require that the student has met the minimum prerequisites for admissions to the second program.
### Accelerated Master's

#### Bachelor's Degree (any)/Global Affairs, Accelerated MA

**Overview**

Highly qualified undergraduates in any major may apply to the accelerated master’s degree in global affairs. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in global affairs after satisfactory completion of 144 credits, sometimes within five years.

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information, see Application Requirements and Deadlines (http://globalaffairs.gmu.edu/programs/application/LA-MA-GLOA) on the departmental website.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete GLOA 600 Global Competencies and either GLOA 605 Interdisciplinary Research Methods or GLOA 610 Economic Globalization and Development with a minimum grade of 3.00 in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits (GLOA 605 Interdisciplinary Research Methods or GLOA 610 Economic Globalization and Development and GLOA 620 Human Systems) as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form. The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP 1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

### Higher Education Program

316 Enterprise Hall
Fairfax Campus

Phone: 703-993-2310
Website: highered.gmu.edu

The Higher Education Program prepares students for positions of leadership in teaching, research, and administration at community colleges, four-year colleges, and universities around the globe. The interdisciplinary curriculum focuses on leadership, the scholarship of teaching and learning, administration, and assessment. The program also prepares students for positions in academic and student affairs as well as in associations, government agencies, and industries whose activities relate to or impact higher education.

**MA in Higher Education and Student Development**

The program prepares students for positions in higher education administration, student development, non-profit higher education associations, and government organizations. Today’s higher education professionals are required to address both the needs of incoming traditionally aged students, as well as those of older students returning for a degree and special populations. The wide range of student backgrounds in the current complex context requires a holistic approach to college student development.

**Doctor of Philosophy in Education with Specialization in Higher Education**

The doctor of philosophy in education with a specialization in higher education is offered jointly by the Higher Education Program and the College of Education and Human Development. This doctoral program prepares students for faculty positions and positions of leadership in administration and student services through core required coursework in higher education and through a secondary concentration that can further disciplinary expertise.

See the Education, PhD (p. 196) for more information.

**Certificates**

The program offers graduate certificates in college teaching with a concentration in higher education pedagogy and in higher education administration. Students may take these as stand-alone certificates or pursue them concurrently with a graduate degree program. Part of the certificate course work may be applied to the degree subject to the approval of the director of the graduate degree program. Students must apply and be accepted to a graduate certificate program.

### Faculty

**Program Faculty**

**Core Faculty**

Lester (interim director), Schrum, Swan

**Affiliate Faculty**

Anthony, Brown Leonard, Cicchetti, Farris, Foster, Holmes, Hughes, Jorgenson, Lortenson, Lucas, Okahana, Owen, Park, Scher, Stearns

### Programs

- College Teaching Graduate Certificate (HE)
- Higher Education Administration Graduate Certificate
- Higher Education and Student Development, MA
College Teaching Graduate Certificate (HE)

Banner Code: LA-CERG-CTCH

Academic Advising
316 Enterprise Hall
Fairfax Campus
Email: hepadmin@gmu.edu
Website: highered.gmu.edu/programs/la-cerg-ctch-he

The certificate in College Teaching is designed for graduate students who are planning a career in undergraduate education. The program offers courses that enhance pedagogical skills and explore pedagogical assessment or scholarship with the use of technology in instruction.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/College_Teaching/Gedt.html).

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

Requirements

Certificate Requirements
Total credits: 18

This certificate may be pursued on a full-or part-time basis.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies tab.

Students pursuing this graduate certificate must choose either a concentration in English pedagogy or a concentration in higher education pedagogy.

Concentration in English Pedagogy (EPGY)
Core Courses
<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 610</td>
<td>Proseminar in Teaching the Reading of Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 615</td>
<td>Proseminar in Composition Instruction</td>
<td>3</td>
</tr>
</tbody>
</table>

Pedagogy Courses
Select two courses from the following: 6
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 620</td>
<td>Topics in Pedagogy</td>
<td></td>
</tr>
<tr>
<td>ENGH 695</td>
<td>Northern Virginia Writing Project Inservice Program</td>
<td></td>
</tr>
<tr>
<td>ENGH 697</td>
<td>Composition Theory</td>
<td></td>
</tr>
<tr>
<td>ENGH 699</td>
<td>Workshop in English</td>
<td></td>
</tr>
</tbody>
</table>

LING 521 Applied Linguistics: Teaching English as a Second Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

1 Offered only to full-time teachers through school district contracts.
2 Topic must be NVWP Summer Institute; open to full-time teachers on an invitation basis.

Electives
Select content-area coursework that supports their goals in developing pedagogical expertise.

Total Credits 6

1 Electives should be selected in consultation with an advisor.

Concentration in Higher Education Pedagogy (HEDP)
Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 605</td>
<td>Learning Assessment</td>
<td>3</td>
</tr>
<tr>
<td>HE 703</td>
<td>Higher Education in the Digital Age</td>
<td>3</td>
</tr>
<tr>
<td>HE 704</td>
<td>The Scholarship of Teaching and Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

Practicum
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 685</td>
<td>Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Electives
Electives must be chosen in consultation with the HEP Director and are selected from any HE course. (p. 1813)

Higher Education Administration Graduate Certificate

Banner Code: LA-CERG-HEDA

Academic Advising
316 Enterprise Hall
Fairfax Campus
Email: hepadmin@gmu.edu
Website: highered.gmu.edu/programs/la-cerg-heda

The certificate is designed for individuals who are planning or enhancing a career in a broad range of administrative positions in higher education institutions. The certificate will provide core knowledge for administrative processes in the context of higher education institutions.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Higher_Education_Administration/Gedt.html).
Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the graduate certificate in higher education administration, see Application Requirements and Deadlines (http://chss.gmu.edu/programs/LA-CERG-HEDA/application).

Requirements

Certificate Requirements
Total credits: 18

This certificate may be pursued on a full- or part-time basis.

For policies governing all graduate certificates, see AP 6.8 Requirements for Graduate Certificates (p. 94).

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 621</td>
<td>Higher Education in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HE 722</td>
<td>Organization and Administration in Higher Education</td>
<td>3</td>
</tr>
<tr>
<td>HE 646</td>
<td>Student Development Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

Additional Course

Special topics courses, when relevant, may be used to fulfill this requirement with the prior written approval of the director.

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 606</td>
<td>Diversity in Higher Education</td>
<td>3</td>
</tr>
<tr>
<td>HE 703</td>
<td>Higher Education in the Digital Age</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3

Electives

Select 6 credits of electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Total Credits: 6

Electives must be chosen in consultation with the HEP Director and are selected from any HE course (p. 1813).

Higher Education and Student Development, MA

Banner Code: LA-MA-HESD

Academic Advising

316 Enterprise Hall
Fairfax Campus
Email: hepadmin@gmu.edu

Website: highered.gmu.edu/programs/la-ma-hesd

The program prepares students for positions in higher education administration, student development, non-profit higher education associations, and government organizations. Today’s higher education professionals are required to address both the needs of incoming traditionally aged students, as well as those of older students returning for a degree and special populations. The wide range of student backgrounds in the current complex context requires a holistic approach to college student development.

This master of arts degree in Higher Education and Student Development will prepare future higher education leaders who understand higher education in the digital age, student development, multicultural and diverse populations, program development, professionalism, and learning assessment. This multidisciplinary program offers both thesis and project capstone options and is full and part-time student friendly. Alumni hold positions in areas such as career development, academic advising, assessment, facilities management, admissions, and residence life.

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information, see Application Requirements and Deadlines on the departmental website.

Policies
For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Transfer Credit

Courses applied to the degree are subject to the following restrictions: a maximum of 6 credits may be taken through the Consortium of Universities of the Washington Metropolitan Area; a maximum of 15 credits may be transfer credits; a maximum of 6 of the transfer credits may be from other accredited institutions.

Transfer credits include credits taken before first enrolling as an admitted degree-seeking student (at another institution, in another Mason graduate program, or in Mason non-degree status) or credits taken at another institution after admission to the degree program through study abroad or study elsewhere (which requires prior written approval of the director and the dean). Additional information may be found in AP 6.5.3 Transfer of Credit (p. 92).

Requirements

Degree Requirements
Total credits: 36

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 605</td>
<td>Learning Assessment</td>
<td>3</td>
</tr>
<tr>
<td>HE 606</td>
<td>Diversity in Higher Education</td>
<td>3</td>
</tr>
<tr>
<td>HE 610</td>
<td>Research Designs in Higher Education</td>
<td>3</td>
</tr>
</tbody>
</table>
HE 621  Higher Education in the United States  3
HE 644  Management and Administration of Student Services in Higher Education  3
HE 646  Student Development Theory  3
HE 685  Practicum  3
HE 703  Higher Education in the Digital Age  3

Total Credits  24

Capstone Requirement

Students may choose a thesis option or portfolio option as described below. Electives can be taken outside of HE courses and should be selected in consultation with the advisor.

Thesis Option

Students selecting the thesis option will complete the course work below. In addition to HE 799 Higher Education Thesis, students will take an additional research methods course, a research apprenticeship, and one elective.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One additional research methods course offered at Mason with approval of an advisor.</td>
<td>3</td>
</tr>
<tr>
<td>HE 785</td>
<td>Research Apprentice</td>
<td>3</td>
</tr>
<tr>
<td>Select 3 credits of electives</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HE 799</td>
<td>Higher Education Thesis (3 credits required)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

1 A thesis is a rigorous scholarly inquiry that requires the collection of original data and is presented in a traditional, formal, written format. It is informed by experience gained from the research apprenticeship. The guideline and deadlines for thesis submission are set by the University and administered by the University Dissertation and Thesis Service.

Portfolio Option

Students who select the portfolio option will also complete three electives (9 credits) approved by the advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 9 credits of electives</td>
<td>9</td>
</tr>
<tr>
<td>HE 797</td>
<td>Higher Education Portfolio</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

The degree requires coursework from a home department and selected courses from other disciplines. Students complete their degrees with a project or thesis.

Concentrations

Students pursuing a master's degree program in interdisciplinary studies can choose established concentrations in these areas:

- Computational Social Science
- Energy and Sustainability
- Folklore Studies
- Higher Education
- Religious Studies
- Social Entrepreneurship
- Social Justice and Human Rights
- War and the Military in Society
- Women and Gender Studies

For a variety of reasons, traditional graduate programs are not able to meet the specific educational goals of some students. They can choose an individualized concentration. With the help of a faculty advisor, they design an individualized program of study that includes courses from several academic disciplines.

Faculty

Concentration Heads

Breglia, Crooks, Dakake, Gatling, Hamner, Lair, Lester, Lewis, McCarron, Sachedina

Programs

Interdisciplinary Studies, MAIS

Banner Code: LA-MAIS-ISIN

Academic Advising

408 Enterprise Hall
Fairfax Campus

Email: mais@gmu.edu
Website: mais.gmu.edu/programs/LA-MAIS-ISIN

The master of arts degree program in interdisciplinary studies (MAIS) is designed for students who seek a degree that integrates knowledge from several disciplines. It addresses the rapidly evolving demand for unique graduate study by promoting advanced scholarship that transcends traditional disciplinary boundaries. Students can pursue one of the following structured interdisciplinary concentrations and also have the opportunity to design an individualized concentration to meet the special needs of their careers.

The MAIS in Interdisciplinary Studies with a concentration in Energy and Sustainability is a Green Leaf program (p. 107).
Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the MA in Interdisciplinary Studies, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/LA-MAIS-ISIN/application).

Applicants must show a capacity for original thought in cross-disciplinary research. There may be additional skills required of students applying to specific concentrations. Students will be admitted to the Individualized Studies concentration only if the applicant identifies a Mason Faculty member appropriate for the intended course of study who is willing to serve as the student's advisor.

Policies

For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Credit Restrictions

Courses applied to the degree are subject to the following restrictions:

- a maximum of 6 credits may be earned through independent study or directed readings and research courses
- a maximum of 6 credits may be taken through the Consortium of Universities of the Washington Metropolitan Area
- a maximum of 15 credits may be transfer credits
- a maximum of 6 of the transfer credits may be from other accredited institutions

Transfer credits include credits taken before first enrolling as an admitted degree-seeking student (at another institution, in another Mason graduate program, or in Mason nondegree status) or credits taken at another institution after admission to the degree program through study abroad or study elsewhere (which requires prior written approval of the director and the dean). Additional information may be found in Academic Policies (p. 77).

Requirements

Degree Requirements

Total credits: 36

This is a Green Leaf program.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 543) tab.

Students pursuing this degree must successfully complete 36 credits of graduate coursework in one of the concentrations which follow. Students must submit a curriculum worksheet that has been approved by their concentration head and the director. All students complete their work in the program with a project or thesis.

Concentration in Computational Social Science (CSS)

Computational social science (CSS) is a relatively new interdisciplinary science in which social science questions are investigated with modern computational tools. Computational social scientists investigate complex social phenomena such as economic markets, traffic control, and political systems by simulating the interactions of the many actors in such systems on computers. They hope to gain insights which will lead to better management of the behavior of the larger social systems, i.e., prevention of market crashes, smoothed traffic flow, or maintenance of political stability. The intractability of many social problems calls for the new approaches provided by computational social science.

CSS is a highly interdisciplinary field that requires teams to plan and complete projects, be they undertaken by government, industry, or non-profit entities. Project managers of such teams, overseeing all elements of project design and execution, tend to hold PhDs. The MAIS concentration will train students to be members of these project teams, able to meaningfully contribute to background research and to project design, execution, and communication.

Prior background should include a bachelor's degree in one of the social sciences, in computer science, in engineering, or in a relevant discipline, as well as undergraduate courses in these and related areas. Bachelor's degrees in other areas are also eligible, but the student may be required to take additional courses in social science, mathematics, or computer science as prerequisites to admission.

Required Course of Proseminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 796</td>
<td>MAIS ProSeminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 1

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS 600</td>
<td>Introduction to Computational Social Science</td>
<td>3</td>
</tr>
<tr>
<td>CSS 605</td>
<td>Object-Oriented Modeling in Social Science</td>
<td>3</td>
</tr>
<tr>
<td>CSS 610</td>
<td>Agent-based Modeling and Simulation</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

Select three electives from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS 620</td>
<td>Origins of Social Complexity</td>
</tr>
<tr>
<td>CSS 625</td>
<td>Complexity Theory in the Social Sciences</td>
</tr>
<tr>
<td>CSS 645</td>
<td>Spatial Agent-Based Models of Human-Environment Interactions</td>
</tr>
<tr>
<td>CSS 692</td>
<td>Social Network Analysis</td>
</tr>
<tr>
<td>CSS 739</td>
<td>Topics in Computational Social Science</td>
</tr>
</tbody>
</table>

Total Credits: 18

1 The required CSS courses provide an understanding of the conceptual, technical, and practical foundations of computational social science.

2 The electives provide an understanding of the technical foundations and current work in at least two subfields of computational social science.

Research Course

The research course provides students with exposure to the most current ongoing research in the field and allows them to further develop their computational research expertise.
**Evaluative**

The electives allow students to acquire a substantive specialization as well as additional training in social and computational science. Because of the broad spectrum of social science phenomena, methodologies, and student backgrounds, there is a large pool of potential courses. Electives may include any Mason master's-level course in computational social science, social science, computer science, statistics, or other quantitative methods such as data visualization, information technology, and geographic information science. Electives should be selected in conjunction with and approval of the student’s advisor and the Director of CSS Graduate Studies. If the student does not have prior coursework in multivariate statistical analysis, the electives should include at least one such course relevant for the student’s chosen specialization.

Students who elect to complete a 4-credit thesis take 9 elective credits. Students who complete a 1-credit project take 12 elective credits.

**Proposal**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 797</td>
<td>Interdisciplinary Studies Proposal</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>1</td>
</tr>
</tbody>
</table>

**Project or Thesis**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nine to twelve credits</td>
<td>9-12</td>
</tr>
<tr>
<td></td>
<td>Select one from the following:</td>
<td>1-4</td>
</tr>
<tr>
<td>MAIS 798</td>
<td>Interdisciplinary Studies Project (take 1 credit)</td>
<td></td>
</tr>
<tr>
<td>MAIS 799</td>
<td>Interdisciplinary Studies Thesis (take 4 credits)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>13</td>
</tr>
</tbody>
</table>

**Concentration in Energy and Sustainability (EAS)**

This concentration is designed for students interested in careers in energy and sustainability-related positions in the public, private, or non-profit sectors, including law, national and international policy, media, government, and business. As one of the University’s Green Leaf academic programs, the concentration in energy and sustainability focuses on finding ways to meet present needs for energy and material goods without compromising the ability of future generations to meet their needs. A sustainability education lies at the intersection of environmental science, engineering, economics, business, public policy, social justice, and many other areas. Energy required to fuel all of these endeavors is a crucial component of sustainability.

**Required Course of Interdisciplinary Studies Proseminar**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 796</td>
<td>MAIS ProSeminar</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>1</td>
</tr>
</tbody>
</table>

**Core Courses in Energy and Sustainability**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>EVPP 533</td>
<td>Energy Policy</td>
<td>3</td>
</tr>
<tr>
<td>GGS 507</td>
<td>Geographic Approaches on Sustainable Development</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9</td>
</tr>
</tbody>
</table>

**Natural Science Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 581</td>
<td>Topics in Renewable Energy</td>
<td>3</td>
</tr>
<tr>
<td>or GES 521</td>
<td>Geology of Energy Resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9</td>
</tr>
</tbody>
</table>

**Energy, Sustainability or Environmental Policy**

Students choose from the following courses or other relevant courses chosen in consultation with an advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two courses from the following:</td>
<td></td>
</tr>
<tr>
<td>BIOD 760</td>
<td>National Security Technology and Policy</td>
<td>6</td>
</tr>
<tr>
<td>ECON 695</td>
<td>Special Topics in Economics 1</td>
<td></td>
</tr>
<tr>
<td>EVPP 505</td>
<td>Selected Topics in Environmental Science (take 3 credits) 2</td>
<td></td>
</tr>
<tr>
<td>EVPP 638</td>
<td>Corporate Environmental Management and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 642</td>
<td>Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>GGS 525</td>
<td>Economics of Human/Environment Interactions</td>
<td></td>
</tr>
<tr>
<td>POGO 550</td>
<td>Topics in Policy and Government</td>
<td></td>
</tr>
<tr>
<td>or when topic involves environmental or sustainability policy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

1 When the topic involves environmental or sustainability policy.
2 When the topic involves environmental or sustainability policy.
3 When the topic involves environmental or sustainability issues.

**Humanities or Social Science Approaches to Sustainability and Environmental Issues**

Students choose from the following courses or other relevant courses chosen in consultation with an advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two courses from the following:</td>
<td></td>
</tr>
<tr>
<td>COM 660</td>
<td>Climate Change and Sustainability Communication Campaigns</td>
<td></td>
</tr>
<tr>
<td>HIST 615</td>
<td>Problems in American History 1</td>
<td></td>
</tr>
<tr>
<td>ECON 695</td>
<td>Special Topics in Economics 2</td>
<td></td>
</tr>
<tr>
<td>INTS 540</td>
<td>Contemporary Issues in Social Justice Human Rights</td>
<td></td>
</tr>
<tr>
<td>ITRN 760</td>
<td>International Environmental Politics</td>
<td></td>
</tr>
<tr>
<td>PHIL 643</td>
<td>Environmental Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

1 When the topic involves environmental or sustainability issues.
2 When the topic involves environmental or sustainability policy.
### Planning, Modeling, or Management

Students choose from the following courses or other relevant courses chosen in consultation with an advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 601</td>
<td>Infrastructure Modeling</td>
<td>3-4</td>
</tr>
<tr>
<td>EVPP 650</td>
<td>Ecosystem Analysis and Modeling</td>
<td></td>
</tr>
<tr>
<td>EVPP 693</td>
<td>Directed Studies in Environmental Science and Public Policy (take 3 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3-4

### Natural Science

Students choose from the following courses or other relevant courses chosen in consultation with an advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 690</td>
<td>Scientific Basis of Climate Change</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 607</td>
<td>Fundamentals of Ecology</td>
<td></td>
</tr>
<tr>
<td>EVPP 677</td>
<td>Applied Ecology and Ecosystem Management</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

### Electives

Students who wish to take MAIS 798 Interdisciplinary Studies Project for their capstone research experience will take one course (3 credits) of electives from courses listed below or other relevant course chosen in consultation with an advisor. They may also fulfill this requirement with experiential learning. Students who wish to take MAIS 799 Interdisciplinary Studies Thesis will not take an elective course or pursue experiential learning credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 690</td>
<td>Numerical Methods for Bioinformatics</td>
<td>0-3</td>
</tr>
<tr>
<td>EVPP 632</td>
<td>Qualitative Research Methods for Environmental Scientists</td>
<td></td>
</tr>
<tr>
<td>EVPP 650</td>
<td>Ecosystem Analysis and Modeling</td>
<td></td>
</tr>
<tr>
<td>EVPP 651</td>
<td>Multivariate Data Analysis for Ecology and Environmental Science</td>
<td></td>
</tr>
<tr>
<td>GLOA 605</td>
<td>Interdisciplinary Research Methods</td>
<td></td>
</tr>
<tr>
<td>OR 682</td>
<td>Computational Methods in Engineering and Statistics</td>
<td></td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td></td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>SOCI 620</td>
<td>Methods and Logic of Social Inquiry</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

When the topic involves environmental or sustainability policy.

When the topic involves environmental or sustainability issues.

Students may fulfill their elective credits with experiential learning. Experiential learning opportunities can include internships, service-learning, consulting projects, and field studies or research (including overseas). Because the intention is to develop and apply newly acquired skills, students may not use work done previously or their current employment to fulfill this requirement. All experiential learning projects must be approved by the social entrepreneurship concentration head the semester before registering for the course.

### Research Methods Course

Students choose one of the following courses or other relevant courses in consultation with an advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 690</td>
<td>Numerical Methods for Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 632</td>
<td>Qualitative Research Methods for Environmental Scientists</td>
<td></td>
</tr>
<tr>
<td>EVPP 650</td>
<td>Ecosystem Analysis and Modeling</td>
<td></td>
</tr>
<tr>
<td>EVPP 651</td>
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<tr>
<td>GLOA 605</td>
<td>Interdisciplinary Research Methods</td>
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<tr>
<td>OR 682</td>
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</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td></td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>SOCI 620</td>
<td>Methods and Logic of Social Inquiry</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

When topic is Analytical Methods for Science, Technology and Innovation Policy.

### Proposal

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 797</td>
<td>Interdisciplinary Studies Proposal</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 1

### Project or Thesis

Students who wish to do a project in lieu of a thesis will take 1 credit of MAIS 798 Interdisciplinary Studies Project and an additional 3 credit elective course from the courses listed under the electives requirement.
Interdisciplinary Studies, MAIS

Students who choose to write a thesis will take 4 credits of MAIS 799 Interdisciplinary Studies Thesis and no additional electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Zero to three credits of electives</td>
<td>0-3</td>
</tr>
<tr>
<td></td>
<td>Select one from the following:</td>
<td>1-4</td>
</tr>
<tr>
<td>MAIS 798</td>
<td>Interdisciplinary Studies Project (take 1 credit)</td>
<td></td>
</tr>
<tr>
<td>MAIS 799</td>
<td>Interdisciplinary Studies Thesis (take 4 credits)</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Concentration in Folklore Studies (FLKS)
This concentration explores the processes of tradition that move through multiple expressive forms, such as folktales, folk beliefs, folk medicine, folk art, folksong, and literature. A discipline based on ethnographic fieldwork, folklore offers students a chance to work in communities and collect living traditional materials that are critical to human identity and values. Interdisciplinary by nature, folklore thrives on local particularities and compelling global connections. Internships in the many Washington, D.C., metropolitan area folklore organizations are central to students’ experiences. This course of study prepares students for careers in cultural agencies, governmental organizations, teaching institutions, and advanced study in the humanities.

Students pursuing this concentration must complete at least 6 credits of courses from outside the English Department.

Required Course of Proseminar
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 796</td>
<td>MAIS ProSeminar</td>
<td>1</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Core Courses

Special Topics in Folklore
Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 590</td>
<td>Topics in Folk Narrative</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 591</td>
<td>Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 681</td>
<td>Advanced Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 798</td>
<td>Directed Reading and Research (take 3 credits)</td>
<td></td>
</tr>
<tr>
<td>Pathways in Folklore Scholarship</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENGH 681</td>
<td>Advanced Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>Internship in Folklore</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENGH 604</td>
<td>Internship in Folklore</td>
<td></td>
</tr>
</tbody>
</table>

Research Methodology Course
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 500</td>
<td>Research in English Studies</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 591</td>
<td>Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>GLOA 605</td>
<td>Interdisciplinary Research Methods</td>
<td></td>
</tr>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History</td>
<td></td>
</tr>
<tr>
<td>SOCI 634</td>
<td>Qualitative Research Methods</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

1 Courses may be repeated.
2 When topic is Pathways to Folklore Scholarship.
3 When topic is Field School for Cultural Documentation.

Specialization
Students choose an area of specialization which must be approved by a faculty advisor. Specialization topics include public folklore (museums, archives, arts and humanities councils, and nonprofit organizations); folklore (ethnicity and immigration); folklore and literature; folklore and the teaching of writing and literature; folklore and history; and folklore and conflict resolution. Students can also opt for open specialization, with courses chosen in consultation with advisor. Possibilities include folklore and editing, applied storytelling, folklore and mythology, folklore and art history, folklore and gender studies, and folklore and communication.

Electives
Electives require the prior written approval of a faculty advisor. Students who elect to do a 1 credit project take 6 elective credits. Students who do a 4 credit thesis take 3 elective credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one to two electives</td>
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<tr>
<td>Total Credits</td>
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<td>3-6</td>
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Proposal
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 797</td>
<td>Interdisciplinary Studies Proposal</td>
<td>1</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Project or Thesis
Select one from the following: 1-4 credits

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 798</td>
<td>Interdisciplinary Studies Project (take 1 credit)</td>
<td></td>
</tr>
<tr>
<td>MAIS 799</td>
<td>Interdisciplinary Studies Thesis (take 4 credits)</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>1-4</td>
</tr>
</tbody>
</table>

Concentration in Religious Studies (RELI)
The concentration in religious studies is particularly relevant for students who are interested in careers in law, national and international government, print and media journalism, library sciences, archives and museums, public and social service, teaching, advanced graduate studies, and religious communities and institutions. The Washington, DC metropolitan area is rich in the presence of many major religious traditions and their places of worship.

The core courses introduce students to the study of religion as a unique and rigorous intellectual discipline. Students learn to evaluate a variety of perspectives on religion and gain a clear understanding of the dimension of the sacred in all aspects of human life including those commonly designated "secular". Students discover how religious perceptions of the sacred respond to an evolving world and relate to and influence cultures, institutions, and values.

Students also examine the effects of historical crises and the forces of change on religions including contemporary religious pluralism and inter-religious dialogue. Students gain a deeper knowledge of specific
traditions and a more profound understanding of values and worldviews from the viewpoint of cultural diversity and religious pluralism.

**Required Course of Proseminar**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 796</td>
<td>MAIS ProSeminar</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>3</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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<td><strong>6</strong></td>
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</table>

**Interdisciplinary Competencies in Religious Studies (9 credits)**

Students take three courses from the list of competencies below to complement their interests and the skills they have already acquired through formal education and professional experience, or other courses that are chosen in consultation with an advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 603</td>
<td>Aristotle: Selected Works</td>
<td></td>
</tr>
<tr>
<td>PHIL 608</td>
<td>Hegel's Phenomenology of the Spirit</td>
<td></td>
</tr>
<tr>
<td>PHIL 640</td>
<td>History of Ethical Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL 658</td>
<td>Feminist Theory</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
<tr>
<td>RELI 640</td>
<td>Religion and Law</td>
<td></td>
</tr>
<tr>
<td>RELI 646</td>
<td>Islam and Human Rights</td>
<td></td>
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</tbody>
</table>
| RELI 660 | Islamic Biomedical Ethics (Religion in the Americas) | |}

**Religion in the Americas**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 661</td>
<td>Religion in North America to 1870</td>
<td></td>
</tr>
<tr>
<td>HIST 662</td>
<td>U.S. Religion since 1870</td>
<td></td>
</tr>
<tr>
<td>HIST 663</td>
<td>Topics in U.S. Religious History</td>
<td></td>
</tr>
<tr>
<td>RELI 634</td>
<td>Topics in American Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 640</td>
<td>Religion and Law</td>
<td></td>
</tr>
</tbody>
</table>

**Religions in Conflict, Conversation, and Transition**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 545</td>
<td>Ritual and Power in Social Life</td>
<td></td>
</tr>
<tr>
<td>CONF 653</td>
<td>World Religions, Diplomacy, and Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 722</td>
<td>Conflict and Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
<tr>
<td>RELI 644</td>
<td>Islamic Texts and Contexts</td>
<td></td>
</tr>
</tbody>
</table>
| RELI 645 | Muslim Comparative Theologies: Sunni-Shi‘i Religious Thought | |}

**Electives**

Elective courses should complement the student’s competencies, and/or reflect the topic of their project or thesis. Students take 15-18 credits of electives chosen from the courses listed below, or other appropriate courses chosen in consultation with the concentration head. Students who do a project for their capstone will take 18 credits of electives. Students who do a thesis for their capstone will take 15 credits of electives.

Select 5-6 courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 535</td>
<td>Anthropology and the Human Condition: Seminar I</td>
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</tr>
<tr>
<td>ANTH 536</td>
<td>Anthropology and the Human Condition: Seminar II</td>
<td></td>
</tr>
<tr>
<td>ANTH 545</td>
<td>Ritual and Power in Social Life</td>
<td></td>
</tr>
<tr>
<td>CONF 653</td>
<td>World Religions, Diplomacy, and Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 722</td>
<td>Conflict and Religion</td>
<td></td>
</tr>
<tr>
<td>HIST 642</td>
<td>Humanism and the Renaissance</td>
<td></td>
</tr>
<tr>
<td>HIST 643</td>
<td>Religion and Society in the Reformation Era</td>
<td></td>
</tr>
<tr>
<td>HIST 661</td>
<td>Religion in North America to 1870</td>
<td></td>
</tr>
<tr>
<td>HIST 662</td>
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<tr>
<td>PHIL 603</td>
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<td>Religion and Secularity in State and Society</td>
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<tr>
<td>RELI 640</td>
<td>Religion and Law</td>
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</tr>
<tr>
<td>RELI 644</td>
<td>Islamic Texts and Contexts</td>
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</tr>
<tr>
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<td>Muslim Comparative Theologies: Sunni-Shi‘i Religious Thought</td>
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</tr>
<tr>
<td>RELI 646</td>
<td>Islam and Human Rights</td>
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</tr>
<tr>
<td>RELI 660</td>
<td>Islamic Biomedical Ethics</td>
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<tr>
<td>SOCI 655</td>
<td>Ethnography</td>
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**Proposal**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 797</td>
<td>Interdisciplinary Studies Proposal</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

**Project or Thesis**

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 798</td>
<td>Interdisciplinary Studies Project (take 1 credit)</td>
<td></td>
</tr>
<tr>
<td>MAIS 799</td>
<td>Interdisciplinary Studies Thesis (take 4 credits)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>1-4</strong></td>
</tr>
</tbody>
</table>
Concentration in Social Entrepreneurship (SOCE)

The concentration in social entrepreneurship will equip students with the subject matter expertise, strategic knowledge, technical support, and social networks needed to create, operate, develop, and accelerate startups; bring ideas to scale; and improve an existing program’s effectiveness. These future leaders will learn about sustainability, ethical leadership, strategic management, and working effectively within complex networks made up of divergent groups of stakeholders. All students will complete a capstone research project and an experiential learning requirement that deliver practical knowledge and real-world experience. This degree is suitable for students seeking careers in government, business, or the non-profit sector.

Required Course of Proseminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 796</td>
<td>MAIS ProSeminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 1

Core Courses

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Entrepreneurship and Leadership</td>
<td></td>
</tr>
<tr>
<td>INTS 550 Social Innovation In Action</td>
<td>3</td>
</tr>
<tr>
<td>INTS 535 Leadership in a Changing Environment</td>
<td>3</td>
</tr>
<tr>
<td>Business</td>
<td></td>
</tr>
<tr>
<td>Select one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 540 Analysis of Financial Decisions</td>
<td></td>
</tr>
<tr>
<td>GBUS 697 Special Topics in Graduate School of Business</td>
<td>1</td>
</tr>
<tr>
<td>MBA 711 Entrepreneurship</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

1. When topic is Introduction to Entrepreneurship.

Entrepreneurship (9-12 credits)

Students take three or four courses from the list of competencies below to complement the skills they have already acquired through formal education and professional experience, or other courses to enhance their skills, including oral and written communication and research methods, that are chosen in consultation with an advisor. Students choosing the thesis option for their capstone take 9 credits including a research methods course. Students choosing the project option for their capstone take 12 credits total, with a research methods course being optional.

Environmental and Public Policy

<table>
<thead>
<tr>
<th>Environmental and Public Policy</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 638 Corporate Environmental Management and Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 761 Social Entrepreneurship and Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 784 Entrepreneurship, Economics, and Public Policy</td>
<td></td>
</tr>
</tbody>
</table>

Finance and Accounting

<table>
<thead>
<tr>
<th>Finance and Accounting</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBUS 540 Analysis of Financial Decisions</td>
<td></td>
</tr>
<tr>
<td>PUAD 655 Nonprofit Fund Raising and Resource Development</td>
<td></td>
</tr>
<tr>
<td>PUAD 664 Nonprofit Financial Management</td>
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</tbody>
</table>

Business and Project Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBUS 697</td>
<td>Special Topics in Graduate School of Business</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or MBA 711 Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>MBA 712</td>
<td>Project Management</td>
<td></td>
</tr>
<tr>
<td>MBA 714</td>
<td>Managing Growth of Small Businesses</td>
<td></td>
</tr>
<tr>
<td>MBA 752</td>
<td>Turning Ideas into Successful Companies</td>
<td></td>
</tr>
<tr>
<td>PUAD 505</td>
<td>Introduction to Management of Nonprofits</td>
<td></td>
</tr>
<tr>
<td>PUAD 658</td>
<td>Social Entrepreneurship and Social Enterprise</td>
<td></td>
</tr>
<tr>
<td>PUAD 659</td>
<td>Nonprofit Law, Governance, and Ethics</td>
<td></td>
</tr>
</tbody>
</table>

1. When topic is Introduction to Entrepreneurship.

Leadership and Well-Being

<table>
<thead>
<tr>
<th>Leadership and Well-Being</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 595 Experiential Learning</td>
<td></td>
</tr>
<tr>
<td>INTS 595 Experiential Learning</td>
<td></td>
</tr>
</tbody>
</table>

1. When topic is Mindfulness and Leadership.
2. When the topic is Leadership and Positive Organizations.

Research Methods

<table>
<thead>
<tr>
<th>Research Methods</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLOA 605 Interdisciplinary Research Methods</td>
<td></td>
</tr>
</tbody>
</table>

1. or appropriate alternative chosen in consultation with the concentration head.

Subject Matter Expertise

Students must develop expertise in the social problem they seek to address through entrepreneurship. Possible areas of focus include global and/or local poverty, homelessness, human trafficking, conflict resolution, women’s rights, racial inequality, educational and health-care access, climate change, environmental sustainability, and human rights, among other possible topics. The experiential learning requirement should be met through an opportunity that advances the student’s understanding of their subject matter expertise.

Students take:

<table>
<thead>
<tr>
<th>Subject Matter Expertise</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 540 Contemporary Issues in Social Justice Human Rights</td>
<td>3</td>
</tr>
</tbody>
</table>

6 credits of courses related to the student’s chosen subject matter area of expertise, chosen in consultation with the concentration head.

Experiential learning

<table>
<thead>
<tr>
<th>Experiential learning</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 795 Experiential Learning</td>
<td></td>
</tr>
<tr>
<td>or other relevant experiential learning course chosen in consultation with the concentration head.</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

1. or other social justice and human rights course chosen in consultation with the concentration head.
Students will seek out and/or create an opportunity for experiential learning that aligns with a social mission. Experiential learning opportunities can include internships, service-learning, consulting projects, and field studies or research (including overseas). Because the intention is to develop and apply newly acquired skills, students may not use work done previously or their current employment to fulfill this requirement. All experiential learning projects must be approved by the social entrepreneurship concentration head the semester before registering for the course.

### Proposal

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 797</td>
<td>Interdisciplinary Studies Proposal</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>1</td>
</tr>
</tbody>
</table>

### Project or Thesis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one from the following:</td>
<td></td>
</tr>
<tr>
<td>MAIS 798</td>
<td>Interdisciplinary Studies Project (take 1 credit)</td>
<td>4</td>
</tr>
<tr>
<td>MAIS 799</td>
<td>Interdisciplinary Studies Thesis (take 4 credits)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>4</td>
</tr>
</tbody>
</table>

### Concentration in Social Justice and Human Rights (SJHR)

The social justice and human rights concentration is designed to cultivate a deep theoretical understanding of the social, political, cultural, historical, and economic implications of a wide array of social injustices and human rights issues. Students are engaged in the applied process of imagining and actualizing holistic and complex strategies for creating and sustaining a more equitable, just, and humane world.

### Required Course of Proseminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 796</td>
<td>MAIS ProSeminar</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
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</tr>
</tbody>
</table>

### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 540</td>
<td>Contemporary Issues in Social Justice Human Rights</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social Justice and Human Rights Courses</td>
<td></td>
</tr>
<tr>
<td>INTS 537</td>
<td>Critical Race Studies</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Choose one of the following:</td>
<td></td>
</tr>
<tr>
<td>WMST 602</td>
<td>Queer Theory</td>
<td>3</td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social Justice and Human Rights Issues and Movements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one course from the following:</td>
<td></td>
</tr>
<tr>
<td>EDUC 892</td>
<td>Social Justice and Equity in International Education</td>
<td>3</td>
</tr>
<tr>
<td>HE 705</td>
<td>Access and Social Justice</td>
<td></td>
</tr>
<tr>
<td>INTS 500</td>
<td>Animal Rights: Issues and Movements</td>
<td></td>
</tr>
<tr>
<td>INTS 538</td>
<td>Representations of Race</td>
<td></td>
</tr>
<tr>
<td>SOCI 623</td>
<td>Racial and Ethnic Relations: American and Selected Global Perspectives</td>
<td></td>
</tr>
</tbody>
</table>

### Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students complete 6 or 9 elective credits from the following or other relevant courses chosen in consultation with the concentration head. Students who do a project for the capstone will complete 9 credits. Students who do a thesis for their capstone will complete 6 credits.</td>
<td></td>
</tr>
<tr>
<td>ANTH 721</td>
<td>Culture, Power, and Conflict</td>
<td>3</td>
</tr>
<tr>
<td>COMM 660</td>
<td>Climate Change and Sustainability Communication Campaigns</td>
<td>3</td>
</tr>
<tr>
<td>COMM 690</td>
<td>Special Topics in Communication</td>
<td>3</td>
</tr>
<tr>
<td>CONF 658</td>
<td>Diversity and Difference in Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 682</td>
<td>Principles of Environmental Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 702</td>
<td>Peace Studies</td>
<td>3</td>
</tr>
<tr>
<td>CONF 707</td>
<td>Gender and Violence</td>
<td>3</td>
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<tr>
<td>CONF 708</td>
<td>Identity and Conflict</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>--------</td>
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<tr>
<td>CONF 720</td>
<td>Ethnic and Cultural Factors in Conflict Resolution</td>
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</tr>
<tr>
<td>CONF 721</td>
<td>Conflict and Race</td>
<td></td>
</tr>
<tr>
<td>CONF 723</td>
<td>Conflict and Gender</td>
<td></td>
</tr>
<tr>
<td>CONF 728</td>
<td>Human Rights Theory and Practice in Comparative Perspective</td>
<td></td>
</tr>
<tr>
<td>CONF 730</td>
<td>Structural Sources of Conflict</td>
<td></td>
</tr>
<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td></td>
</tr>
<tr>
<td>EDUC 606</td>
<td>Education and Culture</td>
<td></td>
</tr>
<tr>
<td>EDUC 797</td>
<td>Advanced Topics in Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 874</td>
<td>The Achievement Gap</td>
<td></td>
</tr>
<tr>
<td>EDUC 886</td>
<td>School Reform in the United States: Politics and Policies</td>
<td></td>
</tr>
<tr>
<td>EDUC 887</td>
<td>Neighborhood, Community, Education Policy</td>
<td></td>
</tr>
<tr>
<td>EDUC 892</td>
<td>Social Justice and Equity in International Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 894</td>
<td>Seminar in Multicultural Education</td>
<td></td>
</tr>
<tr>
<td>ENGH 526</td>
<td>Special Topics in the History and Criticism of Children's Literature</td>
<td></td>
</tr>
<tr>
<td>EVPP 637</td>
<td>Human Dimensions of Climate Change</td>
<td></td>
</tr>
<tr>
<td>GOVT 727</td>
<td>Restorative Justice</td>
<td></td>
</tr>
<tr>
<td>HE 606</td>
<td>Diversity in Higher Education</td>
<td></td>
</tr>
<tr>
<td>HE 705</td>
<td>Access and Social Justice</td>
<td></td>
</tr>
<tr>
<td>HE 792</td>
<td>Special Topics in Higher Education</td>
<td></td>
</tr>
<tr>
<td>HIST 615</td>
<td>Problems in American History</td>
<td></td>
</tr>
<tr>
<td>INTS 500</td>
<td>Animal Rights: Issues and Movements</td>
<td></td>
</tr>
<tr>
<td>INTS 538</td>
<td>Representations of Race</td>
<td></td>
</tr>
<tr>
<td>INTS 595</td>
<td>Experiential Learning</td>
<td></td>
</tr>
<tr>
<td>NUTR 594</td>
<td>Special Topics in Nutrition and Food Studies</td>
<td></td>
</tr>
<tr>
<td>PHIL 643</td>
<td>Environmental Ethics</td>
<td></td>
</tr>
<tr>
<td>PUAD 642</td>
<td>Environmental Policy</td>
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</tr>
<tr>
<td>PUAD 649</td>
<td>Advocacy and Lobbying</td>
<td></td>
</tr>
<tr>
<td>PUBP 762</td>
<td>Social Institutions and Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 765</td>
<td>Human Smuggling and Trafficking</td>
<td></td>
</tr>
<tr>
<td>RELI 646</td>
<td>Islam and Human Rights</td>
<td></td>
</tr>
<tr>
<td>SOCI 623</td>
<td>Racial and Ethnic Relations: American and Selected Global Perspectives</td>
<td></td>
</tr>
<tr>
<td>SOCI 624</td>
<td>International Migration in the Age of Globalization</td>
<td></td>
</tr>
<tr>
<td>SOCI 633</td>
<td>Special Topics in Sociology</td>
<td></td>
</tr>
<tr>
<td>SOCI 670</td>
<td>Social Networks, New Media, and Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 803</td>
<td>Institutions and Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 857</td>
<td>Sociology of Human Rights</td>
<td></td>
</tr>
<tr>
<td>SOCW 652</td>
<td>Influencing Social Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 654</td>
<td>Social Policy for Children and Youth</td>
<td></td>
</tr>
<tr>
<td>SOCW 663</td>
<td>Global Human Rights Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 687</td>
<td>Empowering Communities for Change</td>
<td></td>
</tr>
<tr>
<td>WMST 504</td>
<td>Gender, Sexuality, and Disability</td>
<td></td>
</tr>
<tr>
<td>WMST 506</td>
<td>Gender and Violence in Social Institutions</td>
<td></td>
</tr>
<tr>
<td>WMST 507</td>
<td>Transnational Sexualities</td>
<td></td>
</tr>
<tr>
<td>WMST 508</td>
<td>Gender, Sexuality, and Human Rights</td>
<td></td>
</tr>
<tr>
<td>WMST 509</td>
<td>Gender, Sexuality, and International Migration</td>
<td></td>
</tr>
<tr>
<td>WMST 516</td>
<td>Policing Black Bodies</td>
<td></td>
</tr>
<tr>
<td>WMST 550</td>
<td>Current Topics in Women and Gender Studies</td>
<td></td>
</tr>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
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</table>

**Total Credits**: 6-9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLOA 605</td>
<td>Interdisciplinary Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>HE 610</td>
<td>Research Designs in Higher Education</td>
<td></td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 611</td>
<td>Feminist Research Practice</td>
<td></td>
</tr>
</tbody>
</table>

**Research Methods Course**

**Proposal**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 797</td>
<td>Interdisciplinary Studies Proposal</td>
<td>1</td>
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</tbody>
</table>

**Total Credits**: 1

**Project or Thesis**

Select one from the following: 1-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 798</td>
<td>Interdisciplinary Studies Project (take 1 credit)</td>
<td></td>
</tr>
<tr>
<td>MAIS 799</td>
<td>Interdisciplinary Studies Thesis (take 4 credits)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 1-4

**Concentration in War and the Military in Society (WMS)**

The concentration in war and the military in society equips students with skills and knowledge to evaluate, analyze, and solve problems related to the use of organized violence, including questions of national security and national strategy, international relations, defense policymaking, and domestic, fiscal, legal, and social policy surrounding the instruments of national defense. Students will engage in interdisciplinary coursework that provides a variety of methods and tools to frame and analyze these questions, using historical and contemporary case studies to better understand the dilemmas and opportunities facing policymakers and
military professionals in their efforts to think strategically about a variety of challenges.

All students will complete a capstone research project that provides an opportunity to do deep research into an historic or contemporary case. In addition, students may also complete an experiential learning requirement that combines practical knowledge and real-world experience to engage in problems connected to war and society.

**Required Course of Proseminar**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 796</td>
<td>MAIS ProSeminar</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Credits**: 1

**Interdisciplinary Perspectives on War and the Military in Society (27-30 Credits)**

Students take 9-10 courses from 2 or more interdisciplinary perspectives below to complement the skills and subject matter expertise they have already acquired through formal education and professional experience, or other courses to enhance their portfolio that are chosen in consultation with the concentration head. Students who do a project (1 credit) in lieu of a thesis (4 credits) for their capstone will take an additional 3-credit course.

**Historical Perspectives**

These courses draw upon conflicts from two thousand years of human experience, from ancient Rome to contemporary issues in civil-military relations. The historical perspective focuses upon the past and the way that problems related to war and society have changed over time.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 615</td>
<td>Problems in American History (when topic is The Second World War or Civil Military Relations)</td>
<td></td>
</tr>
<tr>
<td>HIST 617</td>
<td>Topics in the American Civil War Era (when the topic is The Civil War)</td>
<td></td>
</tr>
<tr>
<td>HIST 631</td>
<td>Era of the American Revolution</td>
<td></td>
</tr>
<tr>
<td>HIST 635</td>
<td>Problems in European History (when the topic is Fall of the Roman Empire, The First Global Wars, Revolutions in the Atlantic, The Second World War, or Technology and Power)</td>
<td></td>
</tr>
<tr>
<td>HIST 675</td>
<td>Problems in Military History</td>
<td></td>
</tr>
<tr>
<td>HIST 677</td>
<td>The Vietnam War</td>
<td></td>
</tr>
<tr>
<td>HIST 679</td>
<td>War and Remembrance</td>
<td></td>
</tr>
</tbody>
</table>

**Theoretical Perspectives**

These courses focus on theories of war, peace, and security across a broad range of contemporary and historic cases and through a variety of disciplinary lenses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 610</td>
<td>Advanced Topics in Global Health Security (when the topic is Cyber Warfare Strategy/Policy)</td>
<td></td>
</tr>
<tr>
<td>CONF 751</td>
<td>Dynamics of Civil Wars</td>
<td></td>
</tr>
<tr>
<td>GGS 590</td>
<td>Selected Topics in Geography (when the topic is Military Geography or Insurgency)</td>
<td></td>
</tr>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td></td>
</tr>
<tr>
<td>GOVT 745</td>
<td>International Security</td>
<td></td>
</tr>
<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government (when the topic is Intelligence and Public Policy, Disruptive Technology and National Security, or Information Intelligence and Smart Power)</td>
<td></td>
</tr>
<tr>
<td>PUBP 504</td>
<td>Grand Strategy</td>
<td></td>
</tr>
<tr>
<td>PUBP 506</td>
<td>Ethics and the Use of Force</td>
<td></td>
</tr>
</tbody>
</table>

**Practical or Applied Perspectives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBUS 551</td>
<td>Leadership</td>
<td></td>
</tr>
<tr>
<td>MAIS 795</td>
<td>Experiential Learning (or another graduate-level internship or practicum course chosen in consultation with the concentration head.)</td>
<td>1</td>
</tr>
</tbody>
</table>

1 Students seek out and/or create an opportunity for experiential learning that aligns with their educational or professional interests. Experiential learning opportunities can include internships, service-learning, consulting projects, or field studies. Because the intention is to develop and apply newly acquired skills, students may not use work done previously or their current employment to fulfill this requirement. All experiential learning projects must be approved by the war and the military in society concentration head the semester before registering for the course.

**Research Methods**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLOA 605</td>
<td>Interdisciplinary Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History</td>
<td></td>
</tr>
</tbody>
</table>
Concentration in Women and Gender Studies (WGST)

The concentration in women and gender studies promotes advanced scholarship that transcends traditional boundaries. Students combine required coursework in women and gender studies with courses in a discipline of interest such as history, literature, sociology, anthropology, health, education, philosophy, social work, conflict analysis and resolution, or the arts. The program accommodates both full-time and part-time students.

Of the coursework required for this concentration as described below, at least 24 credits must be in courses related to the study of women and gender and 12 credits in courses in a field focus. All courses related to the study of women and gender must be approved by the head of the concentration in women and gender studies. Students must earn a grade of B- or higher in the core courses.

Students interested in pursuing a dual master’s program linking the MAIS degree and a master’s degree in another discipline should discuss their interest with the graduate program directors of both programs and review the university policies regarding Individualized Dual Master’s Degree Programs. Students approved to pursue dual master’s study linking the MAIS degree with a concentration in women and gender studies and the MA philosophy degree will complete WMST 630 Feminist Theories across the Disciplines/PHIL 658 Feminist Theory and 3 additional credits of WMST courses to apply to the philosophy degree as elective credit. Six credits of approved PHIL credits will apply to the MAIS degree as elective credit.

Students may take additional courses from these areas and count them toward their elective credits.

When topic is Black Psychology, Gender, Cultures and Health in the US, Race, Gender, Class, and Sport, or Policing Black Bodies.

When topic is Gender, Race, Reform 1800-1920 or Gender and Racial Ideology in Jim Crow.

When topic is Gender, Sexuality and Disability.

Electives

Students take 15-18 credits in elective courses that address the study of women and gender and that are not part of the core focus. Three of these credits must be in a WMST course from the list below.

WMST 505 Social Dynamics of Family Violence
WMST 506 Gender and Violence in Social Institutions
WMST 507 Transnational Sexualities
WMST 508 Gender, Sexuality, and Human Rights
WMST 509 Gender, Sexuality, and International Migration
WMST 550 Current Topics in Women and Gender Studies
WMST 600 Special Topics
WMST 602 Queer Theory
WMST 611 Feminist Research Practice (not required but highly recommended)
WMST 695 Internship

Total Credits 15-18

1 Students may take other WMST course chosen in consultation with the concentration head. Students may also take relevant courses from other disciplines chosen in consultation with the concentration head.

Proposal

Students take one course from each of the following areas.

WMST 610 Feminist Approaches to Social Research
WMST 640 Transnational and Global Feminisms

Total Credits 3

1 Students take one course from each of the following areas.
### Project or Thesis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 798</td>
<td>Interdisciplinary Studies Project (take 1 credit)</td>
<td>1-4</td>
</tr>
<tr>
<td>MAIS 799</td>
<td>Interdisciplinary Studies Thesis (take 4 credits)</td>
<td>1-4</td>
</tr>
</tbody>
</table>

**Total Credits**: 1-4

### Individualized Concentration (IND)

This concentration is for students who wish to design a graduate program to meet the special needs of their careers and life plans. Students usually choose this option because traditional graduate programs do not meet their specific goals. Students, with help from their faculty advisor, design a unique program of study that includes courses from several academic departments.

Students have access to most graduate courses offered by Mason but must meet all course prerequisites. Each student must submit a curriculum worksheet approved by the student’s advisor and director during the first semester enrolled. Any subsequent amendments must have the approval of the student’s advisor and the director.

### Required Course of Proseminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 796</td>
<td>MAIS ProSeminar</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Credits**: 1

### Disciplinary Focus

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select a minimum of 12 and a maximum of 18 credits in one discipline</td>
<td>12-18</td>
</tr>
</tbody>
</table>

**Total Credits**: 12-18

### Complementary Disciplines

Students take 9-18 courses in complementary disciplines. These require the approval of faculty advisor and MAIS director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>9-18</td>
</tr>
</tbody>
</table>

**Total Credits**: 9-18

### Research Methods

Students take a research methods course approved by faculty advisor and MAIS director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
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</tbody>
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**Total Credits**: 3

### Proposal

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>MAIS 797</td>
<td>Interdisciplinary Studies Proposal</td>
<td>1</td>
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</tbody>
</table>

**Total Credits**: 1

### Project or Thesis

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIS 798</td>
<td>Interdisciplinary Studies Project (take 1 credit)</td>
<td>1-4</td>
</tr>
</tbody>
</table>

**Total Credits**: 1-4

### Dual Degree Options

#### Philosophy, MA and Interdisciplinary Studies, MAIS Dual Degree

Students interested in pursuing a dual master’s program linking philosophy and another discipline should discuss their interest with the graduate program directors of both programs and review the university policies regarding Individualized Dual Master’s Degree Programs. Students approved to pursue dual master’s study linking the MA philosophy degree and the Interdisciplinary Studies, MAIS with a concentration in women and gender studies will complete WMST 630 Feminist Theories across the Disciplines/PHIL 658 Feminist Theory and 3 additional credits of WMST courses approved by the Department of Philosophy to apply to the philosophy degree as elective credit. Six credits of approved PHIL credits will apply to the MAIS degree as elective credit. Application to the second master’s program should be pursued with consultation of the directors of both programs. Admission to the second master’s program will require that the student has met the minimum prerequisites for admission to the second program. If a student lacks the minimum prerequisites and seeks to be admitted to a second master’s program, the director of the second program may identify ways in which the prerequisite can be completed prior to admission.

### Accelerated Master's

#### Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)

**Overview**

Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master's in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP.6.7 Bachelor's/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Selected Majors**

- Art history (p. 394)
- Philosophy (p. 442)
- Conflict analysis and resolution (p. 936)
- Global affairs (p. 523)
- History (p. 402)
- Religious studies (p. 491)
- Russian and Eurasian studies (p. 568)
Interdisciplinary Pathways in the Study of Religion and the Natural Environment

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious studies (p. 496).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/LA-MAIS-ISIN/application).

Accelerated Option Requirements

While undergraduate students, accelerated master's students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td>6</td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td>6</td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td>6</td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td>6</td>
</tr>
</tbody>
</table>

Select two from the following:

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td>6</td>
</tr>
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<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td>6</td>
</tr>
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<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td>6</td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td>6</td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td>6</td>
</tr>
</tbody>
</table>

Select 6 credits from the following:

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Bachelor's Degree (any)/Interdisciplinary Studies, Accelerated MAIS (Social Entrepreneurship Concentration)

Overview

Highly-qualified undergraduates in any major may apply to the accelerated master’s degree in interdisciplinary studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in social entrepreneurship after satisfactory completion of 150 credits, sometimes within five years. For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to this program, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/LA-MAIS-ISIN/application) on the departmental website.

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete INTS 550 Social Innovation In Action and INTS 535 Leadership in a Changing Environment or one course chosen from the list of electives for the MAIS concentration in social entrepreneurship as indicated on their Accelerated Master’s Program Application, with a minimum grade of 3.00 in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Recommended Majors

The accelerated MAIS in Social Entrepreneurship is appropriate for a number of undergraduate majors including but not limited to:
• Business and Sustainability
• Childhood Studies
• Community Health
• Conflict Analysis and Resolution
• Environmental and Sustainability Studies
• Global Affairs
• Government
• Integrative Studies (e.g., Social Innovation; Leadership & Organizational Development)
• Management
• Psychology
• Public Administration
• Social Work
• Sociology

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social entrepreneurship). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79) for more information.

Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

Overview
Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master's degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master’s in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Selected Majors
Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)

Overview
Highly-qualified undergraduates in select majors may apply to the accelerated master's degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in women and gender
the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Bachelor's Degree (any)/Interdisciplinary Studies, Accelerated MAIS (Energy and Sustainability Concentration)**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated master's degree in interdisciplinary studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor's degree in their chosen major and a master's degree in interdisciplinary studies with a concentration in energy and sustainability after satisfactory completion of 150 credits, sometimes within five years. For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
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</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with
Recommended Majors
Anthropology, chemistry, economics, environmental and sustainability studies, integrative studies, global affairs, mathematics, physics, sociology, and relevant concentrations in the Bachelor of Individualized Study (BIS) degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
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<tr>
<td>ECON 695</td>
<td>Special Topics in Economics (when topic involves environmental or sustainability issues)</td>
<td>6</td>
</tr>
<tr>
<td>EVPP 533</td>
<td>Energy Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 642</td>
<td>Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>GLOA 605</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>GGS 507</td>
<td>Interdisciplinary Research Methods</td>
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</tr>
<tr>
<td>PHIL 643</td>
<td>Environmental Ethics</td>
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</tr>
<tr>
<td>PHYS 581</td>
<td>Topics in Renewable Energy</td>
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</tbody>
</table>

Total Credits: 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79) for more information.

Bachelor’s Degree (any)/Interdisciplinary Studies, Accelerated MAIS (Folklore Studies Concentration)

Overview
Highly-qualified undergraduates in any major may apply to the accelerated master’s degree in interdisciplinary studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in folklore studies after satisfactory completion of 150 credits, sometimes within five years. For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (https://catalog.gmu.edu/admissions/graduate-policies). For information specific to this program, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/LA-MAIS-ISIN/application) on the departmental website.

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete six credits of ENGH 591 Topics in Folklore Studies with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 590</td>
<td>Topics in Folk Narrative</td>
<td>6</td>
</tr>
<tr>
<td>ENGH 591</td>
<td>Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 681</td>
<td>Advanced Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History</td>
<td></td>
</tr>
<tr>
<td>SOCI 634</td>
<td>Qualitative Research Methods</td>
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</tbody>
</table>

Total Credits: 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (https://catalog.gmu.edu/policies/academic/registration-attendance/#ap-1-4-4) for more information.

Bachelor’s Degree (any)/Interdisciplinary Studies, Accelerated MAIS (War and the Military in Society Concentration)

Overview
Highly-qualified undergraduates in any major may apply to the accelerated master’s degree in interdisciplinary studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in war and the military in society after satisfactory completion of 150 credits, sometimes within five years. For more detailed information, see AP6.7 Bachelor’s/ Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).
Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to this program, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/LA-MAIS-ISIN/application) on the departmental website.

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete one course from the historical perspectives list and one course from any of the other perspectives that fulfill the war and the military in society concentration requirements, as indicated on their Accelerated Master’s Program Application, with a minimum grade of 3.00 in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Recommended Majors
The accelerated MAIS in war and the military in society is appropriate for a number of undergraduate majors including but not limited to:

• Conflict Analysis and Resolution
• Criminology, Law and Society
• Economics
• Global Affairs
• Government and International Politics
• History
• Integrative Studies (concentrations in international studies, social justice and human rights, and women and gender studies)

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in war and the military in society). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79) for more information.

Latin American Studies Program
Email: las@gmu.edu
Website: las.gmu.edu

Faculty

Program Faculty
Berroa (Modern and Classical Languages), Bristol (History and Art History), Burt (Schar School of Policy and Government), Greet (History and Art History), Karush (History and Art History), Leeman (Modern and Classical Languages), Lepore (Dance), Meyer (Economics), Rabin (Modern and Classical Languages), Rogers (Modern and Classical Languages), Shutika (English), Vivancos-Pérez (Modern and Classical Languages)

Programs

• Latin American Studies Minor
• Latin American Studies, BA

Latin American Studies, BA
Banner Code: LA-BA-LAS
Email: las@gmu.edu
Website: las.gmu.edu/programs/LA-BA-LAS

This program is no longer accepting applications for new students.

The BA in Latin American studies looks at contemporary Latin America and its progress through a long and turbulent history of conquest, resistance, and cultural mixing. The result is a rich and unique blend of African, indigenous, and European cultures. Majors develop a broad expertise in the region while also pursuing an individualized program of study that suits their interests. Students improve their language skills and take courses in many disciplines, including anthropology, dance, economics, folklore, geography, government, history, and literature. All students have opportunities for research, global engagement, public service, and career preparation.

Admissions & Policies

Policies

Students pursuing this degree must complete 33 credits within the major, with a minimum GPA of 2.00.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

Requirements

This program is no longer accepting applications for new students.

Degree Requirements
Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 558) tab.
### Core Courses in the Major

#### Required Introductory Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>LAS 300</td>
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</tr>
</tbody>
</table>

**Total Credits:** 3

#### Required Courses in History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
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</tbody>
</table>

**Total Credits:** 6

#### Social Science Courses Related to Latin America

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GOVT 331</td>
<td>Government and Politics of Latin America</td>
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</tbody>
</table>

**Total Credits:** 6

#### Humanities Course Related to Latin America

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGH 315</td>
<td>Folklore and Folklife</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 322</td>
<td>Introduction to Latin American Culture (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SPAN 325</td>
<td>Major Hispanic Writers (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 3

#### Seminar Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>LAS 499</td>
<td>Research Seminar in Latin American Studies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 3

### Language Requirement

All Latin American studies majors must demonstrate reading, speaking, or writing knowledge of Spanish or Portuguese by exam or achieving a minimum grade of 2.00 in a 300-level course in the language selected. Upper-level Latin American literature or culture courses taught in Spanish or Portuguese may be used to satisfy the electives requirement.

### Electives in Latin American Studies

Select four electives in Latin American studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

**Total Credits:** 12

Students may satisfy the electives requirement with any course that contains a significant emphasis on Latin America or the culture, politics, sociology, or history of Latinos living in the United States. In addition, students are strongly encouraged to use an internship (LAS 490) or a study-abroad program to fulfill some of these credits. The electives must be approved by the director of the program. Upper-level Latin American literature or culture courses taught in Spanish or Portuguese may be used to satisfy the electives requirement.

### Writing-Intensive Requirement

The university requires all students to complete at least one course designated "writing intensive" in their major at the 300 level or above. Students majoring in Latin American studies should consult with the director for a course to fulfill this requirement.

### Upper Level Requirement

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

### Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

### College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core requirements or requirements for the major).

#### Philosophy or Religious Studies

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL</td>
<td>Classical Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>PHIL</td>
<td>Modern Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL</td>
<td>Contemporary Western Political Theory</td>
<td></td>
</tr>
<tr>
<td>PHIL</td>
<td>Humanities College to Career</td>
<td></td>
</tr>
<tr>
<td>PHIL</td>
<td>Senior Seminar in Philosophy, Politics, and Economics</td>
<td></td>
</tr>
<tr>
<td>RELI</td>
<td>Religion and Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Note that the following courses may not be used to fulfill this requirement:

- PHIL 323
- PHIL 324
- PHIL 327
- PHIL 393
- PHIL 460
- PHIL 253 Philosophy and Literature (Mason Core) (p. 142)
- RELI 235 Religion and Literature (Mason Core) (p. 142)

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

#### Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td>(p. 1212)</td>
<td></td>
</tr>
<tr>
<td>CRIM</td>
<td>(p. 1514)</td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td></td>
</tr>
</tbody>
</table>

1. Students may satisfy the electives requirement with any course that contains a significant emphasis on Latin America or the culture, politics, sociology, or history of Latinos living in the United States. In addition, students are strongly encouraged to use an internship (LAS 490) or a study-abroad program to fulfill some of these credits. The electives must be approved by the director of the program. Upper-level Latin American literature or culture courses taught in Spanish or Portuguese may be used to satisfy the electives requirement.

2. Note that the following courses may not be used to fulfill this requirement:

   - PHIL 323
   - PHIL 324
   - PHIL 327
   - PHIL 393
   - PHIL 460
   - PHIL 253 Philosophy and Literature (Mason Core) (p. 142)
   - RELI 235 Religion and Literature (Mason Core) (p. 142)

3. Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.
Or choose from the following GGS courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
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<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
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</tbody>
</table>

The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

Foreign Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intermediate-level proficiency in one foreign language, fulfilled by: ¹</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or completing the following ASL three course sequence:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDSE 115 American Sign Language (ASL) I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDSE 116 American Sign Language (ASL) II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDSE 219 American Sign Language (ASL) III</td>
<td></td>
</tr>
</tbody>
</table>

¹ Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td></td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 314</td>
<td>Zombies</td>
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<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
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<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
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<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
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<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
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<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
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<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
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<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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<td>DANC 118</td>
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<td>Economic Development of Latin America (Mason Core)</td>
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<td>African Economic Development (Mason Core)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>Topics in Caribbean Francophone Literature and Culture</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
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</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
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<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
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<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<td>HIST 326</td>
<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
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<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
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<td>HIST 353</td>
<td>History of Traditional China</td>
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<td>Modern China (Mason Core) (p. 142)</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
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<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
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<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
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<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>3</td>
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<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td>3</td>
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<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
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<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
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<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
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<td>KORE 320</td>
<td>Korean Popular Culture in a Global World (Mason Core) (p. 142)</td>
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<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
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<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
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<tr>
<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
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<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
</tr>
<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
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<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
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</tr>
<tr>
<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
<td>3</td>
</tr>
<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 375</td>
<td>Qur'an and Hadith</td>
<td>3</td>
</tr>
<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
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<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.
Latin American Studies Minor

Foundation Requirements

- Written Communication (ENGH 101) (p. 142) 3
- Oral Communication (p. 142) 3
- Quantitative Reasoning (p. 143) 3
- Information Technology and Computing (p. 143) 3

Exploration Requirements

- Arts (p. 144) 3
- Global Understanding (p. 146) 3
- Literature (p. 147) 3
- Natural Science (p. 148) 7
- Social and Behavioral Sciences (p. 150) 3
- Western Civilization/World History (p. 151) 3

Integration Requirements

- Written Communications (ENGH 302) (p. 142) 3
- Writing-Intensive (p. 151) 3
- Synthesis/Capstone (p. 153) 3

Total Credits: 40

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2. Minimum 3 credits required.

Honors

This program is no longer accepting applications for new students.

Honors in the Major

Latin American studies majors who have completed 75 credits (a minimum of 15 in Latin American studies, 6 of which must have been taken at Mason) with an overall minimum GPA of 3.50 and a minimum GPA of 3.50 in the major may apply to pursue advanced work leading to graduation with honors in the major. The application consists of a transcript, a recommendation from one member of the LAS faculty, and a brief description of a proposed research project.

Once accepted into the program, students pursuing honors in the major complete a two-course sequence LAS 491 and LAS 499 Research Seminar in Latin American Studies (Mason Core) (p. 142) (an honors section), which must be taken in successive semesters. In this sequence, students complete an advanced research project under the guidance of a faculty member. To graduate with honors in the major, students must earn a minimum GPA of 3.50 in the honors courses.

Latin American Studies Minor

Banner Code: LAS

Academic Advising

Email: las@gmu.edu
Website: las.gmu.edu/programs/la-minor-la-las/requirements/

Latin American studies focuses on the diverse and connected regions, societies, and cultures of Latin America. Students find that combining this minor with a major in another discipline is particularly attractive to employers. Latin American studies enhances a major in Spanish or anthropology for a career in teaching or human rights work; a major in communication for a career in journalism; and a major in business for a career in the U.S. Foreign Service, other government agencies, or international commerce.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.S.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 562) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 331</td>
<td>Government and Politics of Latin America</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

Language Proficiency

Students minoring in Latin American studies must demonstrate reading, speaking, or writing knowledge of Spanish or Portuguese by exam or by achieving a minimum grade of 2.00 in a 300-level course in the language selected. Upper-level Latin American literature or culture courses taught in Spanish or Portuguese may be used to satisfy the electives requirement.

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select five electives 1</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

1. Students may satisfy the electives with any course that contains a significant emphasis on Latin America or the culture, politics, sociology, or history of Latinos living in the United States. Students choose electives from courses offered by at least three different departments in consultation with the program director. Upper-level Latin American literature or culture courses taught in Spanish or Portuguese may be used to satisfy the requirement.

Middle East and Islamic Studies Program

Email: meis@gmu.edu
Website: meis.gmu.edu
The interdisciplinary program in Middle East and Islamic Studies offers a distinctive and innovative approach to the study of the Middle East, of Islam, and of Muslim societies across the globe. The program seeks to situate the study of the Middle East and Islam within a globalized world. Students develop a broad understanding of the region, its history and its contemporary complexities with respect to society, politics, culture, and economy.

The Middle East and Islamic Studies Program comprises four distinct curricula; a master's program in Middle East and Islamic studies (MEIS), a graduate certificate program, and two undergraduate minor programs (Middle East studies and Islamic studies). Because these programs are interdisciplinary, undergraduate and graduate students may take courses from a range of disciplines to fulfill minor, graduate degree or certificate requirements. Undergraduate students should consult the specific listing, Middle East Studies minor (p. 564) or Islamic Studies minor (p. 563) for more details. Graduate students should consult with the MEIS director.

Undergraduate Program

Minors
The Middle East and Islamic Studies Program offers two minors for undergraduates.

The Middle East Studies minor provides students with a firm grounding in the history, politics, and culture of this important region. Students develop an understanding of the diverse dynamics and complex forces that shape modern Middle East realities.

The Islamic Studies minor introduces students to the diverse and dynamic experience of Muslims globally and locally. Through interdisciplinary course offerings, students acquire an understanding of Islamic religious traditions, history, politics, society and culture. A three-credit course is also required in a language spoken in a Muslim majority country (Arabic, Persian, Turkish).

Graduate Program

Master's Degree
The program offers a master's degree in Middle East and Islamic studies. Students study historical and contemporary topics - as well as theory and methodology - from regional and global perspectives. The unique interdisciplinary nature of the program provides students with a thorough foundation in the major debates and issues in the study of the Middle East, of Islam, and of Muslim societies across the globe.

Graduate Certificate
The graduate certificate in Middle East and Islamic studies allows students to examine the complex issues involved in understanding the Middle East and the broader Islamic world from a variety of perspectives. Students study both contemporary and historical developments in these regions; they take courses in various disciplines, including political science, history, and religious studies, and have the opportunity to take elective courses in an even broader set of disciplines, including sociology, anthropology, literature, and art history.

Bachelor's/ Accelerated Master's Program
Highly qualified undergraduates in any major may apply to the accelerated master's degree program in Middle East and Islamic studies (p. 567). If accepted, students will be able to earn an undergraduate degree in their chosen major and a graduate degree in Middle East and Islamic studies after satisfactory completion of 144 credits, generally within five years. Credit limits and course requirements require advanced planning and consultation with the student’s undergraduate advisor and MEIS director.

Ali Vural Ak Center for Global Islamic Studies
web: islamicstudiescenter.gmu.edu (http://islamicstudiescenter.gmu.edu)
The Ali Vural Ak Center for Global Islamic Studies is an interdisciplinary research center whose goal is to provide a sound and nuanced understanding of Muslim societies and the Islamic faith, its role in world history and patterns of globalization. The center regularly sponsors lectures and conferences, runs major research projects and hosts international scholars. The center supports the academic curriculum through its on-campus and off-campus activities.

Middle East Studies
web: meis.gmu.edu (http://meis.gmu.edu)
The interdisciplinary Middle East Studies program at George Mason provides students with a firm grounding in the history, politics, and culture of this important region. Under the guidance of internationally recognized faculty, students develop an understanding of the diverse dynamics and complex forces that shape modern Middle East realities. Students have the opportunity to examine new Middle East diasporas and transnational communities in the West, as well as the role of the Middle East in a changing geopolitical environment marked by the rise of China, India and the re-emergence of Russia.

Faculty

Program Faculty
Core
Dakake, Haddad (director), Hamdani, McGlinchey, Mandaville, Sachedina (IIIT chair), Yilmaz

Affiliate
Amireh, Butt, DeCaroli, Dwyer, Hirsch, Hughes Rinker

Programs

Islamic Studies Minor
Banner Code: ISLM
Academic Advising
B445 Robinson Hall
Fairfax Campus
Email: mes@gmu.edu
Website: meis.gmu.edu/programs/la-minor-la-islm

The minor is designed for students interested in the societies, cultures, history, and politics of the Islamic world. It offers students the
opportunity to study the many societies that have significant Muslim populations. These societies are not just in the Middle East. They stretch from North Africa to Southeast Asia and beyond, including Europe as well as North America. To fulfill the requirements for the minor, students take a wide variety of courses from a range of departments. These courses provide students with a broad and well-rounded understanding of Islam.

The minor will enhance students’ opportunities for future study and employment, especially in the Washington, D.C. area.

### Faculty
Amireh, Bakhash, Dakake (director), DeCaroli, Haddad, Hamdani, Katz, Lukacs, Mandaville, McGlinchey, Paden, Salawdeh

### Admissions & Policies

#### Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements
Total credits: 21

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 564) tab.

#### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

#### Foreign Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one course in a foreign language of any country with a significant Muslim population</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

1 Arabic may be used to fulfill this requirement, but other languages of the Islamic world may be substituted with prior written approval of the director. This requirement may be waived for students who can demonstrate proficiency in a relevant foreign language. Contact the college Office of Undergraduate Affairs (http://chssundergrad.gmu.edu). Such students will be required to take 3 additional elective credits.

#### Electives

Select three electives from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td></td>
</tr>
<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

1 Special topics courses, when relevant, may be used to fulfill this requirement with prior written approval of the director.

### Middle East Studies Minor

#### Banner Code: MES

#### Academic Advising

347 Research Hall
Fairfax Campus

Email: mes@gmu.edu
Website: meis.gmu.edu/programs/la-minor-la-mes

Today, more than ever before, Middle East politics have become intertwined with American politics and the lives of many Americans. The minor is designed to equip undergraduates with a firm multidisciplinary grounding in the region, its history, and its international relations.

#### Faculty
Amireh, Bakhash, Bryant, Dakake, Gopin, Haddad (director), Hamdani, Katz, Lukacs, Mandaville, Paczynska, Rouhana, Salawdeh
Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 565) tab.

In partial fulfillment of coursework for the minor, students are strongly encouraged to participate in a study abroad program in the Middle East.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

Electives

Select four electives from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAB 325</td>
<td>Major Arab Writers/Stories (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 330</td>
<td>Reading and Conversation I</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 331</td>
<td>Reading and Conversation II</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western (if region studied is relevant to Middle East studies)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONF 340</td>
<td>Global Conflict Analysis and Resolution (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core) (if literatures studied are relevant to Middle East studies) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 445</td>
<td>Human Rights</td>
<td>3</td>
</tr>
<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142) (if region studied is relevant to Middle East studies)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 12

1 One course in a relevant language may be used as an elective. Other courses including ANTH 399 Issues in Anthropology or CONF 399 Special Topics in Conflict Analysis and Resolution, when topic is relevant to the Middle East, may be used as electives with the prior written approval of the director.

Middle East and Islamic Studies, MA

Banner Code: LA-MA-MEIS

Academic Advising

D215 Buchanan Hall
Fairfax Campus

Email: meis@gmu.edu
Website: meis.gmu.edu/programs/la-ma-meis

The master of arts in Middle East and Islamic Studies introduces students to the major methodological and theoretical issues and debates in the study of the Islamic tradition and of Middle Eastern societies. The program situates the study of the Middle East and Islam within a globalized world. The curriculum covers topics of recent scholarly significance including political Islam, the political economy of business-government networks, the relationship between "resource wars" and the "war on terrorism," new diasporas and transnational Muslim communities in the "West," and the changed geopolitical environments of Muslim and Middle Eastern countries. The degree prepares students for a variety of post-graduate opportunities in academia, government, and an expanding job market for people with this expertise.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For specific information, see Application Requirements and Deadlines (https://meis.gmu.edu/programs/la-ma-meis/application) on the departmental website.

Policies

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).
Requirements

Degree Requirements
Total credits: 30

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEIS 500</td>
<td>Critical Issues and Debates in Middle East and Islamic Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST 575</td>
<td>Approaches to Middle East and Islamic History</td>
<td>3</td>
</tr>
<tr>
<td>RELI 644</td>
<td>Islamic Texts and Contexts</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 632</td>
<td>Politics and Societies of the Middle East</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one methods course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 650</td>
<td>Methods in Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>GLOA 605</td>
<td>Interdisciplinary Research Methods</td>
<td></td>
</tr>
<tr>
<td>GOVT 500</td>
<td>The Scientific Method and Research Design</td>
<td></td>
</tr>
<tr>
<td>HIST 610</td>
<td>The Study and Writing of History</td>
<td></td>
</tr>
<tr>
<td>SOCI 620</td>
<td>Methods and Logic of Social Inquiry</td>
<td></td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

Language Proficiency
Prior to graduating, students must demonstrate professional competency in one of five major languages of the Middle East and Muslim world: Arabic, Persian, Turkish, Hebrew, or Urdu.

A waiver for this requirement may be received either through 1) documentation verifying primary language of instruction at either the high school or university level in respective foreign language; transcripts showing coursework at the advanced level in respective foreign language or 2) an examination with an appropriate faculty/examiner designated by the director in consultation with the program's steering committee.

Electives

In addition to the following list, electives may include special topics courses when relevant, directed readings and research, study abroad courses, internships, and other courses with the approval of the program director. Students who choose to complete a research project or write a thesis take 3 or 6 fewer elective credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 635</td>
<td>Regional Ethnography (when topic is Middle East and North Africa)</td>
<td></td>
</tr>
<tr>
<td>ARTH 599</td>
<td>Special Topics in Art History and the Decorative Arts (when topic is Middle Eastern or Islamic art)</td>
<td></td>
</tr>
<tr>
<td>ARTH 699</td>
<td>Topics in Art History (when topic is Middle East or Islamic art)</td>
<td></td>
</tr>
<tr>
<td>CONF 653</td>
<td>World Religions, Diplomacy, and Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 722</td>
<td>Conflict and Religion</td>
<td></td>
</tr>
<tr>
<td>ENGH 591</td>
<td>Topics in Folklore Studies</td>
<td></td>
</tr>
<tr>
<td>ENGH 665</td>
<td>Seminar in Global Culture (when topic is Middle East or Muslim world)</td>
<td></td>
</tr>
<tr>
<td>FREN 553</td>
<td>Topics in North African Francophone Literature and Culture</td>
<td></td>
</tr>
<tr>
<td>FRLN 550</td>
<td>Special Topics (when topic is a language of the Middle East or Muslim world)</td>
<td></td>
</tr>
<tr>
<td>FRLN 551</td>
<td>Special Topics (when topic is a language of the Middle East or Muslim world)</td>
<td></td>
</tr>
<tr>
<td>GGS 533</td>
<td>Issues in Regional Geography (when topic is Middle East)</td>
<td></td>
</tr>
<tr>
<td>GOVT 731</td>
<td>Advanced Seminar in Comparative Politics (when topic is the Middle East or a Muslim world region)</td>
<td></td>
</tr>
<tr>
<td>GOVT 733</td>
<td>Islam and Politics</td>
<td></td>
</tr>
<tr>
<td>HIST 535</td>
<td>Problems in Comparative World History</td>
<td></td>
</tr>
<tr>
<td>HIST 585</td>
<td>Problems in Middle Eastern History</td>
<td></td>
</tr>
<tr>
<td>MEIS 794</td>
<td>Graduate Internship in Middle East and Islamic Studies</td>
<td></td>
</tr>
<tr>
<td>MEIS 796</td>
<td>Directed Readings in Middle East and Islamic Studies</td>
<td></td>
</tr>
<tr>
<td>MEIS 799</td>
<td>Issues in Middle East and Islamic Studies</td>
<td></td>
</tr>
<tr>
<td>RELI 591</td>
<td>Special Topics in Religious Studies (when topic is Islam or Muslim communities)</td>
<td></td>
</tr>
<tr>
<td>RELI 645</td>
<td>Muslim Comparative Theologies: Sunni-Shi`i Religious Thought</td>
<td></td>
</tr>
<tr>
<td>RELI 646</td>
<td>Islam and Human Rights</td>
<td></td>
</tr>
<tr>
<td>RELI 660</td>
<td>Islamic Biomedical Ethics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

Optional Research Project or Thesis

Research Project

Students choosing to complete a research project take one of the following courses, and one less elective.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 798</td>
<td>Political Science Research Project</td>
<td>3</td>
</tr>
<tr>
<td>HIST 798</td>
<td>Directed Research and Writing in History</td>
<td></td>
</tr>
<tr>
<td>SOCI 696</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>ANTH 796</td>
<td>Master's Research Project</td>
<td></td>
</tr>
<tr>
<td>MEIS 798</td>
<td>Research Project in Middle East and Islamic Studies</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Thesis

Students who choose to write a thesis should be aware of the policies governing theses as stated in AP.6.9.3 Master’s Thesis (p. 95). They must follow the thesis enrollment policy of the university and once enrolled in MEIS 799 Thesis Research and Writing in Middle East and Islamic Studies, maintain continuous enrollment.

Students choosing to complete a thesis take 6 fewer credits of electives.
Accelerated Master’s

Bachelor’s Degree (any)/Middle East and Islamic Studies, Accelerated MA

Overview
Highly-qualified undergraduates pursuing a BA may apply to the accelerated master’s degree in Middle East and Islamic studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in Middle East and Islamic studies after satisfactory completion of 144 credits, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MA in Middle East and Islamic studies, see Application Requirements and Deadlines (http://meis.gmu.edu/programs/la-acel-meis).

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEIS 500</td>
<td>Critical Issues and Debates in Middle East and Islamic Studies</td>
<td>6</td>
</tr>
<tr>
<td>HIST 575</td>
<td>Approaches to Middle East and Islamic History</td>
<td>6</td>
</tr>
<tr>
<td>GOVT 731</td>
<td>Advanced Seminar in Comparative Politics (when content focus is the Middle East)</td>
<td>6</td>
</tr>
<tr>
<td>GOVT 733</td>
<td>Islam and Politics</td>
<td>6</td>
</tr>
<tr>
<td>MEIS 599</td>
<td>Issues in Middle East and Islamic Studies</td>
<td>6</td>
</tr>
<tr>
<td>RELI 644</td>
<td>Islamic Texts and Contexts</td>
<td>6</td>
</tr>
</tbody>
</table>

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEIS 500</td>
<td>Critical Issues and Debates in Middle East and Islamic Studies</td>
<td>6</td>
</tr>
<tr>
<td>HIST 575</td>
<td>Approaches to Middle East and Islamic History</td>
<td>6</td>
</tr>
<tr>
<td>GOVT 731</td>
<td>Advanced Seminar in Comparative Politics (when content focus is the Middle East)</td>
<td>6</td>
</tr>
<tr>
<td>GOVT 733</td>
<td>Islam and Politics</td>
<td>6</td>
</tr>
<tr>
<td>MEIS 599</td>
<td>Issues in Middle East and Islamic Studies</td>
<td>6</td>
</tr>
<tr>
<td>RELI 644</td>
<td>Islamic Texts and Contexts</td>
<td>6</td>
</tr>
</tbody>
</table>

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Middle East and Islamic Studies Graduate Certificate

Banner Code: LA-CERG-MEIS

Academic Advising
347 Research Hall
Fairfax Campus
Email: mes@gmu.edu
Website: meis.gmu.edu/programs/LA-CERG-MEIS

The graduate certificate allows students to examine the complex issues involved in understanding the Middle East and the broader Islamic world from a variety of perspectives. Students study both contemporary and historical developments in these regions; they take core courses in various disciplines, including political science, history, and religious studies, and have the opportunity to take elective courses in an even broader set of disciplines, including sociology, anthropology, literature, and art history.

Admissions & Policies

Admissions
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the graduate certificate in Middle East and Islamic Studies,
see Application Requirements and Deadlines (http://meis.gmu.edu/programs/la-cerg-meis/application).

Requirements

Certificate Requirements

Total credits: 18

This certificate may be pursued on a full- or part-time basis.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEIS 500</td>
<td>Critical Issues and Debates in Middle East and Islamic Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST 575</td>
<td>Approaches to Middle East and Islamic History</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 632</td>
<td>Politics and Societies of the Middle East</td>
<td>3</td>
</tr>
<tr>
<td>RELI 644</td>
<td>Islamic Texts and Contexts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

Electives

Select two electives from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 635</td>
<td>Regional Ethnography</td>
<td>1</td>
</tr>
<tr>
<td>ARTH 599</td>
<td>Special Topics in Art History and the Decorative Arts</td>
<td>2</td>
</tr>
<tr>
<td>ARTH 699</td>
<td>Topics in Art History</td>
<td>2</td>
</tr>
<tr>
<td>CONF 653</td>
<td>World Religions, Diplomacy, and Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 722</td>
<td>Conflict and Religion</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 665</td>
<td>Seminar in Global Culture</td>
<td>3</td>
</tr>
<tr>
<td>FREN 553</td>
<td>Topics in North African Francophone Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>FRLN 550</td>
<td>Special Topics</td>
<td>4</td>
</tr>
<tr>
<td>FRLN 551</td>
<td>Special Topics</td>
<td>4</td>
</tr>
<tr>
<td>GGS 533</td>
<td>Issues in Regional Geography</td>
<td>5</td>
</tr>
<tr>
<td>GOVT 731</td>
<td>Advanced Seminar in Comparative Politics</td>
<td>5</td>
</tr>
<tr>
<td>GOVT 733</td>
<td>Islam and Politics</td>
<td>5</td>
</tr>
<tr>
<td>HIST 585</td>
<td>Problems in Middle Eastern History</td>
<td>5</td>
</tr>
<tr>
<td>MEIS 794</td>
<td>Graduate Internship in Middle East and Islamic Studies</td>
<td>5</td>
</tr>
<tr>
<td>MEIS 796</td>
<td>Directed Readings in Middle East and Islamic Studies</td>
<td>5</td>
</tr>
<tr>
<td>RELI 591</td>
<td>Special Topics in Religious Studies</td>
<td>7</td>
</tr>
<tr>
<td>RELI 645</td>
<td>Muslim Comparative Theologies: Sunni-Shi`i Religious Thought</td>
<td>7</td>
</tr>
<tr>
<td>RELI 646</td>
<td>Islam and Human Rights</td>
<td></td>
</tr>
<tr>
<td>RELI 660</td>
<td>Islamic Biomedical Ethics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

When topic is Middle East.

When topic is Middle East or a Muslim world region.

When topic is Islam or Muslim communities.

Russian and Eurasian Studies Program

Phone: 703-993-1233
Website: russianstudies.gmu.edu

The Russian and Eurasian Studies program brings together experienced Mason faculty who will guide your exploration of this region's culture, gender, class, ethnicity, economy, government, and politics. All majors have the opportunity to study abroad in Moscow or St. Petersburg. They acquire the language skills needed to function successfully in social settings and a variety of careers.

The bachelor of arts degree in Russian and Eurasian studies allows students to choose a concentration in one of three areas:

• Russian language and culture
• Russia studies
• Eurasia studies

Faculty

Program Faculty

Barnes (History and Art History), Bockman (Global Affairs), Boettke (Economics), Guglielmi (Modern and Classical Languages), Katz (Schar School of Policy and Government), Kelly (History and Art History), Korostelina (School for Conflict Analysis and Resolution), Levine (Modern and Classical Languages, director), McGlinchey (Schar School of Policy and Government)

Programs

Russian and Eurasian Studies, BA

Banner Code: LA-BA-REST

Website: russianstudies.gmu.edu/programs/LA-BA-REST

Russian and Eurasian studies majors study the Russian language, spoken worldwide by some 250 million people, while also acquiring a foundational knowledge of the history, culture, literature, politics, sociology, economics, and geography of the region. This degree program is flexible, enabling students to focus their interests in one of three concentrations: Russia studies, Russian language and culture, and Eurasia studies. Russian and Eurasian studies prepares students for a wide range of career options in the private sector, government, and education. All students have opportunities for research, global-engagement, public service, and career preparation.
Admissions & Policies

Policies

Students pursuing this degree must complete 33 credits in one of the concentrations available with a minimum GPA of 2.00.

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 569) tab.

Students pursuing this degree complete the requirements for one of the available concentrations.

Concentrations in the Major

Available Concentrations

- Concentration in Eurasia Studies (EURS) (p. 569)
- Concentration in Russia Studies (RUSS) (p. 569)
- Concentration in Russian Language and Culture (RULC) (p. 571)

Concentration in Eurasia Studies (EURS)
The Eurasia studies concentration is designed to provide students with interdisciplinary training in the study of Eurasia, with special focus on Central Asia and secondarily on Russia/the Soviet Union and Eastern Europe. Students will develop a high degree of competence in the history, politics, and culture of Eurasia and a basic competence in a relevant language.

Russian or Other Eurasian-Related Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two courses of Russian or other Eurasian-related language</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Courses used to meet this requirement may be in the same language that is used to meet the college language requirement, in which case the student needs to complete 6 credits beyond intermediate proficiency (beyond courses numbered 210 at Mason). With the approval of the director, courses used to meet this requirement may be in a Eurasian-related language that was not used to meet the college language requirement at a level approved by the director.

Social Science Courses at the 300- and 400-Level

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two social science courses at the 300- and 400-level</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Courses used to fulfill this requirement must focus primarily on Central Asia and Eurasia and may be in any social science discipline (ANTH, ECON, GGS, GOVT, SOCI).

Concentration in Russia Studies (RUSS)
The Russia studies concentration is designed to provide students with in-depth interdisciplinary training in Russia and the Soviet Union. Students will develop a high degree of competence in Russian history.

History Courses at the 300- and 400-Level

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two history courses at the 300- and 400-level</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Courses used to fulfill this requirement must focus primarily on Central Asia and Eurasia.

Literature or Film Courses at the 300- and 400-Level

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two literature or film courses at the 300- and 400-level</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Courses used to fulfill this requirement must be related to Eurasia.

Courses at the 300- and 400-Level

Students choose from courses that focus predominantly on Eurasia. The courses used to meet this requirement may be in any field of study including special topics courses and other courses that deal primarily with the geographic areas covered in the Russian and Eurasian studies major. To use a special topics course or other course with variable content to meet this requirement, students should seek the advanced written approval of the director. (Special topics courses may be repeated for credit when the topic is different.) The following courses when the topic is relevant, among others, may be used to meet this requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three courses at the 300- and 400-level from the following:</td>
<td>9</td>
</tr>
</tbody>
</table>

- ARTH 386 The Silk Road (Mason Core) (p. 142)
- HIST 338 Rise of Russia (Mason Core) (p. 142)
- HIST 339 Modern Russia and the Soviet Union (Mason Core) (p. 142)
- HIST 387 Topics in Global History (Mason Core) (p. 142)
- HIST 388 Topics in European History
- HIST 460 Modern Iran (Mason Core) (p. 142)
- HIST 462 Women in Islamic Society (Mason Core) (p. 142)
- HIST 499 RS: Senior Seminar in History (Mason Core) (p. 142)
- GOVT 338 Government and Politics of Russia
- GOVT 340 Central Asian Politics
- GOVT 345 Islam and Politics
- GOVT 444 Issues in International Studies
- GOVT 447 Revolution and International Politics
- RUSS 470 Topics in (Post) Soviet Film
- GGS 330 Geography of the Soviet Succession States
- ECON 380 Economies in Transition (Mason Core) (p. 142)
- Any 300- or 400-level CONF course (p. 1488)

Total Credits 9
politics, society, and culture as well as a basic competence in the Russian language and the broader Eurasian context.

**Required Language Courses**
Other relevant advanced language courses may be used to fulfill this requirement with the prior written approval of the director. Majors are encouraged to take additional advanced Russian language courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 202</td>
<td>Intermediate Russian II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 380</td>
<td>Advanced Russian I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Russian or Soviet History**
When the topic is relevant, HIST 300 Introduction to Historical Method (Mason Core) (p. 142), HIST 388 Topics in European History, or HIST 499 RS: Senior Seminar in History (Mason Core) (p. 142) may be used to fulfill this requirement with the prior written approval of the director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 326</td>
<td>Stalinism</td>
<td>6</td>
</tr>
<tr>
<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
<td></td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>6</td>
</tr>
</tbody>
</table>

**Social Sciences Dealing Primarily with Russia**
Any topically appropriate courses in any social science discipline (ANTH, ECON, GGS, GOVT, SOCI) may be used to fulfill this requirement with the prior written approval of the director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>6</td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>ECON 380</td>
<td>Economies in Transition (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Russian Literature or Culture**
Other relevant courses may be used to fulfill this requirement with the prior written approval of the director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 310</td>
<td>Readings in Russian Literature</td>
<td>6</td>
</tr>
<tr>
<td>RUSS 311</td>
<td>Contemporary Russian Short Fiction</td>
<td></td>
</tr>
<tr>
<td>RUSS 325</td>
<td>Major Russian Writers (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RUSS 326</td>
<td>A Survey of Russian Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RUSS 327</td>
<td>A Survey of Russian Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Courses at the 300 and 400 Level**
Students choose from courses that focus predominantly on Eastern Europe, Russia, or Central Asia. Courses used to meet this requirement may be in any field of study including special topics courses and other courses that deal primarily with the geographic areas covered in the Russian and Eurasian studies major. To use a special topics course or other course with variable content to meet this requirement, students should seek the advanced written approval of the director. (Special topics courses may be repeated for credit when the topic is different.) Examples of courses that may meet this requirement:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 302</td>
<td>Russian Conversation and Composition</td>
<td>6</td>
</tr>
<tr>
<td>RUSS 303</td>
<td>Russian Advanced Conversation</td>
<td></td>
</tr>
<tr>
<td>RUSS 310</td>
<td>Readings in Russian Literature</td>
<td></td>
</tr>
<tr>
<td>RUSS 311</td>
<td>Contemporary Russian Short Fiction</td>
<td></td>
</tr>
<tr>
<td>RUSS 325</td>
<td>Major Russian Writers (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RUSS 326</td>
<td>A Survey of Russian Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RUSS 327</td>
<td>A Survey of Russian Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>RUSS 381</td>
<td>Advanced Russian II</td>
<td></td>
</tr>
<tr>
<td>RUSS 401</td>
<td>Readings in the Social Sciences</td>
<td></td>
</tr>
<tr>
<td>RUSS 407</td>
<td>Russian Drama and Theater</td>
<td></td>
</tr>
<tr>
<td>RUSS 410</td>
<td>Russian Poetry</td>
<td></td>
</tr>
<tr>
<td>RUSS 470</td>
<td>Topics in (Post) Soviet Film</td>
<td></td>
</tr>
<tr>
<td>RUSS 480</td>
<td>Fourth-Year Russian</td>
<td></td>
</tr>
<tr>
<td>RUSS 481</td>
<td>Fourth-Year Russian</td>
<td></td>
</tr>
<tr>
<td>HIST 300</td>
<td>Introduction to Historical Method (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 312</td>
<td>Nationalism in Eastern Europe</td>
<td></td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 388</td>
<td>Topics in European History</td>
<td></td>
</tr>
<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td></td>
</tr>
<tr>
<td>HIST 499</td>
<td>RS: Senior Seminar in History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>THR 352</td>
<td>Dramatic Literature Seminar</td>
<td></td>
</tr>
<tr>
<td>ECON 380</td>
<td>Economies in Transition (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td></td>
</tr>
<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td></td>
</tr>
</tbody>
</table>
Concentration in Russian Language and Culture (RULC)

Students in the Russian language and culture concentration develop a high degree of competence in Russian language and culture and a basic familiarity with Russian and Eurasian history and politics.

Required Courses in Advanced Russian

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 380</td>
<td>Advanced Russian I</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 381</td>
<td>Advanced Russian II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 480</td>
<td>Fourth-Year Russian</td>
<td>3</td>
</tr>
<tr>
<td>or RUSS 481</td>
<td>Fourth-Year Russian</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Russian Culture or History

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 328</td>
<td>Rise of Russia (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Russian Literature or Cinema in Translation

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 325</td>
<td>Major Russian Writers (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 326</td>
<td>A Survey of Russian Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 327</td>
<td>A Survey of Russian Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 470</td>
<td>Topics in (Post) Soviet Film</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Courses Taught in Russian

Select three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS 302</td>
<td>Russian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 303</td>
<td>Russian Advanced Conversation</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 310</td>
<td>Readings in Russian Literature</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 311</td>
<td>Contemporary Russian Short Fiction</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 401</td>
<td>Readings in the Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 410</td>
<td>Russian Poetry</td>
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</tr>
<tr>
<td>RUSS 481</td>
<td>Fourth-Year Russian</td>
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</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Social Sciences

Students choose from courses dealing with Russia. Any other topically appropriate course in a social science discipline (ANTH, ECON, GGS, GOVT, SOCI) may be used to fulfill this requirement with the prior written approval of the director.

Writing-Intensive Requirement

The university requires all students to complete at least one course designated "writing intensive" in their majors at the 300 level or above. Students majoring in Russian and Eurasian studies may fulfill this requirement by successfully completing RUSS 302 Russian Conversation and Composition, RUSS 325 Major Russian Writers (Mason Core) (p. 142), or RUSS 407 Russian Drama and Theater.

Upper Level Requirement

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core requirements or requirements for the major).

Philosophy or Religious Studies

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL (p. 2044)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RELI (p. 2144)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

1 Note that the following courses may not be used to fulfill this requirement:
- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH (p. 1212)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CRIM (p. 1514)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
ECON (p. 1564)
GOVT (p. 1774)
HIST (p. 1818)
LING (p. 1896)
PSYC (p. 2074)
SOCI (p. 2167)

Or choose from the following GGS courses:

- GGS 101 Major World Regions (Mason Core) (p. 142)
- GGS 103 Human Geography (Mason Core) (p. 142)
- GGS 110 Introduction to Geoinformation Technologies
- GGS 301 Political Geography
- GGS 303 Geography of Resource Conservation (Mason Core) (p. 142)
- GGS 304 Population Geography (Mason Core) (p. 142)
- GGS 305 Economic Geography
- GGS 306 Urban Geography
- GGS 315 Geography of the United States
- GGS 316 Geography of Latin America
- GGS 320 Geography of Europe
- GGS 325 Geography of North Africa and the Middle East
- GGS 330 Geography of the Soviet Succession States
- GGS 357 Urban Planning
- GGS 380 Geography of Virginia

1 The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

2 HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

Non-Western Culture
Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
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<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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</tr>
<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
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<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core)</td>
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</tr>
</tbody>
</table>

Foreign Language Code Title Credits

Intermediate-level proficiency in one foreign language, fulfilled by:

- Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)
- Or achieving a satisfactory score on an approved proficiency test
- Or completing the following ASL three course sequence:

  - EDSE 115 American Sign Language (ASL) I
  - EDSE 116 American Sign Language (ASL) II
  - EDSE 219 American Sign Language (ASL) III

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
<td>3</td>
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<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
<td>3</td>
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<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td>3</td>
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<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td>3</td>
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<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<tr>
<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
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<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
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<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
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<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
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<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 252</td>
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<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 326</td>
<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
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<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
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<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
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<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
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<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
</tr>
<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
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<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>3</td>
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<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
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<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
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<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
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<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
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<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
<td>3</td>
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<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
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<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World (Mason Core)</td>
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<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
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<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
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<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
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<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
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<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
</tr>
<tr>
<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
<td>3</td>
</tr>
<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 375</td>
<td>Qur'an and Hadith</td>
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<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
<td>3</td>
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<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.
### School of Integrative Studies

**Phone:** 703-993-1436  
**Website:** integrative.gmu.edu

### About the School

The School of Integrative Studies (SIS) offers a distinctive experience that addresses contemporary social, global, and environmental challenges. Students connect academic interests with hands-on learning to prepare for a life and career with meaning and impact. Based in the College of Humanities and Social Sciences, SIS focuses on critical and creative thinking, engaged scholarship and diversity in thought. Graduates will lead the way as a new brand of professionals whose understanding of the liberal arts and commitment to a just world can build the cross-sector approaches necessary to solve pressing global, social, and environmental problems.

An integrative, interdisciplinary learning environment, SIS offers the benefits of small, discussion-based courses while providing access to the academic resources of a large public research university. Drawing on its award-winning faculty, SIS provides students with transformative experiential learning opportunities including internships, field and international study, and independent research and service. Both the structure and curriculum of SIS prepare graduates who are engaged, well-rounded scholars who consistently assume leadership roles in the fields of business, law, government, healthcare, education, and the non-profit sector, among others.

### Undergraduate Programs

The School of Integrative Studies offers a bachelor of arts degree in integrative studies, and a bachelor of arts in environmental and sustainability studies (joint degree with Environmental Science and Policy in the College of Science). The school also houses the Bachelor of Individualized Study Program.

The integrative studies curriculum is based on intensive, interdisciplinary learning communities, coordinated with traditional academic programs. The result is an integrated program of study that emphasizes collaboration, experiential learning, and self-reflection. All students complete their degree programs with an interdisciplinary concentration.

The environmental and sustainability studies degree provides students with theoretical and practical knowledge of three aspects of environmental and sustainability studies: people, prosperity, and planet. In addition to required core courses, students develop more in-depth knowledge in one of six concentrations. This degree prepares students for employment and graduate study in fields related to social justice, business and public policy, and environmental protection as they relate to the environment and sustainability.

The bachelor of individualized study (BIS) program is a degree completion program for adult learners. BIS offers students transfer credit options and a distinctive educational opportunity to integrate other college-level learning, such as professional or military experience, into university coursework. Students create interdisciplinary concentrations to meet their own educational needs including to advance professionally, to prepare for graduate or professional programs, or to plan a path toward a career change.

### Transfer Students

The School of Integrative Studies welcomes transfer students from other four-year institutions or community colleges, as well as from other academic units within Mason. Academic advisors work with students to utilize transfer credits and create a plan for timely completion of the bachelor’s degree. All transfer students are required to take INTS 391 Understanding Integrative Studies within their first two semesters and meet with an academic advisor as soon as possible.

### Minor Programs

The School of Integrative Studies offers minors in childhood studies, wellbeing, leadership, multimedia, nonprofit studies, social innovation, and social justice. All are available to students in any major in the university.

The Sustainability Studies Minor (p. 713) is offered jointly by the Department of Environmental Science and Policy and the School of Integrative Studies.

### Centers

The School of Integrative Studies houses Social Action and Integrative Learning (SAIL), which serves all students and faculty in the university.

### Faculty

#### School Faculty Administration

Kelly Dunne, Executive Director  
Misty Krell, Director of Student and Academic Services  
Sara Montiel, Associate Director of Student Services  
Aoi Yamanaka, Associate Director of Academic Services  
Mark Sistek, Advising Director  
Patricia Mathison, Director, Social Action and Integrative Learning (SAIL)
Professor
Garner

Associate Professors
Chen, Eby, Freeman, Gilmore, Lucas, Muir, Owen, Wood, Wingfield, Unruh

Assistant Professors
Erakat, McCarron, Shadur, Van Sant

Term Associate Professor
Fuertes, Manuel-Scott, Thurston

Term Assistant Professors
Dunne, Frye, Lazaroff, Maskell, Spradling, Yamanaka

Adjunct Faculty
Bucy, Cairnie, Chollar, Christ, Gallas, Garland-Jackson, Green, Holder, Imamura, MacDonald, Miles, Parnell, Rose, Stephens, Sweetman, Taft, Teague, Zelensky, Zhang

Affiliate Faculty
Hattery, Lennon

Programs

- Childhood Studies Minor
- Conservation Studies Minor (CHSS)
- Environmental and Sustainability Studies, BA (CHSS)
- Human Development and Family Science Minor (CHSS)
- Human Development and Family Science, BA (CHSS)
- Individualized Study, BIS
- Integrative Studies, BA
- Integrative Studies, BS
- Leadership Minor
- Multimedia Minor
- Nonprofit Studies Minor
- Social Innovation Minor
- Social Justice Minor
- Well-Being Minor

Childhood Studies Minor

Banner Code: CHDS

Academic Advising
402 Enterprise Hall
Fairfax Campus

Email: sisinfo@gmu.edu
Website: integrative.gmu.edu/programs/la-minor-nc-chds

The interdisciplinary minor is designed for students who have a child-related focus in their major and for those who want to explore the topic of childhood. This minor focuses on the study of issues concerning children and their representations, including their experiences in society within historical and contemporary cultures and global contexts. The curriculum fosters thinking about childhood theory, research, policy and the practical applications of this knowledge to decisions regarding children and youth. The minor provides enough flexibility for students to choose relevant courses in keeping with their primary interests.

Faculty
Dunne, Garner (director)

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 16

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 575) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Three to four credits of</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>INTS 312 Images and Experiences of Childhood: Social Construct, Literature, and Film</td>
<td></td>
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<tr>
<td></td>
<td>INTS 316 Introduction to Childhood Studies (Mason Core) (p. 142)</td>
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</tbody>
</table>

Total Credits 7-8

1 A maximum of 4 credits may be applied to the minor.

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three courses from the following:</td>
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</tr>
<tr>
<td></td>
<td>CRIM 302 Delinquency</td>
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<tr>
<td></td>
<td>CRIM 406 Family Law and the Justice System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDUC 302 Human Growth and Development</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDUC 372 Human Development, Learning, and Teaching (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>INTS 319 Contemporary Youth Studies (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>INTS 321 Parent-Child Relations (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSYC 211 Developmental Psychology (Mason Core) (p. 142)</td>
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<tr>
<td></td>
<td>PSYC 313 Child Development</td>
<td></td>
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<tr>
<td></td>
<td>PSYC 314 Adolescent Development</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSYC 414 Behavior Disorders of Childhood</td>
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<tr>
<td></td>
<td>SOCI 302 Sociology of Delinquency</td>
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<tr>
<td></td>
<td>SOCI 309 Marriage, Families, and Intimate Life</td>
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</tr>
<tr>
<td></td>
<td>SOCI 360 Youth Culture and Society</td>
<td></td>
</tr>
</tbody>
</table>
Conservation Studies Minor (CHSS)

Banner Code: CNST

Academic Advising

Sharon Spradling, Academic Program Coordinator and Advisor
Email: sspradli@gmu.edu
Website: smconservation.gmu.edu

This minor is designed for undergraduate students who wish to augment their primary academic program with conservation studies taught in an experiential manner. There are three semester-long options by which students can complete the minor including topics such as: "Conservation, Biodiversity and Society", "Wildlife Ecology and Conservation", or "Endangered Species Conservation". These semesters are grounded in natural science and offer a collection of interdisciplinary courses that combine public policy, sociology, conflict resolution, and global awareness with hands-on experience. Students are in residence at the Smithsonian Conservation Biology Institute in Front Royal, Virginia, and are taught by Mason faculty, Smithsonian scientists and practitioners.

The minor is available only to students who enroll in any of the Smithsonian Mason Semesters, semester-long residential programs held at the Smithsonian Conservation Biology Institute in Front Royal, VA. The semesters are offered jointly by the College of Humanities and Social Sciences and the College of Science under the auspices of the Smithsonian-Mason School of Conservation.

This is a Green Leaf program (p. 107).

Admissions & Policies

Admissions

The minor is available only to students who enroll in either of the Smithsonian Mason Semesters, semester-long residential programs held at the Smithsonian Conservation Biology Institute in Front Royal, VA.

Policies

Eight credits of coursework must be unique to the minor and students pursuing this minor must complete one of the options with a minimum grade of 2.00 in each course. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 15-16

This is a Green Leaf program.

Conservation, Biodiversity and Society Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 320</td>
<td>Conservation in Practice</td>
<td>3</td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td>3</td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td>4</td>
</tr>
<tr>
<td>CONS 410</td>
<td>Human Dimensions in Conservation (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CONS 490</td>
<td>RS: Integrated Conservation Strategies (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 16

Wildlife Ecology and Conservation Option (fall semester only)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 404</td>
<td>Biodiversity Monitoring</td>
<td>4</td>
</tr>
<tr>
<td>CONS 405</td>
<td>Landscape and Macrosystems Ecology</td>
<td>4</td>
</tr>
<tr>
<td>CONS 496</td>
<td>Research in Conservation (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
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</table>

Total Credits: 16

Endangered Species and Conservation Option (spring semester only)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 406</td>
<td>Small Population Management</td>
<td>4</td>
</tr>
<tr>
<td>CONS 491</td>
<td>RS: Conservation Management Planning (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CONS 496</td>
<td>Research in Conservation (Mason Core) (p. 142)</td>
<td>5</td>
</tr>
</tbody>
</table>

Total Credits: 15

Environmental and Sustainability Studies, BA (CHSS)

Banner Code: LA-BA-EVSS

402 Enterprise Hall
Fairfax Campus
Website: ess.gmu.edu

The BA in Environmental and Sustainability Studies is a joint program between the College of Humanities and Social Sciences (p. 305) and the College of Science (p. 613).

This degree provides students with theoretical and practical knowledge of three aspects of environmental and sustainability studies: people, prosperity, and planet. In addition to required core courses, students develop more in-depth knowledge in their choice of concentration. This degree prepares students for employment and graduate study in fields
related to social justice, business and public policy, and environmental protection as they relate to the environment and sustainability.

This is a Green Leaf program (p. 107).

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

Students pursuing this degree must complete a minimum of 60 credits within the major, with a minimum grade of 2.00 in each course.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

**Requirements**

**Degree Requirements**

Total credits: minimum 120

This is a Green Leaf program.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 577) tab.

Of the credits required for this degree, 14 credits simultaneously fulfill core requirements for the major and Mason Core requirements, and, depending on the concentration and electives chosen, up to 9 credits may simultaneously fulfill Mason Core requirements and college BA requirements.

**Core Courses in the Major**

Core requirements may satisfy Mason Core requirements in natural science (EVPP 110 The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142), EVPP 111 The Ecosphere: An Introduction to Environmental Science II (Mason Core) (p. 142)) and the college BA requirement for social and behavioral science (GOVT 361 Introduction to Environmental Policy).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EVPP 377</td>
<td>Applied Ecology</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 110 &amp; EVPP 111 &amp; EVPP 336</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142) and The Ecosphere: An Introduction to Environmental Science II (Mason Core) (p. 142) and Human Dimensions of the Environment</td>
<td>11-12</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EVPP 210 &amp; EVPP 301 &amp; EVPP 302</td>
<td>Environmental Biology: Molecules and Cells and Environmental Science: Biological Diversity and Ecosystems and Environmental Science: Biomes and Human Dimensions</td>
<td></td>
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</table>

**Individual and Group Behavior**

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>INTS 334</td>
<td>Environmental Justice (Mason Core) (p. 142)</td>
<td>4</td>
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**Business and Public Policy**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON 105</td>
<td>Environmental Economics for the Citizen (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 100</td>
<td>Economics for the Citizen (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>EVPP 322</td>
<td>Business and Sustainability</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 361</td>
<td>Introduction to Environmental Policy ¹</td>
<td>3</td>
</tr>
<tr>
<td>or GOVT 361</td>
<td>Introduction to Environmental Policy</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>SOCI 313</td>
<td>Statistics for the Behavioral Sciences (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
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</table>

**Integration, Analysis, Innovation**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>INTS 210</td>
<td>Sustainable World (Mason Core) (p. 142)</td>
<td>4</td>
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<tr>
<td>EVPP 480</td>
<td>Sustainability in Action (Mason Core) (p. 142)</td>
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Select one from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>INTS 390</td>
<td>International Internship (minimum of 3 credits required)</td>
<td></td>
</tr>
<tr>
<td>INTS 490</td>
<td>Internship (minimum of 3 credits required)</td>
<td></td>
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</tbody>
</table>

Total Credits 41-43

¹ Satisfies the college BA requirement for social and behavioral science.

**Concentration in the Major**

**Available Concentrations**

- Concentration in Business and Sustainability (BUSU) (p. 578)
- Concentration in Climate Change and Society (CCSO) (p. 578)
- Concentration in Conservation and Sustainability (CSUS) (p. 578)
- Concentration in Environmental Policy and Economics (EVPE) (p. 579)
- Concentration in Equity and Environmental Justice (EQEJ) (p. 579)
- Concentration in Sustainable Food and Agriculture (SFG) (p. 580)
Concentration in Business and Sustainability (BUSU)
The requirements for this concentration, depending on the electives chosen, may satisfy the college BA requirement in philosophy and religious studies (PHIL 243 Global Environmental Ethics (Mason Core) (p. 142), PHIL 305 Business Ethics).

Students who have already taken and received credit for MGMT 303 Principles of Management or OM 303 Operations Management shall substitute MGMT 303 Principles of Management for MBUS 301 Managing People and Organizations in a Global Economy and OM 303 Operations Management for MBUS 306 Managing Projects and Operations. Both courses cannot be taken for credit. Students who have taken and received credit for both ACCT 203 Survey of Accounting and FNAN 303 Financial Management shall substitute the combination for MBUS 300 Accounting in a Global Economy. All three courses cannot be taken for credit.

For this concentration, students may substitute OM 211 Honors Statistical Analysis for Management for SOCI 313 Statistics for the Behavioral Sciences (Mason Core) (p. 142) (core requirement for degree). Students cannot receive credit for more than one of these.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Required Courses
| MBUS 300 | Accounting in a Global Economy                  | 3       |
| MBUS 301 | Managing People and Organizations in a Global Economy | 3       |
| MBUS 306 | Managing Projects and Operations                | 3       |
| Additional Course
| Select one course (3 credits) from the following: | 3       |
| GOVT 353 | Social Entrepreneurship                          |         |
| IT 495   | Turning Ideas into Successful Companies          |         |
| MBUS 304 | Entrepreneurship: Starting and Managing a New Enterprise | |
| MGMT 451 | Introduction to Entrepreneurship                |         |

Total Credits 12

Two Courses

<table>
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<th>Credits</th>
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<td>Select two courses (6 credits) from the following:</td>
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<tr>
<td>ECON 335</td>
<td>Environmental Economics</td>
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<tr>
<td>EVPP 338</td>
<td>Economics of Environmental Policy</td>
<td></td>
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<tr>
<td>EVPP 362</td>
<td>Intermediate Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>INTS 204</td>
<td>Leadership Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>PHIL 243</td>
<td>Global Environmental Ethics (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>PHIL 305</td>
<td>Business Ethics</td>
<td></td>
</tr>
</tbody>
</table>

Other course work with advisor approval

Total Credits 6

Concentration in Climate Change and Society (CCSO)
The requirements for this concentration, depending on the electives chosen, may satisfy the college BA requirement in philosophy and religious studies (PHIL 243 Global Environmental Ethics (Mason Core) (p. 142), PHIL 343 Topics in Environmental Philosophy (Mason Core) (p. 142)).

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CLIM 101</td>
<td>Global Warming: Weather, Climate, and Society (Mason Core) (p. 142)</td>
<td>3-4</td>
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<tr>
<td>or GGS 121</td>
<td>Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142)</td>
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<tr>
<td>EVPP 432</td>
<td>Energy Policy</td>
<td>3</td>
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<tr>
<td>EVPP 436</td>
<td>The Human Dimensions of Global Climate Change</td>
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Total Credits 9-10

Three Courses

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<td>Select three courses (9 credits) from the following:</td>
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<tr>
<td>EVPP 362</td>
<td>Intermediate Environmental Policy</td>
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<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
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<tr>
<td>GGS 309</td>
<td>Meteorology and Climate</td>
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</tr>
<tr>
<td>GGS 312</td>
<td>Physical Climatology</td>
<td></td>
</tr>
<tr>
<td>GGS 314</td>
<td>Severe and Extreme Weather</td>
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</tr>
<tr>
<td>PHIL 243</td>
<td>Global Environmental Ethics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHIL 343</td>
<td>Topics in Environmental Philosophy (Mason Core) (p. 142)</td>
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</tr>
</tbody>
</table>

Other course work with advisor approval

Total Credits 9

Satisfies the college BA requirement in philosophy and religious studies.

Concentration in Conservation and Sustainability (CSUS)
Smithsonian-Mason Program
Students complete one of the programs offered through the Smithsonian-Mason School of Conservation in cooperation with the Smithsonian Conservation Biology Institute.

Conservation, Biodiversity and Society Option (16 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 320</td>
<td>Conservation in Practice</td>
<td>3</td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td>3</td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td>4</td>
</tr>
<tr>
<td>CONS 410</td>
<td>Human Dimensions in Conservation (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONS 490</td>
<td>RS: Integrated Conservation Strategies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 16

Wildlife, Ecology, and Conservation Option (16 credits)

Offered only in Fall semesters, students complete four required courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 404</td>
<td>Biodiversity Monitoring</td>
<td>4</td>
</tr>
<tr>
<td>CONS 405</td>
<td>Landscape and Macrosystems Ecology</td>
<td>4</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
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</tr>
<tr>
<td>CONS 496</td>
<td>Research in Conservation (Mason Core)</td>
<td>6 (p. 142)</td>
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</tbody>
</table>

Total Credits 16

**Endangered Species and Conservation Option (16 credits)**

Offered only in Spring semesters, students complete four required courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 406</td>
<td>Small Population Management</td>
<td>4</td>
</tr>
<tr>
<td>CONS 491</td>
<td>RS: Conservation Management Planning (Mason Core)</td>
<td>4 (p. 142)</td>
</tr>
<tr>
<td>CONS 496</td>
<td>Research in Conservation (Mason Core)</td>
<td>6 (p. 142)</td>
</tr>
</tbody>
</table>

Total Credits 16

**Three Credits**

Select a minimum of three credits from the following:

<table>
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<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL 472</td>
<td>Introductory Animal Behavior</td>
</tr>
<tr>
<td>EVPP 401</td>
<td>Integrated Environmental Assessment</td>
</tr>
<tr>
<td>EVPP 419</td>
<td>Marine Mammal Biology and Conservation</td>
</tr>
<tr>
<td>EVPP 421</td>
<td>Marine Conservation</td>
</tr>
<tr>
<td>EVPP 430</td>
<td>Fundamentals of Environmental Geographic Information Systems</td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core)</td>
</tr>
<tr>
<td>INTS 211</td>
<td>Introduction to Conservation Studies (Mason Core)</td>
</tr>
<tr>
<td>INTS 311</td>
<td>The Mysteries of Migration: Consequences for Conservation (Mason Core)</td>
</tr>
<tr>
<td>INTS 370</td>
<td>Sustainable Food Systems</td>
</tr>
<tr>
<td>INTS 371</td>
<td>Food Systems and Policy (Mason Core)</td>
</tr>
<tr>
<td>INTS 403</td>
<td>Conservation Behavior (Mason Core)</td>
</tr>
<tr>
<td>Other course work with advisor approval</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

**Concentration in Environmental Policy and Economics (EVPE)**

The requirements for this concentration satisfy the Mason Core requirement in social and behavioral science (ECON 104 Contemporary Macroeconomic Principles (Mason Core) | (p. 142)) and, depending on the elective chosen, may fulfill the college BA requirement in non-Western culture (ECON 362 African Economic Development (Mason Core) | (p. 142)).

**Required Courses**

Completion of these courses will satisfy the Mason Core social and behavioral science requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 338</td>
<td>Economics of Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 362</td>
<td>Intermediate Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>or GOVT 362</td>
<td>Intermediate Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>GOVT 351</td>
<td>Administration in the Political System</td>
<td>3</td>
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</tbody>
</table>

Total Credits 12

**Six Credits**

Select a minimum of six credits from the following:

<table>
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<th>Code</th>
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</thead>
<tbody>
<tr>
<td>CONF 340</td>
<td>Global Conflict Analysis and Resolution (Mason Core)</td>
</tr>
<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
</tr>
<tr>
<td>ECON 311</td>
<td>Intermediate Macroeconomics</td>
</tr>
<tr>
<td>ECON 330</td>
<td>Public Finance</td>
</tr>
<tr>
<td>ECON 345</td>
<td>Introduction to Econometrics</td>
</tr>
<tr>
<td>ECON 360</td>
<td>Economics of Developing Areas (Mason Core)</td>
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<tr>
<td>ECON 412</td>
<td>Game Theory and Economics of Institutions</td>
</tr>
<tr>
<td>EVPP 337</td>
<td>Environmental Policy Making in Developing Countries</td>
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<tr>
<td>EVPP 396</td>
<td>Directed Topic in Environmental Science and Policy</td>
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<tr>
<td>EVPP 401</td>
<td>Integrated Environmental Assessment</td>
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<tr>
<td>EVPP 432</td>
<td>Energy Policy</td>
</tr>
<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core)</td>
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<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
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<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
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<tr>
<td>GOVT 339</td>
<td>Issues in the Politics of Advanced Industrial Societies</td>
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<td>GOVT 343</td>
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<td>Public Policy Making</td>
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<tr>
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<tr>
<td>INTS 371</td>
<td>Food Systems and Policy (Mason Core)</td>
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<tr>
<td>Other course work with advisor approval</td>
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Total Credits 6

**Concentration in Equity and Environmental Justice (EQEJ)**

**Required Courses**

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<tbody>
<tr>
<td>EVPP 362</td>
<td>Intermediate Environmental Policy</td>
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<tr>
<td>EVPP 436</td>
<td>The Human Dimensions of Global Climate Change</td>
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<tr>
<td>INTS 336</td>
<td>Poverty, Wealth and Inequality in the US (Mason Core)</td>
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<td>INTS 337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
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Total Credits 12
Six Credits

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<td>CONF 394</td>
<td>Human Rights and Inequality</td>
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<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
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<td>GOVT 445</td>
<td>Human Rights</td>
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<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142)</td>
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<td>INTS 331</td>
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<tr>
<td>INTS 338</td>
<td>Animal Rights and Humane Education</td>
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<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
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<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
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<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core) (p. 142)</td>
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Total Credits: 6

Concentration in Sustainable Food and Agriculture (SFG)

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<td>INTS 371</td>
<td>Food Systems and Policy (Mason Core) (p. 142)</td>
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<td>INTS 470</td>
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Total Credits: 10

Eight Credits

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<td>ANTH 376</td>
<td>Food and Culture</td>
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<td>BIOL 344</td>
<td>Plant Diversity and Evolution</td>
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<td>BIOL 345</td>
<td>Plant Ecology</td>
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<tr>
<td>EVPP 436</td>
<td>The Human Dimensions of Global Climate Change</td>
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<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
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<td>INTS 338</td>
<td>Animal Rights and Humane Education</td>
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<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
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<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core) (p. 142)</td>
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<td>NUTR 408</td>
<td>Food Security</td>
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Total Credits: 8

Writing-Intensive Requirement

The university requires all students to complete at least one course designated as "writing intensive" in their major at the 300 level or above. Students majoring in environmental and sustainability studies should consult an advisor to learn how to fulfill this requirement.

Upper Level Requirement

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

College Level Requirements for the BA Degree

In addition to the Mason Core (p. 142) program, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill a college level requirement may also be used simultaneously to satisfy other requirements (Mason Core (p. 142) requirements or requirements for the major).

Philosophy or Religious Studies

<table>
<thead>
<tr>
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<td>PHIL (p. 2044)</td>
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</table>

Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

<table>
<thead>
<tr>
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<tr>
<td>ANTH (p. 1212)</td>
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</tbody>
</table>

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement)

- CRIM (p. 1514)
- ECON (p. 1564)
- GOVT (p. 1774)
- HIST (p. 1818)
- LING (p. 1896)
- PSYC (p. 2074)
- SOCI (p. 2167)

Or choose from the following GGS courses:

- GGS 101 Major World Regions (Mason Core) (p. 142)
- GGS 102 Social and Cultural Geography (Mason Core) (p. 142)
- GGS 103 Human Geography (Mason Core) (p. 142)
GGS 110 Introduction to Geoinformation Technologies
GGS 301 Political Geography
GGS 303 Geography of Resource Conservation (Mason Core) (p. 142)
GGS 304 Population Geography (Mason Core) (p. 142)
GGS 305 Economic Geography
GGS 306 Urban Geography
GGS 315 Geography of the United States
GGS 316 Geography of Latin America
GGS 320 Geography of Europe
GGS 325 Geography of North Africa and the Middle East
GGS 330 Geography of the Soviet Succession States
GGS 357 Urban Planning
GGS 380 Geography of Virginia

1. The two courses used to fulfill the combined college and Mason Core (p. 142) requirements must be from different disciplines in the social and behavioral sciences.

2. HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

### Foreign Language

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<td></td>
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<td>Intermediate-level proficiency in one foreign language, fulfilled by: ¹</td>
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<tr>
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<td>Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)</td>
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<tr>
<td></td>
<td></td>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
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<tr>
<td></td>
<td></td>
<td>Or completing the following ASL three course sequence:</td>
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<tr>
<td></td>
<td>EDSE 115</td>
<td>American Sign Language (ASL) I</td>
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<tr>
<td></td>
<td>EDSE 116</td>
<td>American Sign Language (ASL) II</td>
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<tr>
<td></td>
<td>EDSE 219</td>
<td>American Sign Language (ASL) III</td>
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</tbody>
</table>

¹ Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

### Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td></td>
<td>Select 3 credits (additional to Mason Core Global Understanding requirement) ¹</td>
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<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
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<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
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<td>ANTH 314</td>
<td>Zombies</td>
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<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
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<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<td>ANTH 381</td>
<td>Medical Anthropology</td>
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<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
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<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
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<td>Survey of Arabic Literature</td>
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<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
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<td>Survey of Asian Art (Mason Core) (p. 142)</td>
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<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<td>Art and Archaeology of Ancient Egypt</td>
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<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>Contemporary Chinese Film</td>
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<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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<td>World Dance (Mason Core) (p. 142)</td>
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<td>Comparative Slavery</td>
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<td>Islam</td>
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<td>Chinese Philosophies and Religious Traditions</td>
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<td>Mysticism: East and West</td>
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<td>Muhammad: Life and Legacy</td>
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<td>RELI 375</td>
<td>Qur'an and Hadith</td>
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<td>Islamic Law, Society, and Ethics</td>
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<td>Islam, Democracy, and Human Rights</td>
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<td>Comparative Study of Religions (Mason Core)</td>
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<td>RUSS 353</td>
<td>Russian Civilization (Mason Core)</td>
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<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core)</td>
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</tbody>
</table>

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>ENGH 101</td>
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<td>GOVT 142</td>
<td>Oral Communication</td>
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<tr>
<td>MATH 107</td>
<td>Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>MATH 111</td>
<td>Information Technology and Computing</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>3</td>
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<td>MUSI 103</td>
<td>Musics of the World (Mason Core)</td>
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<td>RELI 211</td>
<td>Religions of the West (Mason Core)</td>
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<td>RELI 212</td>
<td>Religions of Asia (Mason Core)</td>
<td>3</td>
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<tr>
<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
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<tr>
<td>RELI 272</td>
<td>Islam</td>
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<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core)</td>
<td>3</td>
</tr>
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<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
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<td>RELI 315</td>
<td>Buddhism (Mason Core)</td>
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<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
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<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
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<td>RELI 374</td>
<td>Islamic Thought (Mason Core)</td>
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<td>RELI 375</td>
<td>Qur'an and Hadith</td>
<td>3</td>
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<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
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<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
<td>3</td>
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<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core)</td>
<td>3</td>
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<td>RUSS 353</td>
<td>Russian Civilization (Mason Core)</td>
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<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core)</td>
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<table>
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<td>Written Communication (GOVT 142)</td>
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<td>Quantitative Reasoning</td>
<td>Written Communication (MATH 107)</td>
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<td>Arts</td>
<td>Written Communication (JAPA 310)</td>
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<td>Global Understanding</td>
<td>Written Communication (JAPA 340)</td>
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<td>Literature</td>
<td>Written Communication (KORE 320)</td>
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<td>Mason Core Requirements</td>
<td>Written Communication (GOVT 328)</td>
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<td>Exploration Requirements</td>
<td>Written Communication (GOVT 332)</td>
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<td>Global Understanding</td>
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<td>Literature</td>
<td>Written Communication (GOVT 343)</td>
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</table>

1 A course used to fulfill the Mason Core global understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).
Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/ Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
<td>6</td>
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</table>

Total Credits 6

Bachelor’s Degree (selected)/ Environmental Science and Policy, Accelerated MS

Overview

This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy, MS (p. 696) in less time than if they had first graduated with an environmentally-focused Green Leaf-designated (p. 107) BA or BS degree and then applied to the MS program sequentially.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated (p. 107) major or minor may apply for provisional acceptance into this accelerated master’s program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 212 General Chemistry II (Mason Core) (p. 142) and three semesters of biology, including a course in ecology, or the equivalent, for example:
For information specific to the accelerated Environmental Science and Policy, MS (p. 696), see Graduate Admissions on the department’s website (http://esp.gmu.edu/academic-programs/graduate/admissions).

Reserve Graduate Credits

Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate environmentally-focused graduate coursework may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master’s program and must then complete an additional 27 credits to receive the master’s degree.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition form found on the Office of the University Registrar website (http://registrar.gmu.edu/forms) (as noted above).

Students may take up to 6 additional environmentally-focused graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, an MS could be completed with 21 post-bachelor’s credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department.

Human Development and Family Science, BA (CHSS)

Banner Code: E1-BA-HDFS

Academic Advising

Phone: 703-993-5856
Email: HDFS@gmu.edu
Website: hdfs.gmu.edu/

This degree prepares its graduates to use family-centered and strengths-based approaches to support the health and well-being of individuals and families in diverse communities. Graduates will have a strong interdisciplinary foundation in the HDFS field and competencies in 10 areas as established by the National Council on Family Relations, including:

- internal dynamics of relationships and families
- human growth and development
- family-and community-based program planning, implementation, and evaluation
- social policies and laws affecting families
- family diversity
- research methodology
- professional ethics as related to the HDFS field

The HDFS curriculum prepares students to effectively engage with families across the lifespan and in a variety of service settings and
professions, from early childhood education and care to family law and policy advocacy. We offer students 5 concentrations, including:

- child development, education, and services
- adolescent development and services
- adult development and aging
- family health and well-being
- family research, policy, and advocacy

Our program prepares students to critically analyze complex family issues, advocate for families in schools, communities, and in the policy arena, and address social-structural factors contributing to and influencing family functioning, health, and well-being (e.g., poverty and wealth inequality, immigration and illegalization, family homelessness, incarceration, family violence, and discrimination and structural violence such as racism, nationalism, or heterosexism). Students are required to complete a 6-credit internship and integrate research training with service fieldwork. Such an experience is a critical component of HDFS student development and will further prepare our students for graduate education and diverse careers in the human development and family science field.

The HDFS program is a joint academic degree program sponsored by the College of Education and Human Development (CEHD) (p. 161) and the College of Humanities and Social Sciences (CHSS) (p. 305).

Requirements

Degree Requirements

Total credits: minimum 120

Mason Core

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<thead>
<tr>
<th>Code</th>
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<td>Oral Communication (p. 142)</td>
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<tr>
<td>Information Technology and Ethics (p. 143)</td>
<td>3</td>
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<tr>
<td>Quantitative Reasoning (p. 143)</td>
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<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
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<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
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<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
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<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
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<tr>
<td>Global Understanding (p. 146)</td>
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<td>Natural Science (p. 148)</td>
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<tr>
<td>Synthesis (p. 153)</td>
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Additional Requirements for the BA

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<tr>
<td>One PHIL or one RELI course:</td>
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<td>Philosophy (PHIL) (p. 2044)</td>
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<tr>
<td>Religious Studies (RELI) (p. 2144)</td>
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<tr>
<td>Social and behavioral sciences course (p. 150)</td>
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<tr>
<td>Non-Western culture</td>
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<tr>
<td>Proficiency in a foreign language through the intermediate level (coursework or testing to determine proficiency)</td>
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<td>Total Credits</td>
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1 This requirement is additional to the Mason Core social and behavioral sciences (p. 150) requirement.

Major Requirements

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<tr>
<td>ECED 401</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
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<tr>
<td>or PSYC 313</td>
<td>Child Development</td>
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<tr>
<td>ECED 404</td>
<td>Engaging Families of Diverse Learners, Birth – Grade 6</td>
<td>3</td>
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<tr>
<td>or INTS 321</td>
<td>Parent-Child Relations (Mason Core) (p. 142)</td>
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<tr>
<td>HDFS 200</td>
<td>Individual and Family Development (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HDFS 250</td>
<td>Family Financial Literacy and Resource Management</td>
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<td>HDFS 300</td>
<td>Individual and Family Services Delivery</td>
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<td>HDFS 400</td>
<td>Advanced Family Processes (Mason Core) (p. 142)</td>
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<td>HDFS 401</td>
<td>Family Law and Public Policy</td>
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<tr>
<td>HDFS 498</td>
<td>Internship and Analysis in Human Development and Family Science</td>
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<td>HDFS 499</td>
<td>Advanced Internship and Analysis in Human Development and Family Science</td>
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<tr>
<td>SOCI 303</td>
<td>Methods and Logic of Inquiry</td>
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<tr>
<td>or PSYC 301</td>
<td>Research Methods in Psychology</td>
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<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td>3</td>
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<tr>
<td>HHS 432</td>
<td>Healthy Aging</td>
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<tr>
<td>SOCI 341</td>
<td>Sociology of Aging</td>
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1 Fulfills writing intensive requirement (p. 151).

Concentration in Adolescent Development and Services (ADS)

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<td>COMM 334</td>
<td>Family and Health Communication</td>
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<tr>
<td>CRIM 302</td>
<td>Delinquency</td>
<td></td>
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<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
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<tr>
<td>EDRD 301</td>
<td>Facilitating Literacy in School or Community Settings</td>
<td></td>
</tr>
<tr>
<td>HDFS 301</td>
<td>The Hospitalized Child and Family</td>
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<tr>
<td>INTS 312</td>
<td>Images and Experiences of Childhood: Social Construct, Literature, and Film</td>
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<tr>
<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core) (p. 142)</td>
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<td>INTS 316</td>
<td>Introduction to Childhood Studies (Mason Core) (p. 142)</td>
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<tr>
<td>INTS 317</td>
<td>Issues in Family Relationships (Mason Core) (p. 142)</td>
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<tr>
<td>INTS 319</td>
<td>Contemporary Youth Studies (Mason Core) (p. 142)</td>
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<tr>
<td>Code</td>
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<td>Credits</td>
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<tr>
<td>INTS 436</td>
<td>Social Justice Education (Mason Core)</td>
<td>(p. 142)</td>
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<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core)</td>
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<td>PSYC 304</td>
<td>Principles of Learning</td>
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<td>PSYC 314</td>
<td>Adolescent Development</td>
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<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core)</td>
<td>(p. 142)</td>
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<td>PSYC 466</td>
<td>Psychology of Intimate Relationships</td>
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<td>SOCI 302</td>
<td>Sociology of Delinquency</td>
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<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
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<td>Marriage, Families, and Intimate Life</td>
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<td>Sociology of Deviance</td>
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<td>SOCI 360</td>
<td>Youth Culture and Society</td>
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<td>SOCW 415</td>
<td>Child and Family Welfare</td>
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1 Other courses of interest may be approved by the program coordinator.

**Concentration in Adult Development and Aging (ADA)**

Select 15 credits from the following or in consultation with your advisor:

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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMM 334</td>
<td>Family and Health Communication</td>
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<tr>
<td>COMM 399</td>
<td>Special Topics in Communication</td>
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</tr>
<tr>
<td>EDUC 203</td>
<td>Disability in American Culture (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>GCH 480</td>
<td>Health Maintenance and Health Aspects of Aging</td>
<td></td>
</tr>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td></td>
</tr>
<tr>
<td>HAP 403</td>
<td>Assisted Living/Senior Housing Management and Philosophy</td>
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<tr>
<td>HAP 445</td>
<td>Introduction to Health Services Research</td>
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</tr>
<tr>
<td>HEAL 220</td>
<td>Dimensions of Mental Health</td>
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<tr>
<td>HEAL 310</td>
<td>Drugs and Health</td>
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<tr>
<td>HEAL 327</td>
<td>Women's Health</td>
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<tr>
<td>HEAL 331</td>
<td>Men's Health</td>
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<tr>
<td>HEAL 351</td>
<td>Relationship Health</td>
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<tr>
<td>HEAL 372</td>
<td>Health Communication</td>
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<tr>
<td>HHS 432</td>
<td>Healthy Aging</td>
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<tr>
<td>INTS 310</td>
<td>Violence and Gender</td>
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<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>INTS 317</td>
<td>Issues in Family Relationships (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>INTS 405</td>
<td>Women and Leadership</td>
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<tr>
<td>INTS 410</td>
<td>Contemporary Health Issues</td>
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<tr>
<td>INTS 440</td>
<td>Death, Dying, and Decision Making</td>
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<tr>
<td>PSYC 362</td>
<td>Psychology of Gender</td>
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<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core)</td>
<td>(p. 142)</td>
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<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
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<tr>
<td>PSYC 418</td>
<td>Death, Dying, and Grieving</td>
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<td>PSYC 466</td>
<td>Psychology of Intimate Relationships</td>
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<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
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<td>SOCI 309</td>
<td>Marriage, Families, and Intimate Life</td>
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<td>SOCI 315</td>
<td>Contemporary Gender Relations</td>
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<td>SOCI 341</td>
<td>Sociology of Aging</td>
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<td>SOCI 390</td>
<td>Sociology of Health, Illness, and Disability</td>
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<td>SOCW 435</td>
<td>Introduction to Gerontology</td>
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<tr>
<td>WMST 300</td>
<td>Current Issues in Women and Gender Studies</td>
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<td>Women and Work</td>
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**Concentration in Child Development, Education, and Services (CDES)**

Select 15 credits from the following or in consultation with your advisor:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 334</td>
<td>Family and Health Communication</td>
<td></td>
</tr>
<tr>
<td>ECED 402</td>
<td>Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners</td>
<td></td>
</tr>
<tr>
<td>ECED 403</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
<td></td>
</tr>
<tr>
<td>ECED 405</td>
<td>Introduction to Early Childhood Special Education</td>
<td></td>
</tr>
<tr>
<td>ECED 406</td>
<td>Medical and Developmental Aspects of Disabilities of Diverse Young Learners</td>
<td></td>
</tr>
<tr>
<td>ECED 422</td>
<td>Developing Language, Literacy, and Communication of Diverse Infants and Toddlers</td>
<td></td>
</tr>
<tr>
<td>ECED 423</td>
<td>Early Intervention for Infants Toddlers with Disabilities: Collaborative Consultative Approaches</td>
<td></td>
</tr>
<tr>
<td>EDRD 301</td>
<td>Facilitating Literacy in School or Community Settings</td>
<td></td>
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<td>HDFS 301</td>
<td>The Hospitalized Child and Family</td>
<td></td>
</tr>
<tr>
<td>INTS 312</td>
<td>Images and Experiences of Childhood: Social Construct, Literature, and Film</td>
<td></td>
</tr>
<tr>
<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>INTS 316</td>
<td>Introduction to Childhood Studies (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>INTS 317</td>
<td>Issues in Family Relationships (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>INTS 319</td>
<td>Contemporary Youth Studies (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
<td></td>
</tr>
<tr>
<td>PSYC 317</td>
<td>Cognitive Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>PSYC 414</td>
<td>Behavior Disorders of Childhood</td>
<td></td>
</tr>
<tr>
<td>SOCI 302</td>
<td>Sociology of Delinquency</td>
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</table>
Concentration in Family Health and Well-Being (FHW)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 15 credits from the following or in consultation with your advisor: 1</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 334</td>
<td>Family and Health Communication</td>
<td></td>
</tr>
<tr>
<td>EDUC 203</td>
<td>Disability in American Culture (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>GCH 300</td>
<td>Introduction to Public Health</td>
<td></td>
</tr>
<tr>
<td>GCH 310</td>
<td>Health Behavior Theories</td>
<td></td>
</tr>
<tr>
<td>GCH 332</td>
<td>Health and Disease</td>
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<tr>
<td>GCH 350</td>
<td>Health Promotion and Education</td>
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</tr>
<tr>
<td>GCH 445</td>
<td>Social Determinants of Health</td>
<td></td>
</tr>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
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</tr>
<tr>
<td>HAP 445</td>
<td>Introduction to Health Services Research</td>
<td></td>
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<tr>
<td>HEAL 110</td>
<td>Personal Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 220</td>
<td>Dimensions of Mental Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 230</td>
<td>Introduction to Health Behavior (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HEAL 310</td>
<td>Drugs and Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 325</td>
<td>Health Aspects of Human Sexuality</td>
<td></td>
</tr>
<tr>
<td>HEAL 327</td>
<td>Women's Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 331</td>
<td>Men's Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 351</td>
<td>Relationship Health</td>
<td></td>
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<td>HEAL 372</td>
<td>Health Communication</td>
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<tr>
<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 317</td>
<td>Issues in Family Relationships (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 410</td>
<td>Contemporary Health Issues</td>
<td></td>
</tr>
<tr>
<td>INTS 440</td>
<td>Death, Dying, and Decision Making</td>
<td></td>
</tr>
<tr>
<td>NUTR 422</td>
<td>Nutrition throughout the Life Cycle</td>
<td></td>
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<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core) (p. 142)</td>
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<tr>
<td>PSYC 418</td>
<td>Death, Dying, and Grieving</td>
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<tr>
<td>PSYC 466</td>
<td>Psychology of Intimate Relationships</td>
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<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SOCI 309</td>
<td>Marriage, Families, and Intimate Life</td>
<td></td>
</tr>
<tr>
<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 390</td>
<td>Sociology of Health, Illness, and Disability</td>
<td></td>
</tr>
<tr>
<td>WMST 300</td>
<td>Current Issues in Women and Gender Studies</td>
<td></td>
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</tbody>
</table>

Total Credits 15

1 Other courses of interest may be approved by the program coordinator.
Human Development and Family Science Minor (CHSS)

Banner Code: HDFS

Academic Advising

Email: HDFS@gmu.edu
Website: hdfs.gmu.edu/human-development-family-science/minor

This highly relevant and contemporary minor is a 15-credit interdisciplinary program designed especially for students who are interested in how individuals develop and how to improve the quality of life for families and communities. You’ll explore the psychological, social, cultural, and biological development of individuals from conception through adulthood and aging, within the contexts of their families, communities, and the broader society.

The minor is an excellent complement to many majors at Mason. And, because it is offered as a collaboration between the College of Education and Human Development (CEHD) and the College of Humanities and Social Sciences (CHSS), you’ll have the opportunity to learn from outstanding faculty from both colleges who are dedicated to teaching and involved in cutting-edge research.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP .5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 15

Core Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HDFS 200</td>
<td>Individual and Family Development (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HDFS 400</td>
<td>Advanced Family Processes (Mason Core) (p. 142)</td>
<td>3</td>
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</table>

Total Credits: 6

Electives

Select at least one course from each of the two component areas (development and diversity) below

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ECED 401</td>
<td>Developmental Pathways of Diverse Learners, Birth-Adolescence</td>
<td></td>
</tr>
<tr>
<td>EDUC 302</td>
<td>Human Growth and Development</td>
<td></td>
</tr>
<tr>
<td>INTS 312</td>
<td>Images and Experiences of Childhood: Social Construct, Literature, and Film</td>
<td></td>
</tr>
<tr>
<td>INTS 316</td>
<td>Introduction to Childhood Studies (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 319</td>
<td>Contemporary Youth Studies (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 415</td>
<td>Psychological Factors in Aging</td>
<td></td>
</tr>
<tr>
<td>SOCI 360</td>
<td>Youth Culture and Society</td>
<td></td>
</tr>
</tbody>
</table>

To reflect the interdisciplinary nature of the HDFS minor, two courses must have prefixes from disciplines outside of your major area of study (e.g., for PSYC majors, two courses must come from CEHD prefixes: ATEP (p. 1288), ECED (p. 1556), EDUC (p. 1577), HEAL (p. 1794), PHED (p. 2052); for ECED majors, two courses must come from CHSS prefixes: ANTH (p. 1212), INTS (p. 1862), PSYC (p. 2074), SOCI (p. 2167)).

Development

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 315</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEP 205</td>
<td>Cultural Competence</td>
<td></td>
</tr>
<tr>
<td>ECED 405</td>
<td>Introduction to Early Childhood Special Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 203</td>
<td>Disability in American Culture (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HEAL 350</td>
<td>Interventions for Populations and Communities at Risk</td>
<td></td>
</tr>
<tr>
<td>INTS 320</td>
<td>Construction of Differences: Race, Class, and Gender (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>INTS 336</td>
<td>Poverty, Wealth and Inequality in the US (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
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</table>

Diversity

<table>
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<tr>
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<tbody>
<tr>
<td>ANTH 315</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEP 205</td>
<td>Cultural Competence</td>
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<td>ECED 405</td>
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<tr>
<td>EDUC 203</td>
<td>Disability in American Culture (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>HEAL 350</td>
<td>Interventions for Populations and Communities at Risk</td>
<td></td>
</tr>
<tr>
<td>INTS 320</td>
<td>Construction of Differences: Race, Class, and Gender (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>INTS 336</td>
<td>Poverty, Wealth and Inequality in the US (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Individualized Study, BIS

Banner Code: LA-BIS-INDV

300 Enterprise Hall
Credit for Nontraditional Modes of Learning

The BIS program allows students to receive college credit for learning acquired through a variety of nontraditional methods indicated below. The maximum allowable credits are indicated for each category.

- Nationally recognized exam programs such as the College Level Examination Program (CLEP) when the particular exam has been approved for Mason credit. See CLEP Examination for an approved list. A maximum of 45 maximum credits can be earned through exams. After matriculation, students are limited to taking and applying credits for the CLEP exam in "Information Systems and Computer Applications". Students with a qualifying score on this exam will be awarded credit for IT 104T. Students receiving credit for IT 104T must still meet the university information technology ethics requirement (see Mason Core section of this catalog). Credit for other CLEP exams awarded after matriculation may not be applied.
- Certain university approved industry, government, or military training credits if such credits are indexed and recommended as college-level credit by the American Council on Education (ACE). To be eligible for Mason credit, training and course specifics must exactly match what is in the ACE guide and be approved for Mason credit. The specific credits must also be approved by the program director and the dean. A maximum of 45 credits can be earned through ACE-approved training. A maximum of 60 total combined credits can be accepted for exams and ACE-approved training. For example, if 45 credits are accepted by ACE-approved training, a maximum of 15 credits can be accepted for exams. Students may not take these courses for credit once they have matriculated at Mason.
- Experiential learning demonstrated by portfolios subject to approval by the program director and the dean (30 maximum credits).
- College-level credit earned at institutions accredited by bodies other than recognized regional accrediting organizations subject to approval by the program director and the dean. These credits can only be considered if the institution is listed in Accredited Institutions of Postsecondary Education published by ACE (30 maximum credits) and only if they are taken before the student matriculates at Mason. Students may not pursue credit for options 1, 2, and 4 once they have matriculated at Mason. They must complete the third option within their first 30 credits after declaring the BIS major. Although the types of credit noted above may be applied to a bachelor of individualized study degree, if a BIS student changes majors, credit awarded in these ways cannot be used toward other majors. These nontraditional credits are not transferable to other degree programs at Mason.

Requirements

Degree Requirements
Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies tab.

Students pursuing a bachelor of individualized study degree must complete four required courses and one concentration.

Core Courses in the Major
Students must complete each of the three core courses with a minimum grade of 2.00.
In BIS 390 The Research Process (or BIS 391 The Research Process for Honors for students pursuing honors in the major), students develop a project proposal. An approved proposal from BIS 390 The Research Process or BIS 391 The Research Process for Honors is a prerequisite to enroll in BIS 490 RS: Senior Project (Mason Core) (p. 142).

In BIS 490 RS: Senior Project (Mason Core) (p. 142), students complete a senior capstone project that varies according to the individual program of study. It may be an investigative or creative project, and must be appropriate to the student’s interdisciplinary concentration. This course requires significant writing and fulfills the Mason Core synthesis requirement. It is a research intensive course designated RS by OSCAR. The project is evaluated by the BIS 490 RS: Senior Project (Mason Core) (p. 142) instructor in consultation with the student’s faculty mentor and others as determined by the BIS director.

BIS 490 RS: Senior Project (Mason Core) (p. 142) is taken when no more than 6 credits remain in the concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIS 300</td>
<td>Understanding Interdisciplinary Studies</td>
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</tr>
<tr>
<td>BIS 390</td>
<td>The Research Process</td>
<td>3</td>
</tr>
<tr>
<td>or BIS 391</td>
<td>The Research Process for Honors</td>
<td></td>
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<tr>
<td>BIS 490</td>
<td>RS: Senior Project (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Credits**: 10

**Concentrations in the Major**

Students must complete one concentration of 24-42 credits. Of the credits applied to the concentration, at least 15 credits must be at the 300 level or above and a maximum of 6 credits can have grades of C- or D (grades below 2.00). The total credits applied to the concentration must represent a minimum GPA of 2.00.

Courses applied to a concentration may not also be used to fulfill Mason Core requirements.

**Individualized Concentration (IND)**

Students may do an individualized concentration to meet their own academic needs and interests. The concentration is developed in close consultation with BIS staff and a faculty mentor. Students may incorporate into their individualized concentrations up to 9 credits of previously earned college course work or previously earned nontraditional credit from other institutions. In addition to the 3 core courses, students complete between 24 and 36 credits, depending on the topic and the student’s preparation.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 24 to 36 credits from a minimum of two disciplines</td>
<td>24-36</td>
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</tbody>
</table>

**Total Credits**: 24-36

Students are encouraged to include BIS 304 Introduction to BIS in the concentration. Students are also encouraged to include BIS 489 Directed Readings and Research and complete it before taking BIS 490 RS: Senior Project (Mason Core) (p. 142).

**Concentration in Early Childhood Education Studies (ECES)**

This concentration offers students holding a Northern Virginia Community College associate’s degree in applied science in early childhood development the opportunity to obtain a BIS in early childhood education studies and a minor in business or other relevant minor. This concentration does not lead to teacher licensure in early childhood education.

To receive this concentration, students complete a minimum of 34 credits (the concentration requirements plus self-selected minor) beyond the associate’s degree in addition to the four core BIS courses, electives, and Mason Core requirements needed to reach at least 120 credits.

**Admission Requirements**

Students are eligible for this concentration if they have an associate’s degree in applied science in early childhood development. Unlike the individualized concentration, there is no age restriction regarding admission into this BIS concentration.

**Interdisciplinary Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDUC 302</td>
<td>Human Growth and Development</td>
<td>3</td>
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<tr>
<td>ECED 402</td>
<td>Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners</td>
<td>3</td>
</tr>
<tr>
<td>or ECED 403</td>
<td>Inclusive Curriculum for Young Learners: Planning Instruction and Guidance</td>
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</table>

**Linguistic Development of Infants and Toddlers**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ECED 422</td>
<td>Developing Language, Literacy, and Communication of Diverse Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>or ECED 423</td>
<td>Early Intervention for Infants Toddlers with Disabilities: Collaborative Consultative Approaches</td>
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**Research Methods**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>GOVT 300</td>
<td>Research Methods and Analysis (Mason Core) (p. 142)</td>
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<tr>
<td>or SOCI 303</td>
<td>Methods and Logic of Inquiry</td>
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</table>

**Electives at the 300-400-level**

Select 6 credits of electives relevant to the concentration in consultation with their faculty mentor

**Total Credits**: 19

**Self-Selected Minor**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td></td>
<td>Select 15-23 credits of self-selected minor</td>
<td>15-23</td>
</tr>
</tbody>
</table>

**Total Credits**: 15-23

**Mason Core**

BIS students complete a modified Mason Core (p. 142) program of 36 credits. The Mason Core requirements may include courses not listed here; consult the BIS program for more information. Courses used to meet the Mason Core requirements cannot be used to meet a requirement for a concentration.

Students pursuing the concentration in early childhood education studies meet Mason Core requirements as specified in the advising agreement between NVCC and Mason.

**Mason Core for Early Childhood Education Studies Concentration**

<table>
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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td></td>
<td>Lower Level Written Communication</td>
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<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
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<td>-------</td>
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</tr>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences</td>
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<td>6</td>
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<td>MATH or STAT</td>
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<td>3</td>
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<tr>
<td>Information Technology</td>
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<td>3</td>
</tr>
<tr>
<td>Mason</td>
<td>Upper Level Written Communication</td>
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</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>Humanities (including 3 credits of arts) (p. 142)</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Social Science (p. 142)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BIS 490</td>
<td>RS: Senior Project (Mason Core) (p. 142) (synthesis)</td>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mason Core for Individualized Concentration</td>
<td></td>
</tr>
<tr>
<td>English Composition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humans</td>
<td>Titty</td>
<td>Credits</td>
</tr>
<tr>
<td>Select three courses from the following:</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Any ARTH course (p. 1240)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any AVT course (p. 1250)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any COMM course (p. 1417)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any DANC course (p. 1548)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any ENGH course (p. 1637)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any MUSI course (p. 1955)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any PHIL course (p. 2044)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any RELI course (p. 2144)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any THR course (p. 2261)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any course from a foreign language department</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural Science</td>
<td></td>
</tr>
<tr>
<td>Select three courses from the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Any ASTR course (p. 1283)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any BIOL course (p. 1327)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any CHEM course (p. 1367)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any CLIM course (p. 1407)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any EVPP course (p. 1668)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any GEOL course (p. 1749)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any PHYS course (p. 2055)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td></td>
</tr>
<tr>
<td>GGS 102</td>
<td>Physical Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 309</td>
<td>Meteorology and Climate</td>
<td></td>
</tr>
<tr>
<td>INTS 301</td>
<td>Science in the News (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 318</td>
<td>Exploring Virginia’s Watersheds</td>
<td></td>
</tr>
<tr>
<td>INTS 395</td>
<td>Field-Based Work</td>
<td></td>
</tr>
<tr>
<td>INTS 401</td>
<td>Conservation Biology (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Synthesis Course</td>
<td></td>
</tr>
<tr>
<td>BIS 490</td>
<td>RS: Senior Project (Mason Core) (p. 142) (synthesis)</td>
<td>4</td>
</tr>
</tbody>
</table>

1 Except for ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142), ENGH 101 Composition (Mason Core) (p. 142), and ENGH 302 Advanced Composition (Mason Core) (p. 142)

2 Except for PHIL 173 Logic and Critical Thinking, PHIL 376 Symbolic Logic
Additional Electives
Any remaining credits may be completed with electives to bring the degree total to 120.

Honors

Honors in the Major
Highly-qualified students may apply to graduate with honors in the major. Students should apply the semester before they intend to enroll in BIS 390 The Research Process. If accepted, students must complete BIS 391 The Research Process for Honors in place of BIS 390 The Research Process, in addition to an individualized section of BIS 490 RS: Senior Project (Mason Core) (p. 142). To graduate with honors in the major, students must complete these two courses with a minimum GPA of 3.50, maintain a minimum cumulative GPA of 3.75, and successfully present their research during the Senior Project presentations (by earning a grade of 2.0 or better in BIS 490 RS: Senior Project (Mason Core) (p. 142)).

Accelerated Master's
The accelerated master's programs in the list below specify the individualized study BIS as a feeder degree for their programs. It is important to note, however, that many accelerated master's programs are available for any bachelor's degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at Mason.

Individualized Study, BIS/Applied Information Technology, Accelerated MS Overview
Highly-qualified students in the Individualized Study, BIS (p. 588) have the option of obtaining an accelerated Applied Information Technology, MS (p. 1118).

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Mason undergraduate students in the BIS Program can apply in the semester in which they will have completed 90 or more credits (including 15 Mason resident credits) applicable toward the BIS. Students must have an overall GPA of at least 3.30 to apply to the program.

 Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation.

To apply these credits to the master's degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master's Transition Form (http://registrar.gmu.edu/forms).

Accelerated Option Requirements
Students in the accelerated master's option must maintain a minimum 3.30 GPA in the undergraduate segment until they have satisfied all requirements for the BIS degree. On completion and conferral of the undergraduate degree they submit the Bachelor's/Accelerated Master's Transition Form (http://registrar.gmu.edu/forms) and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. Students must complete all credits that satisfy requirements of the BIS program and those of the MSAIT program, with two courses overlapping from the courses necessary to earn the BIS with a concentration IND (individualized), applied information technology emphasis as listed below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 524</td>
<td>Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>AIT 542</td>
<td>Fundamentals of Computing Platforms</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Individualized Study, BIS/Applied Information Technology, Accelerated MS Overview
Highly-qualified students in the Individualized Study, BIS (p. 588) have the option of obtaining an accelerated Telecommunications, MS (p. 1111).

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

 Admission Requirements
Students in the Individualized Study, BIS (p. 588) program may apply for this option if they have earned 90 undergraduate credits (including 15 Mason resident credits) with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Telecommunications, MS (p. 1111) program.

Accelerated Option Requirements
Students must complete all requirements for the BIS and MS programs, with 6 credits overlap.

Students select TCOM courses from the list below to meet the requirements of the accelerated program. Six credits of TCOM courses will be applied to meet the requirements of both the BIS and MS TCOM programs. An additional three credits of TCOM courses is required for the BIS Individualized Concentration (IND) with emphasis on telecommunication. Note that accelerated students can only take the courses in the list below if they passed the listed prerequisite course with a B or higher.

BIS Concentration
Total credits: 34-46

Students who are pursuing the Individualized Study, BIS (p. 588), Individualized concentration (IND) with an emphasis on telecommunications must take:
Select an additional 500-level TCOM course(s) from the list below

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIS 300</td>
<td>Understanding Interdisciplinary Studies</td>
<td>3</td>
</tr>
<tr>
<td>BIS 390</td>
<td>The Research Process</td>
<td>3</td>
</tr>
<tr>
<td>BIS 490</td>
<td>RS: Senior Project (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>BIS 491</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ECE 301</td>
<td>Digital Electronics</td>
<td>3</td>
</tr>
<tr>
<td>IT 341</td>
<td>Data Communications and Network Principles</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 530</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 607</td>
<td>Satellite Communications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 608</td>
<td>Optical Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 631</td>
<td>Voice Over IP</td>
<td>3</td>
</tr>
</tbody>
</table>

Select additional courses related to telecommunication \(^1\) 9-21

Total Credits 31-43

\(^1\) Required to reach the necessary number of credits for the BIS Individualized concentration.

### Telecommunications Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 530</td>
<td>Data Communications Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 607</td>
<td>Satellite Communications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 608</td>
<td>Optical Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 631</td>
<td>Voice Over IP</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
Accelerated students who have passed IT 341 Data Communications and Network Principles with a grade of B or higher will not be required to take TCOM 530 in the Telecommunications, MS core. Other TCOM courses may be approved on a case-by-case basis.

See each course for individual prerequisite requirements.

### Degree Conferral

Students must apply the semester before they expect to complete the BIS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

### Integrative Studies, BA

**Banner Code:** LA-BA-INTS

**Academic Advising**

402 Enterprise Hall
Fairfax Campus

Email: sisinfo@gmu.edu
Website: integrative.gmu.edu/programs/la-ba-ints

The bachelor of arts in Integrative Studies brings together research, theory and practice across numerous disciplines. Integrative studies majors select a multidisciplinary concentration or work with student services staff to develop their own concentration, uniquely suited to their academic and career goals. Integrative studies majors explore new topics and experiences while gaining the knowledge and skills needed to enter the workforce. Required coursework is offered in small classes with ample room for discussion, collaborative learning, and experiential learning, including in-community projects, volunteer opportunities, field work, internships and work with faculty on research that directly engages current social and global challenges.

### Admissions & Policies

#### Policies

Students must fulfill all Requirements for Bachelor’s Degrees (p. 87) including the Mason Core (p. 142). Integrative studies students may fulfill lower level Mason Core requirements through approved integrative studies (INTS) coursework. Students pursuing a BA in integrative studies must complete a minimum of 30 credits of (INTS) coursework, with at least 15 credits at the 300 and 400 levels. These 30 INTS credits fulfill the writing intensive and synthesis Mason Core requirements.

Students must complete ENGH 302 Advanced Composition (Mason Core) (p. 142). A maximum of 15 credits of INTS 399 Study Abroad can be applied to the major. Students must have a minimum GPA of 2.00 in courses applied to the major. Before registering, students should see an advisor to help plan their degree program to meet Mason requirements. The advisor also can help students choose electives or a minor.

For policies governing all undergraduate degrees, see AP .5 Undergraduate Policies (p. 87).

### Requirements

#### Degree Requirements

Total credits: minimum 120

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 593) tab.

Integrative studies students complete INTS 391 Understanding Integrative Studies and choose a concentration from the options below. Before registering, students should see an advisor to help plan their degree program to meet Mason requirements. The advisor also can help students choose electives or a minor.

#### Required Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 391</td>
<td>Understanding Integrative Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Concentration in the Major

A concentration is the equivalent of a major in a traditional degree program. Students choose from an established multidisciplinary concentration below or create with faculty an individualized program of study to fit their interests and needs. Concentration coursework combines integrative studies (INTS) classes with coursework from other Mason units (departments, schools, and colleges). While fulfilling the concentration requirements, students are also responsible for completing a minimum of 30 credits of INTS coursework. Any INTS courses required...
for the concentration will apply. Students must present a minimum GPA of 2.00 in courses applied to the concentration.

**Available Concentrations**
- Childhood Studies (CHDS) (p. 594)
- International Studies (INST) (p. 594)
- Leadership and Organizational Development (LODV) (p. 595)
- Legal Studies (LGLS) (p. 596)
- Liberal Arts for the Teaching Professions (LATP) (p. 597)
- Social Innovation (SINN) (p. 597)
- Social Justice and Human Rights (SJHR) (p. 597)
- Social Science for Education (SSED) (p. 599)
- Women and Gender Studies Concentration (WGST) (p. 599)
- Individualized Concentration (IND) (p. 600)

**Childhood Studies (CHDS)**

Students complete the following coursework:

**Seven Required Courses (minimum of 23 credits)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 312</td>
<td>Images and Experiences of Childhood: Social Construct, Literature, and Film</td>
<td>3-6</td>
</tr>
<tr>
<td>INTS 316</td>
<td>Introduction to Childhood Studies (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>INTS 317</td>
<td>Issues in Family Relationships (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 313</td>
<td>Child Development</td>
<td>3</td>
</tr>
<tr>
<td>or SOCI 313</td>
<td>Statistics for the Behavioral Sciences (Mason Core)</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Credits: 23-27

**Additional Courses**

Select three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 452</td>
<td>Critical Study of Children’s Literature</td>
<td>9-18</td>
</tr>
<tr>
<td>HEAL 350</td>
<td>Interventions for Populations and Communities at Risk</td>
<td></td>
</tr>
<tr>
<td>INTS 305</td>
<td>Conflict Resolution and Transformation</td>
<td></td>
</tr>
<tr>
<td>INTS 310</td>
<td>Violence and Gender</td>
<td></td>
</tr>
<tr>
<td>INTS 319</td>
<td>Contemporary Youth Studies (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 320</td>
<td>Construction of Differences: Race, Class, and Gender (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 321</td>
<td>Parent-Child Relations (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>NUTR 420</td>
<td>Strategies for Nutrition Education</td>
<td></td>
</tr>
<tr>
<td>NUTR 421</td>
<td>Community Nutrition</td>
<td></td>
</tr>
<tr>
<td>NUTR 422</td>
<td>Nutrition throughout the Life Cycle</td>
<td></td>
</tr>
<tr>
<td>NUTR 423</td>
<td>Nutrition and Chronic Illnesses</td>
<td></td>
</tr>
<tr>
<td>NUTR 466</td>
<td>Nutrition and Weight Management: Obesity, Anorexia, and Bulimia</td>
<td></td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Adolescent Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 324</td>
<td>Personality Theory</td>
<td></td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 362</td>
<td>Psychology of Gender</td>
<td></td>
</tr>
<tr>
<td>SOCW 415</td>
<td>Child and Family Welfare</td>
<td></td>
</tr>
<tr>
<td>SOCI 302</td>
<td>Sociology of Delinquency</td>
<td></td>
</tr>
<tr>
<td>SOCI 360</td>
<td>Youth Culture and Society</td>
<td></td>
</tr>
<tr>
<td>other relevant courses with approval of advisor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9-18

**International Studies (INST)**

Students complete the following coursework:

**Language Proficiency**

All students must demonstrate language proficiency at the intermediate level through coursework (a Mason course numbered 202) or proficiency testing.

**Foundational Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 303</td>
<td>Introduction to International Studies (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 435 or INTS 406</td>
<td>Leadership in a Changing Environment (Global Leadership (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Credits: 9-10

**Religious Studies**

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 341</td>
<td>Global Perspectives on Spirituality and Healing (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 360</td>
<td>Religion and Politics</td>
<td></td>
</tr>
<tr>
<td>RELI 405</td>
<td>Religion, Values, and Globalization</td>
<td></td>
</tr>
<tr>
<td>RELI 407</td>
<td>Women in the World’s Religions</td>
<td></td>
</tr>
<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3

**Geography**

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td>3</td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3
### Globalization

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CULT 320</td>
<td>Globalization and Culture</td>
<td></td>
</tr>
<tr>
<td>GLOA 101</td>
<td>Introduction to Global Affairs (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 348</td>
<td>Digital Futures</td>
<td></td>
</tr>
<tr>
<td>SOCI 120</td>
<td>Globalization and Society (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3

### Sustainability

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 210</td>
<td>Sustainable World (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>INTS 334</td>
<td>Environmental Justice (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 401</td>
<td>Conservation Biology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
<td></td>
</tr>
<tr>
<td>PHIL 243</td>
<td>Global Environmental Ethics (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3-6

### Politics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 312</td>
<td>Political Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>GGS 301</td>
<td>Political Geography</td>
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</tr>
<tr>
<td>GOVT 322</td>
<td>International Relations Theory</td>
<td></td>
</tr>
<tr>
<td>INTS 422</td>
<td>An Experiential Approach to American Foreign Policy</td>
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</table>

Total Credits: 3

### Social Action and Conflict Transformation

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 300</td>
<td>Law and Justice (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 315</td>
<td>Spirituality and Conflict Transformation (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>INTS 416</td>
<td>Refugee and Internal Displacement (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 417</td>
<td>Human Trafficking and the International Community</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3-6

### Creative Arts

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>DANC 318</td>
<td>Global Perspectives: World Dance Forms (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 362</td>
<td>Global Voices (Mason Core)</td>
<td></td>
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<tr>
<td>ENGH 366</td>
<td>The Idea of a World Literature (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 367</td>
<td>World Literatures in English</td>
<td></td>
</tr>
<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 346</td>
<td>Art as Social Action (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 446</td>
<td>Art, Beauty, and Culture (Mason Core) (Students take 3 credits.)</td>
<td></td>
</tr>
<tr>
<td>THR 359</td>
<td>World Stages (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3-6

### Electives

Select three electives ¹

Total Credits: 9-12

¹ Students take three additional courses focused on an international area of their interest with the advice and approval of an adviser.

### Leadership and Organizational Development (LODV)

#### Required Courses

*Understanding the interdisciplinary nature of leadership and its application to personal, organizational and societal development*

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 204</td>
<td>Leadership Theory and Practice</td>
<td>4</td>
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<tr>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 8

### Additional Course

*Developing a heightened sense of self, including: inner knowledge, core values, intersecting identities, well-being, and impact on others*

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>INTS 404</td>
<td>Ethics and Leadership</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Credits: 3-4

### Additional Course

*Understanding ethical approaches to leadership and change, and applying ethics in personal and organizational processes*

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 405</td>
<td>Women and Leadership</td>
<td></td>
</tr>
<tr>
<td>INTS 355</td>
<td>Mindfullness, Meaning Well-Being</td>
<td></td>
</tr>
<tr>
<td>PSYC 417</td>
<td>Science of Well Being</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3-4
### Integrative Studies, BA

**PHIL 358**  
Ethics and Economics  

| Total Credits | 3-4 |

#### Additional Course

*Understanding team and organizational learning*

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 420</td>
<td>Work Effectiveness Skills</td>
<td>3-4</td>
</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

| Total Credits | 3-4 |

#### Additional Course

*Demonstrating competence in personal and professional communication*

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 202</td>
<td>Public Speaking and Critical Thinking Skills (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>COMM 201</td>
<td>Small Group Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 306</td>
<td>Issues in Intercultural Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 332</td>
<td>Nonverbal Communication</td>
<td></td>
</tr>
<tr>
<td>MBUS 302</td>
<td>Managing Information in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142)</td>
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</table>

| Total Credits | 3-4 |

#### Additional Courses

Select four courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACCT 203</td>
<td>Survey of Accounting</td>
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<tr>
<td>ACCT 303</td>
<td>Accounting for Decision Making</td>
<td></td>
</tr>
<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
<td></td>
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<tr>
<td>BUS 210</td>
<td>Business Analytics I</td>
<td></td>
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<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements</td>
<td></td>
</tr>
<tr>
<td>BUS 310</td>
<td>Business Analytics II</td>
<td></td>
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<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
<td></td>
</tr>
<tr>
<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 305</td>
<td>Conflict Resolution and Transformation</td>
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<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
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<tr>
<td>INTS 356</td>
<td>Foundations of Resilience and Well-Being</td>
<td></td>
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<tr>
<td>INTS 451</td>
<td>Leadership and Organizational Problem-Solving</td>
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<tr>
<td>INTS 406</td>
<td>Global Leadership (Mason Core) (p. 142)</td>
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<tr>
<td>INTS 420</td>
<td>Work Effectiveness Skills</td>
<td></td>
</tr>
<tr>
<td>INTS 431</td>
<td>Principles of Fund Raising</td>
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<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142)</td>
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</table>

| Total Credits | 12-18 |

#### Legal Studies (LGLS)

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>INTS 202</td>
<td>Public Speaking and Critical Thinking Skills (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>PHIL 173</td>
<td>Logic and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>INTS 300</td>
<td>Law and Justice (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 301</td>
<td>Public Law and the Judicial Process</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 311</td>
<td>Philosophy of Law</td>
<td>3</td>
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<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
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| Total Credits | 22 |

#### Additional Course

Select one from the following:

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<tbody>
<tr>
<td>GOVT 407</td>
<td>Law and Society</td>
<td>3</td>
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<tr>
<td>GOVT 422</td>
<td>Constitutional Interpretation</td>
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</tr>
<tr>
<td>GOVT 423</td>
<td>Constitutional Law: Civil Rights and Liberties</td>
<td></td>
</tr>
<tr>
<td>GOVT 443</td>
<td>Law and Ethics of War</td>
<td></td>
</tr>
<tr>
<td>GOVT 446</td>
<td>International Law and Organization</td>
<td></td>
</tr>
<tr>
<td>GOVT 452</td>
<td>Administrative Law and Procedures</td>
<td></td>
</tr>
<tr>
<td>CRIM 424</td>
<td>Constitutional Law: Criminal Process and Rights</td>
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</table>

| Total Credits | 3 |

#### Additional Courses

Select three courses from the following:

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Any undergraduate CRIM course (p. 1514)</td>
<td></td>
<td>9-16</td>
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<tr>
<td>Any CONF course (p. 1488)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>COMM 230</td>
<td>Case Studies in Persuasion</td>
<td></td>
</tr>
<tr>
<td>COMM 430</td>
<td>Persuasion</td>
<td></td>
</tr>
<tr>
<td>COMM 475</td>
<td>Journalism Law</td>
<td></td>
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<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles (Mason Core) (p. 142)</td>
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<tr>
<td>ECON 310</td>
<td>Money and Banking</td>
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<tr>
<td>ECON 335</td>
<td>Environmental Economics</td>
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<tr>
<td>ECON 390</td>
<td>International Economics (Mason Core) (p. 142)</td>
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<tr>
<td>ECON 415</td>
<td>Law and Economics</td>
<td></td>
</tr>
<tr>
<td>GOVT 307</td>
<td>Legislative Behavior</td>
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</table>
GOVT 420  American Political Thought
INTS 204  Leadership Theory and Practice
INTS 304  Social Movements and Community Activism (Mason Core) (p. 142)
INTS 305  Conflict Resolution and Transformation
INTS 362  Social Justice and Human Rights (Mason Core) (p. 142)
INTS 336  Poverty, Wealth and Inequality in the US (Mason Core) (p. 142)
INTS 416  Refugee and Internal Displacement (Mason Core) (p. 142)
INTS 420  Work Effectiveness Skills
PHIL 309  Bioethics (Mason Core) (p. 142)
SOCI 301  Criminology
SOCI 302  Sociology of Delinquency
Other relevant courses with approval of advisor

Total Credits 9-16

Liberal Arts for the Teaching Professions (LATP)

<table>
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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td></td>
<td>9 credits of ENGH, including ENGH 101 or ENGH 302 and one literature course</td>
<td>9</td>
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<tr>
<td></td>
<td>3 credits of oral communication</td>
<td>3</td>
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<tr>
<td></td>
<td>12 credits of natural science (must include a lab science and coursework from at least two scientific disciplines)</td>
<td>12</td>
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<tr>
<td></td>
<td>12 credits of mathematics or statistics (only 3 credits of statistics or probability can be accepted)</td>
<td>12</td>
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<tr>
<td></td>
<td>3 credits of ECON coursework (p. 1564)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3 credits of U.S. history</td>
<td>3</td>
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<tr>
<td></td>
<td>3 credits of GGS 103 Human Geography</td>
<td>3</td>
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<tr>
<td></td>
<td>3 credits of American government (GOVT 103 or 304)</td>
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<tr>
<td></td>
<td>3 credits of HIST 100 or HIST 125</td>
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<tr>
<td></td>
<td>3 credits of ARTH, AVT, MUSI, or THR coursework</td>
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</tr>
<tr>
<td></td>
<td>3 credits of PHIL, RELI, or RFLN coursework</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Minimum of 9 credits of EDCI, ECED, EDUC, EDLE, EDSE, or EDRD coursework</td>
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</table>

Total Credits 66

Social Innovation (SINN)

Students complete a minimum of 33 credits of coursework.

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>INTS 203</td>
<td>Inquiry for Action: Facilitating Change (Mason Core) (p. 142)</td>
<td>4-6</td>
</tr>
<tr>
<td></td>
<td>or INTS 450</td>
<td>Social Innovation in Action</td>
<td>4</td>
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<tr>
<td></td>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
<td>4</td>
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</table>

Total Credits 8-10

Social Impact

Select two social impact courses from the following: 6-8

<table>
<thead>
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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>INTS 304  Social Movements and Community Activism (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>INTS 334  Environmental Justice (Mason Core) (p. 142)</td>
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</table>

Total Credits 6-8

Enterprise Course

Select two enterprise courses from the following: 7-8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>AMGT 410  Arts Advocacy and Community</td>
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<tr>
<td></td>
<td>GOVT 353  Social Entrepreneurship</td>
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<tr>
<td></td>
<td>MBUS 304  Entrepreneurship: Starting and Managing a New Enterprise</td>
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</tr>
</tbody>
</table>

Total Credits 7-8

Policy Course

Select one policy course from the following: 3-6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>GOVT 351  Administration in the Political System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GOVT 364  Public Policy Making</td>
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<td></td>
<td>INTS 348  Digital Futures</td>
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<tr>
<td></td>
<td>INTS 371  Food Systems and Policy (Mason Core) (p. 142)</td>
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<tr>
<td></td>
<td>INTS 436  Social Justice Education (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td></td>
<td>SOCI 307  Social Movements and Political Protest</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOCI 340  Power, Politics, and Society</td>
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</table>

Total Credits 3-6

Nonprofit Course

Select one nonprofit course from the following: 4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GOVT 358  Nonprofit Financial Planning</td>
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<tr>
<td></td>
<td>INTS 331  The Nonprofit Sector (Mason Core) (p. 142)</td>
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<td></td>
<td>INTS 431  Principles of Fund Raising</td>
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</table>

Total Credits 4

Ethics Course

Select one ethics course from the following: 3-4

<table>
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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>COMM 454  Free Speech and Ethics (Mason Core) (p. 142)</td>
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<td></td>
<td>INTS 404  Ethics and Leadership</td>
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<tr>
<td></td>
<td>PHIL 243  Global Environmental Ethics (Mason Core) (p. 142)</td>
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<tr>
<td></td>
<td>PHIL 305  Business Ethics</td>
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</tr>
<tr>
<td></td>
<td>PHIL 355  Theories of Ethics</td>
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</tr>
<tr>
<td></td>
<td>PHIL 358  Ethics and Economics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3-4

Social Justice and Human Rights (SJHR)

Students complete the following coursework:
### Integrative Studies, BA

#### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>INTS 337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
<td>3</td>
</tr>
<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

#### Domestic Rights and Justice

Select a minimum of 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>INTS 336</td>
<td>Poverty, Wealth and Inequality in the US (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 347</td>
<td>Gender Representation in Popular Culture (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 438</td>
<td>Representations of Race (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td>3</td>
</tr>
<tr>
<td>WMST 208</td>
<td>Introduction to Lesbian, Gay, Bisexual, Transgender, and Queer Studies</td>
<td>3</td>
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</table>

Total Credits: 6

#### Global Rights and Justice

Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 346</td>
<td>Refugee and Internal Displacement (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 417</td>
<td>Human Trafficking and the International Community</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 331</td>
<td>Refugees (Mason Core) (p. 142)</td>
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<tr>
<td>CONF 394</td>
<td>Human Rights and Inequality</td>
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<td>CRIM 308</td>
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<tr>
<td>WMST 314</td>
<td>Stories of Gender, Race, and Social Action</td>
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Total Credits: 6

#### Environmental and Ecological Justice

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<tr>
<td>INTS 334</td>
<td>Environmental Justice (Mason Core) (p. 142)</td>
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or INTS 338 | Animal Rights and Humane Education                                    | 3-4     |

Total Credits: 3-4

#### Activism and Social Change

Select 7-8 credits from the following:

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<tr>
<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142)</td>
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<tr>
<td>INTS 346</td>
<td>Art as Social Action (Mason Core) (p. 142)</td>
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<tr>
<td>INTS 436</td>
<td>Social Justice Education (Mason Core) (p. 142)</td>
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<tr>
<td>PSYC 461</td>
<td>Special Topics</td>
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<tr>
<td>SOCI 307</td>
<td>Social Movements and Political Protest</td>
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Total Credits: 7-8

#### Electives

Select 9 credits from the following:

Any course chosen from the above categories not already taken to meet a concentration requirement

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<td>Special Topics in African and African American Studies (when topic is relevant with prior written approval of advisor)</td>
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<tr>
<td>ANTH 365</td>
<td>Scientific Racism and Human Variation</td>
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<td>Environment and Culture</td>
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<td>Gender, Sexuality, and Culture</td>
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<td>Gender, Race, and Class in the Media</td>
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<td>CULT 320</td>
<td>Globalization and Culture</td>
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<td>Disability in American Culture (Mason Core) (p. 142)</td>
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<td>The Human Dimensions of Global Climate Change</td>
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<td>Multilingualism, Identity, and Power (Mason Core) (p. 142)</td>
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<td>GOVT 445</td>
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<td>Race and Gender in American Sports</td>
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<tr>
<td>HIST 340</td>
<td>Basketball and the American Experience</td>
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<td>Women in Islamic Society (Mason Core) (p. 142)</td>
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<td>Law and Justice (Mason Core) (p. 142)</td>
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<td>Violence and Gender</td>
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<td>Spirituality and Conflict Transformation (Mason Core) (p. 142)</td>
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<td>Introduction to Childhood Studies (Mason Core) (p. 142)</td>
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<td>Construction of Differences: Race, Class, and Gender (Mason Core) (p. 142)</td>
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<td>Neighborhood, Community, and Identity (Mason Core) (p. 142)</td>
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<td>Leadership in a Changing Environment</td>
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<td>Critical Race Studies (Mason Core) (p. 142)</td>
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<td>Global Environmental Ethics (Mason Core) (p. 142)</td>
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<td>Social Inequality (Mason Core) (p. 142)</td>
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<td>SOCI 382</td>
<td>Education in Contemporary Society</td>
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<td>Introduction to Women and Gender Studies (Mason Core) (p. 142)</td>
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<td>WMST 307</td>
<td>Women and Work</td>
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<td>WMST 402</td>
<td>Queer Theory</td>
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Other relevant course with prior written approval of advisor
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<td>Contemporary Microeconomic Principles (Mason Core)</td>
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<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles (Mason Core)</td>
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<td>GGS 103</td>
<td>Human Geography (Mason Core)</td>
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<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core)</td>
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<td>HIST 121</td>
<td>Formation of the American Republic (Mason Core)</td>
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<td>Introduction to World History (Mason Core)</td>
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<td>History of Virginia to 1800</td>
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<td>Select 9 credits of upper-division HIST coursework (p. 1818)</td>
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<td>Select 15 credits from the following:</td>
<td>any GOVT course (p. 1774)</td>
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<td></td>
<td>INTS 422</td>
<td>An Experiential Approach to American Foreign Policy</td>
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Total Credits: 51

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<td>Introduction to Women and Gender Studies (Mason Core)</td>
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<td>WMST 330</td>
<td>Theoretical Perspectives in Women and Gender Studies</td>
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<td>Feminist Approaches to Social Research</td>
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<th>Queer and Sexuality Studies</th>
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<td>Select one course from the following:</td>
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<td>Introduction to Lesbian, Gay, Bisexual, Transgender, and Queer Studies</td>
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<td>WMST 300</td>
<td>Current Issues in Women and Gender Studies</td>
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<td>WMST 402</td>
<td>Queer Theory</td>
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<td>WMST 407</td>
<td>Transnational Sexualities</td>
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<td>WMST 408</td>
<td>Gender, Sexuality, and Human Rights</td>
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<td>WMST 409</td>
<td>Gender, Sexuality, and International Migration</td>
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<td>WMST 412</td>
<td>Challenging Pride: Bias Within the LGBTQ Community</td>
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<td>WMST 450</td>
<td>Current Topics in Women and Gender Studies</td>
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<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core)</td>
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<td>INTS 310</td>
<td>Violence and Gender</td>
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<td></td>
<td>INTS 337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
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<td>INTS 400</td>
<td>Temptress: Constructs of Sex and Power</td>
<td>3-6</td>
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<td>Social Movements and Community Activism (Mason Core)</td>
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<td>INTS 400</td>
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<td>Gender, Sexuality, and Culture</td>
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<td>Race and Gender in American Sports</td>
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<td>U.S. Women’s History</td>
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<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core)</td>
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<td>Temptress: Constructs of Sex and Power</td>
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<td>Philosophy, Race, and Gender</td>
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<td>RELI 407</td>
<td>Women in the World’s Religions</td>
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<td>Black Social Movements: Gendering of Violence and Activism</td>
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<td>Women During the Enslavement Era</td>
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<td>Women and Work</td>
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<td>COMM 465</td>
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INTS 416 Refugee and Internal Displacement (Mason Core) | 3-4 |
INTS 437 Critical Race Studies (Mason Core) | 3-4 |
INTS 438 Representations of Race (Mason Core) | 3-4 |
SOCI 355 Social Inequality (Mason Core) | 3-4 |
WMST 309 Black Social Movements: Gendering of Violence and Activism | 3-4 |
WMST 315 Women During the Enslavement Era | 3-4 |
WMST 316 Gendered Pan-Africanism | 3-4 |
WMST 405 Social Dynamics of Family Violence | 3-4 |
WMST 406 Gender and Violence in Social Institutions | 3-4 |
Other WMST special topics courses with advisor approval | 3-4 |

INTS 416 Refugee and Internal Displacement (Mason Core) | 3-4 |
INTS 437 Critical Race Studies (Mason Core) | 3-4 |
INTS 438 Representations of Race (Mason Core) | 3-4 |
SOCI 355 Social Inequality (Mason Core) | 3-4 |
WMST 309 Black Social Movements: Gendering of Violence and Activism | 3-4 |
WMST 315 Women During the Enslavement Era | 3-4 |
WMST 316 Gendered Pan-Africanism | 3-4 |
WMST 405 Social Dynamics of Family Violence | 3-4 |
WMST 406 Gender and Violence in Social Institutions | 3-4 |
Other WMST special topics courses with advisor approval | 3-4 |

INTS 416 Refugee and Internal Displacement (Mason Core) | 3-4 |
INTS 437 Critical Race Studies (Mason Core) | 3-4 |
INTS 438 Representations of Race (Mason Core) | 3-4 |
SOCI 355 Social Inequality (Mason Core) | 3-4 |
WMST 309 Black Social Movements: Gendering of Violence and Activism | 3-4 |
WMST 315 Women During the Enslavement Era | 3-4 |
WMST 316 Gendered Pan-Africanism | 3-4 |
WMST 405 Social Dynamics of Family Violence | 3-4 |
WMST 406 Gender and Violence in Social Institutions | 3-4 |
Other WMST special topics courses with advisor approval | 3-4 |

INTS 416 Refugee and Internal Displacement (Mason Core) | 3-4 |
INTS 437 Critical Race Studies (Mason Core) | 3-4 |
INTS 438 Representations of Race (Mason Core) | 3-4 |
SOCI 355 Social Inequality (Mason Core) | 3-4 |
WMST 309 Black Social Movements: Gendering of Violence and Activism | 3-4 |
WMST 315 Women During the Enslavement Era | 3-4 |
WMST 316 Gendered Pan-Africanism | 3-4 |
WMST 405 Social Dynamics of Family Violence | 3-4 |
WMST 406 Gender and Violence in Social Institutions | 3-4 |
Other WMST special topics courses with advisor approval | 3-4 |

INTS 416 Refugee and Internal Displacement (Mason Core) | 3-4 |
INTS 437 Critical Race Studies (Mason Core) | 3-4 |
INTS 438 Representations of Race (Mason Core) | 3-4 |
SOCI 355 Social Inequality (Mason Core) | 3-4 |
WMST 309 Black Social Movements: Gendering of Violence and Activism | 3-4 |
WMST 315 Women During the Enslavement Era | 3-4 |
WMST 316 Gendered Pan-Africanism | 3-4 |
WMST 405 Social Dynamics of Family Violence | 3-4 |
WMST 406 Gender and Violence in Social Institutions | 3-4 |
Other WMST special topics courses with advisor approval | 3-4 |

INTS 416 Refugee and Internal Displacement (Mason Core) | 3-4 |
INTS 437 Critical Race Studies (Mason Core) | 3-4 |
INTS 438 Representations of Race (Mason Core) | 3-4 |
SOCI 355 Social Inequality (Mason Core) | 3-4 |
WMST 309 Black Social Movements: Gendering of Violence and Activism | 3-4 |
WMST 315 Women During the Enslavement Era | 3-4 |
WMST 316 Gendered Pan-Africanism | 3-4 |
WMST 405 Social Dynamics of Family Violence | 3-4 |
WMST 406 Gender and Violence in Social Institutions | 3-4 |
Other WMST special topics courses with advisor approval | 3-4 |
Integrative Studies, BA (Social Science for Education Concentration)/Curriculum and Instruction, Accelerated MEd (Secondary Education History and Social Science Concentration)

**Overview**

Highly-qualified Mason undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BA in Integrative Studies (p. 593) (concentration in social science for education) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education history and social science) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the School of Integrative Studies (p. 574) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

**Accelerated Option Requirements**

Students complete the following courses in their senior year:

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While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

**Integrative Studies, BA**

The accelerated master’s programs in the list below specify the BA in integrative studies as a feeder degree for their programs. It is important to note, however, that many accelerated master’s programs are available for any bachelor’s degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

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**Individualized Concentration (IND)**

With approval of the executive director, students may construct an individualized concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Total Credits 30

**Additional Electives**

Any remaining credits may be completed with electives to bring the degree total to 120.

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**Accelerated Master’s**

The accelerated master’s programs in the list below specify the BA in integrative studies as a feeder degree for their programs. It is important to note, however, that many accelerated master’s programs are available for any bachelor’s degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.
Bachelor's Degree (selected)/
Interdisciplinary Studies, Accelerated
MAIS (Social Justice and Human Rights
Concentration)

Overview
Highly-qualified undergraduates in select majors (listed below) may apply
to the accelerated master's degree in interdisciplinary studies with a
concentration in social justice and human rights (p. 542). If accepted,
and depending on their undergraduate major, students will be able to
earn an undergraduate degree in their chosen major and a master's in
interdisciplinary studies with a concentration in social justice and human
rights after satisfactory completion of 150 credits, sometimes within five
years.

For more detailed information, see AP6.7 Bachelor's/Accelerated
Master's Degrees (p. 93). For policies governing all graduate degrees,
see AP6 Graduate Policies (p. 90).

Selected Majors
Anthropology (p. 497), Environmental and Sustainability Studies
(p. 576), Sociology (p. 507), English (p. 370), History
(p. 394), Philosophy (p. 442), Conflict Analysis and Resolution
(p. 938), Psychology (p. 461), Government and International Politics
(p. 972), Integrative Studies (p. 593), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must
meet the admission standards and application requirements for graduate
study as specified in Graduate Admissions (p. 68). For information
specific to the accelerated MAIS, see Application Requirements and
Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on
the departmental web site.

Accelerated Option Requirements
While undergraduate students, accelerated master's students
complete INTS 540 Contemporary Issues in Social Justice Human
Rights and one course chosen from the list of electives for the MAIS
concentration in social justice and human rights as indicated on their
Accelerated Master's Program Application with a minimum grade of
B in each course. Once admitted to the accelerated master's pathway,
students must maintain a minimum cumulative GPA of 3.25 in all course
work. Upon completion and conferral of the undergraduate degree in
the semester indicated in the application, they submit the Bachelor's/
Accelerated Master's Transition Form and are admitted to graduate
status.

As graduate students, accelerated master's students have an advanced
standing. They must meet all master's degree requirements except for
the two courses (6 credits) they completed as undergraduates. Students
must begin their master's program the semester immediately following
conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve
graduate credit (chosen from the list of electives for the MAIS
concentration in social justice and human rights). These credits do not
apply to the undergraduate degree. The ability to take courses for reserve
graduate credit is available to all high achieving undergraduates with
the permission of the program. Permission to take a graduate course
for reserve graduate credit is normally granted only to Mason seniors
within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment
by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Integrative Studies, BS

Banner Code: LA-BS-INTS

Academic Advising
402 Enterprise Hall
Fairfax Campus
Email: sisinfo@gmu.edu
Website: integrative.gmu.edu/programs/la-bs-ints

The bachelor of science in Integrative Studies brings together research,
theory and practice across numerous disciplines. Integrative studies
majors select a multidisciplinary concentration or work with student
services staff to develop their own concentration, uniquely suited to
their academic and career goals. Integrative studies majors explore new
topics and experiences while gaining the knowledge and skills needed
to enter the workforce. Required coursework is offered in small classes
with ample room for discussion, collaborative learning, and experiential
learning, including in-community projects, volunteer opportunities, field
work, internships and work with faculty on research that directly engages
current social and global challenges.

The BS in Integrative Studies with a concentration in Applied Global
Conservation is a Green Leaf Program (p. 107).

Admissions & Policies

Policies
Students must fulfill all Requirements for Bachelor's Degrees
(p. 87) including the Mason Core (p. 142). Integrative studies students
may fulfill lower level Mason Core requirements through approved
integrative studies (INTS) coursework. Students pursuing a BS in
integrative studies must complete a minimum of 30 credits of (INTS)
coursework, with at least 15 credits at the 300 and 400 levels. These
30 INTS credits fulfill the writing intensive and synthesis Mason Core
requirements.

Students must complete ENGH 302 Advanced Composition (Mason
Core) (p. 142). A maximum of 15 credits of INTS 399 Study Abroad can
be applied to the major. Students must have a minimum GPA of 2.00 in
courses applied to the major. Before registering, students should see an
advisor to help plan their degree program to meet Mason requirements.
The advisor also can help students choose electives or a minor.

For policies governing all undergraduate degrees, see AP5 Undergraduate
Policies (p. 87).
Requirements

Degree Requirements
Total credits: minimum 120

This is a Green Leaf program.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 601) tab.

Integrative studies students complete INTS 391 Understanding Integrative Studies and choose a concentration from the options below. Before registering, students should see an advisor to help plan their degree program to meet Mason requirements. The advisor also can help students choose electives or a minor.

Required Course
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 391</td>
<td>Understanding Integrative Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in the Major
A concentration is the equivalent of a major in a traditional degree program. Students choose from an established multidisciplinary concentration below or create with faculty an individualized program of study to fit their interests and needs. Concentration coursework combines integrative studies (INTS) classes with coursework from other Mason units (departments, schools, and colleges). While fulfilling the concentration requirements, students are also responsible for completing a minimum of 30 credits of INTS coursework. Any INTS courses required for the concentration will apply. Students must present a minimum GPA of 2.00 in courses applied to the concentration.

Concentrations
- Applied Global Conservation (AGCN) (p. 602)
- Life Sciences (LIFS) (p. 603)
- Individualized Concentration (IND) (p. 605)

Applied Global Conservation (AGCN)
Total credits: 41-45

Core Courses in Global Conservation
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 210</td>
<td>Sustainable World (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>INTS 401</td>
<td>Conservation Biology (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
<td>6</td>
</tr>
<tr>
<td>or INTS 403</td>
<td>Conservation Behavior (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 16

Additional Global Environmental Course
Select one course from the following: 3-6
- ANTH 370 Environment and Culture
- ANTH 400 Engaging the World: Anthropological Perspectives (Mason Core) (p. 142)
- EVPP 337 Environmental Policy Making in Developing Countries

Statistics
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>or BIOL 312</td>
<td>Biostatistics for Bioinformatics</td>
<td>3-4</td>
</tr>
<tr>
<td>or BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Credits 3-4

Additional Learning Community
In addition to the courses below, INTS 375 Special Topics, INTS 395 Field-Based Work, and INTS 398 Field-Based Work may be applied to the concentration when the topic is relevant to conservation studies.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 305</td>
<td>Conflict Resolution and Transformation</td>
<td>3-6</td>
</tr>
<tr>
<td>INTS 311</td>
<td>The Mysteries of Migration: Consequences for Conservation (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>INTS 334</td>
<td>Environmental Justice (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
</tbody>
</table>

Natural Science and Policy
Students may complete this requirement through regular coursework or through either option of the Smithsonian-Mason Semester Program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three credits of INTS 390</td>
<td>International Internship</td>
<td>3</td>
</tr>
<tr>
<td>or INTS 395</td>
<td>Field-Based Work</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 310</td>
<td>Biodiversity</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 330</td>
<td>Biodiversity Lab and Recitation</td>
<td>2</td>
</tr>
<tr>
<td>BIOL 377</td>
<td>Applied Ecology</td>
<td>3</td>
</tr>
<tr>
<td>or EVPP 361</td>
<td>Introduction to Environmental Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 16

Smithsonian-Mason Semester Program
Students complete one of the options offered through the Mason Center for Conservation Studies in cooperation with the Smithsonian Conservation Biology Institute. In this integrated series of courses, taken together in one semester, students live on site at the institute in Front Royal, VA. Students who apply this coursework to the concentration cannot also apply it to the minor in Conservation Studies.
Conservation, Biodiversity and Society Option (16 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 320</td>
<td>Conservation in Practice</td>
<td>3</td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td>3</td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td>4</td>
</tr>
<tr>
<td>CONS 410</td>
<td>Human Dimensions in Conservation (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CONS 490</td>
<td>RS: Integrated Conservation Strategies (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 16

Wildlife Ecology and Conservation Option (16 credits)
Offered only in Fall semesters, students complete four required courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 404</td>
<td>Biodiversity Monitoring</td>
<td>4</td>
</tr>
<tr>
<td>CONS 405</td>
<td>Landscape and Macrosystems Ecology</td>
<td>4</td>
</tr>
<tr>
<td>CONS 496</td>
<td>Research in Conservation (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 16

Endangered Species and Conservation Option (16 credits)
Offered only in Spring semesters, students complete four required courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 406</td>
<td>Small Population Management</td>
<td>4</td>
</tr>
<tr>
<td>CONS 491</td>
<td>RS: Conservation Management Planning (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CONS 496</td>
<td>Research in Conservation (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 16

Life Sciences (LIFS)
Students must complete one of the following emphases.

Preoccupational Therapy Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>One SOCI course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 151</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 309</td>
<td>or Bioethics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 325</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select at least 6 credits of relevant upper division INTS coursework chosen with an advisor.

Total Credits 32

Premedical Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 483</td>
<td>General Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>and Organic Chemistry Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>and Organic Chemistry Lab II</td>
<td></td>
</tr>
<tr>
<td>MATH 110</td>
<td>Introductory Probability (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 113</td>
<td>or Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 244</td>
<td>College Physics I Lab (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 245</td>
<td>College Physics II (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>PHYS 246</td>
<td>College Physics II Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHIL 151</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 309</td>
<td>or Bioethics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
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</tbody>
</table>

Total Credits 50-52

Predental Emphasis

<table>
<thead>
<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>3</td>
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<tr>
<td>CHEM 318</td>
<td>Organic Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 463</td>
<td>General Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 465</td>
<td>Biochemistry Lab</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 103</td>
<td>Physics and Everyday Phenomena I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
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</tr>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
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<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>4</td>
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<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
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<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
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<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>3</td>
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<tr>
<td>CHEM 318</td>
<td>Organic Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 151</td>
<td>Introduction to Ethics</td>
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<tr>
<td>PHYS 103</td>
<td>Physics and Everyday Phenomena I (Mason Core) (p. 142)</td>
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<tr>
<td>PHYS 211</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
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<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
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<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 463</td>
<td>General Biochemistry I</td>
<td>4</td>
</tr>
<tr>
<td>PHYL 151</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>48</td>
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</table>

### Prephysical Therapy Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>Chemical Science in a Modern Society (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

### Prepharmacy Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 151</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 103</td>
<td>Physics and Everyday Phenomena I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 211</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
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</table>

### Prephysical Therapy Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Prepharmacy Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 124</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Total Credits

- Prepharmacy Emphasis: 43 credits
- Prephysical Therapy Emphasis: 48 credits
- Prephysical Therapy Emphasis: 46 credits
### Individualized Concentration (IND)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With approval of the executive director, students may construct an individualized concentration.</td>
<td>30</td>
</tr>
</tbody>
</table>

### Additional Electives

Any remaining credits may be completed with electives to bring the degree total to 120.

### Accelerated Master’s

The accelerated master’s program listed below specifies the BS in integrative studies as a feeder degree for its program. It is important to note, however, that many accelerated master’s programs are available for any bachelor’s degree at Mason, including this one. See the full list of degrees (http://catalog.gmu.edu/programs/#filter=filter_24) with accelerated programs at George Mason.

#### Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

**Overview**

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master’s in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

#### Selected Majors

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

#### Academic Advising

402 Enterprise Hall
Fairfax Campus
Website: integrative.gmu.edu/programs/la-minor-nc-lshp

This minor prepares students for transformative leadership in campus, local, national, and global contexts. Interdisciplinary and integrative classes examine leadership from multiple perspectives and disciplines, offering an understanding of socially-responsible leadership with an emphasis on community action. Through the required coursework and experiential learning, students critically examine diverse theories, research, and perspectives on leadership and are encouraged to explore topics such as social change and globalization, creative conflict resolution, the nature of power, oppression and influence, innovation, and systemic leadership. Civic engagement and multicultural competence are viewed as necessary requirements for leadership.

This minor is open to students in all academic programs, schools, and majors.

#### Faculty

Holder, Lennon, Lucas, Owen (director), Wagner
Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: minimum of 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 606) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 204</td>
<td>Leadership Theory and Practice</td>
<td>4</td>
</tr>
<tr>
<td>INTS 404</td>
<td>Ethics and Leadership</td>
<td>4-6</td>
</tr>
<tr>
<td>or MLSC 400 &amp; MLSC 402</td>
<td>Leadership and Management and Leadership and Ethics</td>
<td>3-4</td>
</tr>
<tr>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 12-14

Electives

Select at least one course from the following: ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 309</td>
<td>Art as Social Action</td>
<td>3-4</td>
</tr>
<tr>
<td>AVT 370</td>
<td>Entrepreneurship in the Arts</td>
<td></td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td></td>
</tr>
<tr>
<td>EDUC 303</td>
<td>Introduction to Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>FNAN 401</td>
<td>Advanced Financial Management</td>
<td></td>
</tr>
<tr>
<td>GOVT 430</td>
<td>Comparative Political Leadership</td>
<td></td>
</tr>
<tr>
<td>INTS 346</td>
<td>Art as Social Action (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 356</td>
<td>Foundations of Resilience and Well-Being</td>
<td></td>
</tr>
<tr>
<td>INTS 406</td>
<td>Global Leadership (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 451</td>
<td>Leadership and Organizational Problem-Solving</td>
<td></td>
</tr>
<tr>
<td>IT 304</td>
<td>IT in the Global Economy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MGMT 413</td>
<td>Organizational Development and Management Consulting</td>
<td></td>
</tr>
<tr>
<td>MKTG 471</td>
<td>Marketing Management</td>
<td></td>
</tr>
<tr>
<td>MLSC 300</td>
<td>Applied Leadership I</td>
<td></td>
</tr>
<tr>
<td>MLSC 400</td>
<td>Leadership and Management</td>
<td></td>
</tr>
<tr>
<td>MLSC 402</td>
<td>Leadership and Ethics</td>
<td></td>
</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>MBUS 302</td>
<td>Managing Information in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>MBUS 305</td>
<td>Introduction to International Business (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Other courses may be applied to this requirement with prior written approval of the director.

Multimedia Minor

Banner Code: MM

Academic Advising

402 Enterprise Hall
Fairfax Campus

Email: sisinfo@gmu.edu
Website: integrative.gmu.edu/programs/la-minor-nc-mm

In this minor, students learn how to create original work and communicate with others through the fusion of images, text, sound, and video. Students analyze and incorporate into their productions contemporary design principles and current software applications. As part of this process, students are encouraged to focus on how multimedia technologies, which offer new tools for investigating and disseminating ideas, can enhance undergraduate research and writing. These skills, now important in most academic disciplines, are also increasingly valuable not only in the specialized information technology industries, but also in business, education, and politics.

Faculty

Chung, Higgins, Martin, K. Scott, L. Smith (director), Weinberger, White

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18-20

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 606) tab.
Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 104</td>
<td>Two-Dimensional Design and Color (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>COMM 157</td>
<td>Digital Media Workshop</td>
<td>1</td>
</tr>
<tr>
<td>or INTS 195</td>
<td>Field-Based Work</td>
<td></td>
</tr>
<tr>
<td>AVT 180</td>
<td>New Media in the Creative Arts (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>or INTS 249</td>
<td>Digital Literacy (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 8-9

Electives

Select 9-11 credits from the following: ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 280</td>
<td>Introduction to New Media Arts</td>
<td></td>
</tr>
<tr>
<td>AVT 382</td>
<td>2D Experimental Animation</td>
<td></td>
</tr>
<tr>
<td>COMM 360</td>
<td>Digital Postproduction</td>
<td></td>
</tr>
<tr>
<td>COMM 435</td>
<td>Digital Communication</td>
<td></td>
</tr>
<tr>
<td>INTS 345</td>
<td>Introduction to Multimedia (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 376</td>
<td>Rhetoric and New Media</td>
<td></td>
</tr>
<tr>
<td>ENGH 377</td>
<td>Digital Creative Writing</td>
<td></td>
</tr>
<tr>
<td>ENGH 497</td>
<td>Topics in Creative Writing</td>
<td></td>
</tr>
<tr>
<td>INTS 348</td>
<td>Digital Futures</td>
<td></td>
</tr>
<tr>
<td>INTS 445</td>
<td>Multimedia Design (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9-11

¹ No more than six credits can be taken in any one college or department.

Nonprofit Studies Minor

Banner Code: NPS

Academic Advising

402 Enterprise Hall
Fairfax Campus

Email: sisinfo@gmu.edu
Website: integrative.gmu.edu/programs/la-minor-ncc-nps

Nonprofit organizations significantly contribute to the provision of human services, access to the arts, education, recreation and health care, and protection of the environment. Effective nonprofit organizations provide direct services, influence public policy and build a civil society. The minor is designed to introduce students to the theoretical foundations and practical skills needed to be successful in this sector. Through heavy emphasis on experiential learning with the many excellent nonprofit organizations in our region, students learn to apply theory within the context of today’s complex and rapidly changing environment.

Faculty

Andere, Johnson, Unruh

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 607) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>INTS 431</td>
<td>Principles of Fund Raising</td>
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</table>

Select one course (3-4 credits) from the following: ³

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 389</td>
<td>Public Relations for Associations and Nonprofits</td>
<td></td>
</tr>
<tr>
<td>GOVT 354</td>
<td>Nonprofit Sector in Society</td>
<td></td>
</tr>
<tr>
<td>GOVT 358</td>
<td>Nonprofit Financial Planning</td>
<td></td>
</tr>
<tr>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 11-12

¹ These courses are approved by the School of Integrative Studies to earn experiential learning credits.

Electives

Select 3-4 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 370</td>
<td>Entrepreneurship in the Arts</td>
<td>3-4</td>
</tr>
<tr>
<td>COMM 335</td>
<td>Organizational Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 389</td>
<td>Public Relations for Associations and Nonprofits (if not taken as required course)</td>
<td></td>
</tr>
<tr>
<td>CONF 101</td>
<td>Conflict and Our World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td></td>
</tr>
<tr>
<td>ECON 309</td>
<td>Economic Problems and Public Policies (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 489</td>
<td>Proposal Writing and Development</td>
<td></td>
</tr>
<tr>
<td>GOVT 358</td>
<td>Nonprofit Financial Planning</td>
<td></td>
</tr>
<tr>
<td>GOVT 480</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>INTS 210</td>
<td>Sustainable World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 211</td>
<td>Introduction to Conservation Studies (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142) ¹</td>
<td></td>
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<tr>
<td>INTS 305</td>
<td>Conflict Resolution and Transformation</td>
<td></td>
</tr>
</tbody>
</table>
INTS 375 Special Topics (when the topic is relevant with prior written approval of the director)
INTS 390 International Internship (when the topic is relevant with prior written approval of the director) ¹
INTS 397 Add-On Experiential Learning
INTS 406 Global Leadership (Mason Core) (p. 142)
INTS 410 Contemporary Health Issues
INTS 422 An Experiential Approach to American Foreign Policy
INTS 435 Leadership in a Changing Environment (if not taken as required course)
INTS 490 Internship (when the topic is relevant with prior written approval of the director) ¹
MBUS 301 Managing People and Organizations in a Global Economy
PSYC 427 Community Engagement for Social Change (Mason Core) (p. 142)
SOCI 492 Sociology of Organizations
SOCW 483 Selected Topics in Social Work Intervention
TOUR 220 Introduction to Event Management

Total Credits 3-4

¹ These courses are approved by the School of Integrative Studies to earn experiential learning credits.

Social Innovation Minor

Banner Code: SINN

Academic Advising
402 Enterprise Hall
Fairfax Campus

Website: integrative.gmu.edu/programs/la-minor-nc-sinn

Many approaches to addressing social and environmental issues start from a single professional perspective. Engineers, for example, will pursue a technical solution whereas a businessperson might employ an entrepreneurial approach. While professional avenues like these are powerful, a novel method is emerging known as social innovation. Social innovators develop solutions by integrating across the professional sectors of government, business, and nonprofit in ways that open new opportunities for addressing social and environmental challenges. This interdisciplinary minor in social innovation is designed to introduce students to the foundations of social innovation and the practical techniques social innovators employ to create solutions that balance people, profit, and the planet (i.e. the triple-bottom line). Through an emphasis on experiential learning in team-based innovation projects, students will integrate theory and practice as they develop the knowledge and skills of social innovators.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15-16

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 606) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
<td>4</td>
</tr>
<tr>
<td>INTS 450</td>
<td>Social Innovation in Action</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>8</td>
</tr>
</tbody>
</table>

Electives

Select seven-eight credits from the following: 7-8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 370</td>
<td>Entrepreneurship in the Arts</td>
<td></td>
</tr>
<tr>
<td>COMM 335</td>
<td>Organizational Communication</td>
<td></td>
</tr>
<tr>
<td>ECON 309</td>
<td>Economic Problems and Public Policies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GOVT 353</td>
<td>Social Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>GOVT 358</td>
<td>Nonprofit Financial Planning</td>
<td></td>
</tr>
<tr>
<td>INTS 210</td>
<td>Sustainable World (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 300</td>
<td>Law and Justice (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 304</td>
<td>Social Movements and Community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Activism (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 316</td>
<td>Introduction to Childhood Studies (Mason</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Core) (p. 142)</td>
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<tr>
<td>INTS 319</td>
<td>Contemporary Youth Studies (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 334</td>
<td>Environmental Justice (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 337</td>
<td>Social Justice Consciousness and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personal Transformation</td>
<td></td>
</tr>
<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 370</td>
<td>Sustainable Food Systems</td>
<td></td>
</tr>
<tr>
<td>INTS 371</td>
<td>Food Systems and Policy (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 375</td>
<td>Special Topics</td>
<td></td>
</tr>
<tr>
<td>INTS 390</td>
<td>International Internship</td>
<td></td>
</tr>
<tr>
<td>INTS 401</td>
<td>Conservation Biology (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 406</td>
<td>Global Leadership (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
</tbody>
</table>
Social Justice Minor

Banner Code: SOCJ

Academic Advising
402 Enterprise Hall
Fairfax Campus

Email: sisinfo@gmu.edu
Website: integrative.gmu.edu/programs/la-minor-ncc-socj

The minor engages students in both a critical examination of various forms of injustice (such as poverty, racism, and speciesism, and environmental degradation) and an exploration of strategies for creating and sustaining an equitable and just world. The minor is interdisciplinary in nature, drawing on disciplines as distinct as critical race studies, critical animal studies, and environmental science. It is designed particularly to help students consider the intersectional nature of all types of exploitation and their related movements for liberation.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Minor Requirements

Total credits: minimum 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 609) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS</td>
<td>Social Justice</td>
<td></td>
</tr>
<tr>
<td>337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
<td>6-7</td>
</tr>
<tr>
<td>362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>436</td>
<td>Social Justice Education (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Environmental or Ecological Justice

Select one course from the following: 3-6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 334</td>
<td>Environmental Justice (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 338</td>
<td>Animal Rights and Humane Education</td>
</tr>
<tr>
<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
</tr>
</tbody>
</table>

Activism and Advocacy

Select one course from the following: 3-4

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 336</td>
<td>Poverty, Wealth and Inequality in the US (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 346</td>
<td>Art as Social Action (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 416</td>
<td>Refugee and Internal Displacement (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

Total Credits 12-17

Electives

Select one course from the following that is not being applied to the core requirement: 3-6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 394</td>
<td>Human Rights and Inequality</td>
</tr>
<tr>
<td>EDUC 301</td>
<td>Educating Diverse and Exceptional Learners</td>
</tr>
<tr>
<td>GOVT 445</td>
<td>Human Rights</td>
</tr>
<tr>
<td>HIST 337</td>
<td>Race and Gender in American Sports</td>
</tr>
<tr>
<td>INTS 101</td>
<td>Narratives of Identity (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 210</td>
<td>Sustainable World (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 300</td>
<td>Law and Justice (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 310</td>
<td>Violence and Gender</td>
</tr>
<tr>
<td>INTS 336</td>
<td>Poverty, Wealth and Inequality in the US (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 346</td>
<td>Art as Social Action (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 347</td>
<td>Gender Representation in Popular Culture (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
</tr>
<tr>
<td>INTS 406</td>
<td>Global Leadership (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 416</td>
<td>Refugee and Internal Displacement (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 417</td>
<td>Human Trafficking and the International Community</td>
</tr>
<tr>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
</tr>
<tr>
<td>INTS 436</td>
<td>Social Justice Education (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 437</td>
<td>Critical Race Studies (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 438</td>
<td>Representations of Race (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>
The minor provides students with a well-grounded understanding of the nature of human consciousness, including both the historical foundations and modern research findings. Through the required coursework, students develop an ability to implement personal practices that foster deeper self-awareness, the regulation of stress factors in his or her life, and an emerging sense of meaning for his or her life. Students will learn to creatively and effectively apply principles from the exploration of consciousness and transformation to his or her own field of study.

Faculty
Fuerstes, Guenther, Thurston

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor. For policies governing all minors, see the Undergraduate Policies (p. 87) section of this catalog.

Requirements

Minor Requirements
Total credits: 15

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 610) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTS 355</td>
<td>Mindfullness, Meaning Well-Being</td>
<td>3</td>
</tr>
<tr>
<td>GCH 325</td>
<td>Stress and Well-Being (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives

Select two to three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 304</td>
<td>Foundations of Health Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>COMM 334</td>
<td>Family and Health Communication</td>
<td></td>
</tr>
<tr>
<td>GCH 310</td>
<td>Health Behavior Theories</td>
<td></td>
</tr>
<tr>
<td>GCH 332</td>
<td>Health and Disease</td>
<td></td>
</tr>
<tr>
<td>GCH 350</td>
<td>Health Promotion and Education</td>
<td></td>
</tr>
<tr>
<td>GCH 360</td>
<td>Health and Environment</td>
<td></td>
</tr>
<tr>
<td>GCH 445</td>
<td>Social Determinants of Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or SOCW 445 Social Determinants of Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 351</td>
<td>Relationship Health</td>
<td></td>
</tr>
<tr>
<td>HEAL 372</td>
<td>Health Communication</td>
<td></td>
</tr>
<tr>
<td>INTS 305</td>
<td>Conflict Resolution and Transformation</td>
<td></td>
</tr>
<tr>
<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 315</td>
<td>Spirituality and Conflict Transformation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
<td></td>
</tr>
<tr>
<td>INTS 356</td>
<td>Foundations of Resilience and Well-Being</td>
<td></td>
</tr>
<tr>
<td>INTS 455</td>
<td>Consciousness and Transformation in Action</td>
<td></td>
</tr>
<tr>
<td>MUSI 455</td>
<td>Music as a Healing Art</td>
<td></td>
</tr>
<tr>
<td>MUSI 477</td>
<td>Music and Consciousness</td>
<td></td>
</tr>
<tr>
<td>PHIL 251</td>
<td>Happiness and the Good Life</td>
<td></td>
</tr>
<tr>
<td>PRLS 300</td>
<td>People with Nature</td>
<td></td>
</tr>
<tr>
<td>PSYC 408</td>
<td>Psychological Fitness</td>
<td></td>
</tr>
<tr>
<td>PSYC 417</td>
<td>Science of Well Being</td>
<td></td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td></td>
</tr>
<tr>
<td>RELI 341</td>
<td>Global Perspectives on Spirituality and Healing (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>UNIV 370</td>
<td>Special Topics (Dimensions of Well-Being)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9</td>
</tr>
</tbody>
</table>

Smithsonian-Mason School of Conservation

Smithsonian Conservation Biology Institute
1500 Remount Road
Front Royal, VA 22630
Phone: 540-635-0115 (direct)
Website: smconservation.gmu.edu
The Smithsonian Institution and George Mason University partnered to establish the Smithsonian-Mason School of Conservation (SMSC) to provide innovative education for current and future generations of global conservation professionals, leaders, and practitioners.

SMSC offers a range of residential, hands-on, interdisciplinary programs in conservation biology for undergraduate and graduate students and professionals on the grounds of SCBI in Front Royal, Virginia. Highly qualified world experts, including Smithsonian scientists, Mason faculty, and colleagues from other U.S. and international conservation organizations, provide students with direct connections to the most current teaching, research techniques, and work in the field.

Undergraduate Program

The Smithsonian-Mason Semester offers undergraduate programs in which students can earn a Conservation Studies Minor (CHSS), or apply credits to certain Mason degrees. There are currently three 16 credit programs: "Conservation, Biodiversity and Society", "Wildlife Ecology and Conservation", and "Endangered Species Conservation". See the Programs of Study section of this catalog for details on the minor and the Courses section for details on the courses (select the course prefix CONS). Grounded in natural science, this interdisciplinary semester brings public policy, sociology, conflict resolution, and global awareness to the learning environment. Students majoring in the Integrative Studies, BS, Biology, BS, Environmental Science, BS, Environmental and Sustainability Studies, BA (CHSS), Applied Science, BAS, and Global Affairs, BA can fulfill major requirements and/ or Mason Core requirements with Smithsonian-Mason Semester (CONS) credits subject to college approval.

Graduate Program

Smithsonian-Mason School of Conservation graduate courses offer in-depth explorations of advanced and highly specialized topics in applied conservation studies. Courses cover a diverse selection of topics focusing on biodiversity conservation, ranging from adaptive management to statistics in ecology and conservation, to non-invasive genetic techniques. All current courses take place as intensive one or two-week sessions and participants are in residence on the SMSC grounds in Front Royal, VA.

Although the Smithsonian-Mason School of Conservation does not presently offer a graduate degree, coursework may be applied to George Mason University’s Environmental Science and Policy, MS concentration in Conservation Science and Policy. In many cases, graduate students will have the unique opportunity to learn alongside conservation professionals currently working in the field. The unparalleled resources at the facilities draw researchers and practitioners from around the world, and this offers a rare opportunity for students and professionals to interact to mutual benefit in a hands-on situation and to receive informal mentoring from experienced practitioners.

Faculty

Ricardo Stanoss, Academic Program Manager
Anastasia Triplett, Business Manager

Affiliate Faculty

Akre, Alonso, Brown, Buff, Christen, Dallmeier, Freeman, Kolowski, Leimgruber, Luther, McShea, Monfort, Pukazhenthi

Women and Gender Studies Program

Phone: 703-993-2896
Website: wmst.gmu.edu

By choosing to pursue work in women and gender studies, students at all levels engage in an interdisciplinary exploration of gender in social, political, cultural, and economic life; gender in history; women and the media; feminist theory; the relationship between sex and gender; the impact of sex, race, class, disability, and sexual orientation on people’s lives; and the ways in which gender stereotypes influence the self in relationship to others. Students in many courses have the opportunity to investigate these issues in a cross-cultural and global perspective.

Undergraduate Programs

The Women and Gender Studies Program offers two interdisciplinary minors. The minor in women and gender studies and the minor in LGBTQ studies are open to students from any major. Students have the opportunity to earn credit toward the minor while doing an internship that helps prepare them for the work place, a service learning course that combines work in a specific course with a service project, or research on gender issues on Mason’s campus. Students pursuing these minors can take advantage of the many activities and resources provided by the Women and Gender Studies Center.

The program also sponsors the concentration in women and gender studies in the BA in integrative studies (p. 593).

Graduate Programs

The program sponsors the concentration in women and gender studies in the master’s degree in interdisciplinary studies (p. 542) (MAIS). This concentration promotes advanced scholarship that transcends traditional boundaries. Students combine required coursework in women and gender studies with courses in a discipline of interest such as history, literature, sociology, anthropology, health, education, philosophy, social work, conflict analysis and resolution, or the arts.

The program also offers a graduate certificate in women and gender studies (p. 613). Students may take this as a stand-alone certificate or pursue it concurrently with any graduate degree program. A portion of the certificate coursework may be applied to the degree with the approval of the director of the graduate degree and dean. Students must apply and be accepted to a graduate certificate program.

Women and Gender Studies Center

The academic program in women and gender studies is integrated with the Women and Gender Studies Center. The center organizes a wide variety of lectures, conferences, workshops, and other public events
Throughout the year. The center houses a library and functions as a community space for students and faculty.

Faculty

Core Faculty
Adams, Hattery (Director), Lewis

Program Faculty
Baily, Davis, Diener, Dunne, Fuchs, Hanrahan, Harvey, Hirsch, Jones, Jordan, J. Kim, Manuel-Scott, Rudes, Xiong

Affiliate Faculty

Programs

- LGBTQ Studies Minor
- Women and Gender Studies Graduate Certificate
- Women and Gender Studies Minor

Women and Gender Studies Minor

Banner Code: WGST

Academic Advising
240K Johnson Center
Fairfax Campus

Email: wmst@gmu.edu
Website: wmst.gmu.edu/programs/la-minor-wgst-wgst/

The minor is for students who are interested in gender, sexuality, and feminist perspectives. While it is an especially good complement to a major in the humanities, social sciences, health and human services, or natural sciences, it is open to students in any major in the university.

The interdisciplinary minor consists of two required courses and four electives. Students interested in feminist and gender issues choose their elective courses from a broad range of offerings.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see the Undergraduate Policies (p. 87) section of this catalog.

Requirements

Minor Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 612) tab.

Core Courses

Introductory Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 200</td>
<td>Introduction to Women and Gender Studies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits

3

Theory Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 330</td>
<td>Theoretical Perspectives in Women and Gender Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits

3

Electives

Select one WMST course (p. 2286) 3

Select 9 credits of additional elective courses from the following 1

Any WMST course (p. 2286) 3

AFAM 200 | Introduction to African American Studies (Mason Core) (p. 142) | 3       |
CHIN 328 | Asian American Women Writers (Mason Core) (p. 142) | 3       |
HEAL 325 | Health Aspects of Human Sexuality | 3       |
HEAL 327 | Women's Health | 3       |
HIST 350 | U.S. Women's History | 3       |
PSYC 362 | Psychology of Gender | 3       |
PSYC 466 | Psychology of Intimate Relationships | 3       |
INTS 310 | Violence and Gender | 3       |
INTS 312 | Images and Experiences of Childhood: Social Construct, Literature, and Film | 3       |
INTS 317 | Issues in Family Relationships (Mason Core) (p. 142) | 3       |
INTS 320 | Construction of Differences: Race, Class, and Gender (Mason Core) (p. 142) | 3       |
INTS 346 | Art as Social Action (Mason Core) (p. 142) | 3       |
INTS 347 | Gender Representation in Popular Culture (Mason Core) (p. 142) | 3       |
INTS 400 | Temptress: Constructs of Sex and Power | 3       |
INTS 405 | Women and Leadership | 3       |
INTS 446 | Art, Beauty, and Culture (Mason Core) (p. 142) | 3       |
SOCI 309 | Marriage, Families, and Intimate Life | 3       |
SOCI 315 | Contemporary Gender Relations | 3       |
SOCI 355 | Social Inequality (Mason Core) (p. 142) | 3       |

Total Credits

12
Women and Gender Studies Graduate Certificate

Banner Code: LA-CERG-WGST

Academic Advising

240K Johnson Center
Fairfax Campus

Email: wmst@gmu.edu
Website: wmst.gmu.edu/programs/la-cerg-wgst/

The graduate certificate may be taken alone or in conjunction with another graduate program. Courses applied to the certificate may be applied to a degree program, subject to approval of the director of the respective program.

Admissions & Policies

Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the graduate certificate in women and gender studies, see Application Requirements and Deadlines (http://wmst.gmu.edu/programs/LA-CERG-WGST/application).

Policies

In accordance with university policy, students may transfer up to 3 graduate credits earned at another accredited institution to the certificate program with the approval of the director of the program and the dean. They may transfer up to 9 graduate credits earned at Mason in nondegree status toward the certificate, subject to approval of the director and the dean in accordance with university policy.

For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 94).

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a full-or part-time basis.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 613) tab.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td>3</td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three electives</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9</td>
</tr>
</tbody>
</table>

1 Students choose from relevant courses subject to the approval of the director. These courses may be from departments across the university that address the study of women and gender, courses in the Women and Gender Studies Program, and appropriate directed readings or independent study courses.

Capstone Portfolio

Students synthesize their work in the certificate program by reflecting on how issues, ideas, and theories raised in the core courses inform their understanding of gender issues within their area of interest. The portfolio includes three to five items produced in previous course work and a 7-10 page essay discussing them. The portfolio may include course papers, performance videos, photos of exhibits, music, or other items as agreed on by the student and advisor. The portfolio must be approved by the graduate advisor and submitted to the Women and Gender Studies Program, where it will be presented, displayed, and archived.

College of Science

1450 Exploratory Hall
Fairfax Campus
MS 6A3

Undergraduate: ugradCOS@gmu.edu
Graduate: COSgrad@gmu.edu
Phone: 703-993-9532
Fax: 703-993-9033

Website: cos.gmu.edu

Administration

- Peggy Agouris, Dean
- Ali Andalibi, Associate Dean for Research
- Donna M. Fox, Associate Dean for Student Affairs and Special Programs
- Padmanabhan Seshaiyer, Associate Dean for Academic Affairs
- Martha Wescoat-Andes, Associate Dean for Administration

College Code: SC

The College of Science (COS) serves as the nexus for research and education in the natural, mathematical, and computational sciences at George Mason University. The central mission of COS is to create and disseminate scientific knowledge, provide outstanding scholarship in concert with excellent teaching, and develop the human and technical resources required to address the current and future needs of society.
Through its innovative and multifaceted educational and research mission, COS offers exciting opportunities to undergraduate and graduate students, scientists, educators, and other professionals in Northern Virginia and the national capital region.

In addition to the wide variety of undergraduate degree programs offered by its departments, COS also offers many innovative graduate degrees and interdisciplinary minors. The research strength of COS provides an essential resource to graduate and undergraduate students whose involvement in research is strongly encouraged. Many undergraduates go on to graduate school and to pursue careers in public service, nonprofit organizations, and the private sector. Graduate students engage in more specialized study at the master’s and doctoral levels, preparing them for first or second careers or job advancement and providing personal enrichment.

Faculty members are committed to teaching grounded in scholarship and research. They strive to make students rigorous thinkers and clear communicators while encouraging experimentation with new approaches and ideas. Students are thus prepared for their role as informed citizens in a complex, global society and are able to adapt to an ever-changing world.

**Requirements & Policies**

**College Policies**

Students in COS are governed by the policies and procedures of the university. Areas where the college provides additional guidance will be found in the Undergraduate Education and Graduate Education sections below.

**Accommodations for Disabled Students**

Students with documented disabilities should contact the Office of Disability Services (http://ds.gmu.edu) (703-993-2474) to learn more about accommodations that may be available to them.

**Undergraduate Education**

The college offers numerous certificates, Bachelor of Arts, and Bachelor of Science degrees. These undergraduate degrees consist of coursework in the Mason Core (p. 142), in a major area of study, and in elective courses. To earn a bachelor’s degree, students must at a minimum:

- Complete 120 credits, of which at least 45 must be in upper-level courses (numbered 300 and above).
- Complete at least one course designated as "writing intensive" (at the 300 or 400-level).
- All entering students who have not yet satisfied the Mason Core (p. 142) requirement in ‘Quantitative Reasoning’ are required to take the Math Placement Test (http://math.gmu.edu/placement_test.php) prior to enrollment.
- Students should also consult AP5 Undergraduate Policies (p. 87) for information concerning university-wide requirements for undergraduate degrees.

All students are responsible for meeting with their academic advisor and reviewing their transcripts and degree audits regularly to ensure that they are correct and meet all requirements. Transfer students are encouraged to meet with their academic advisor prior to registering for classes in order to review their transcripts and course equivalencies. In some cases, students may need to earn more than 120 credits to complete all of the requirements.

More information regarding the undergraduate programs administered by COS is available on the college’s website (http://cos.gmu.edu).

**College-level Degree Requirements**

The baccalaureate degree is designed to provide a broad knowledge of the world, develop in students the ability to think conceptually and critically, acquaint them with many different methods of inquiry, and provide skills to continue intellectual growth throughout life.

**Bachelor of Arts**

The Bachelor of Arts (BA) degree provides students with a breadth of knowledge as well as the necessary skills to make in-depth study of a major truly meaningful. In addition to the Requirements for Bachelor’s Degrees (p. 89) and the Mason Core (p. 142), students pursuing a BA degree must also complete the College Requirements for the BA Degree, and the degree program’s requirements, both listed in the specific degree program’s page.

**Bachelor of Science**

The Bachelor of Science (BS) degree provides students with a more intensive approach to the technical core knowledge and concepts in their major field of study. Therefore, this curriculum has a reduced number of courses in humanities and social sciences in comparison with the BA degree in order to allow students to achieve greater depth in their majors. Students pursuing a BS degree must complete the Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142), and the requirements for their major. Requirements for each BS major are listed on the specific degree program’s page.

**Minors**

Students may elect to take a minor in addition to their major field of study. For policies governing all minors, see AP5.3.4 Minors (p. 90). Students interested in earning a minor should complete the Minor Declaration form (http://registrar.gmu.edu/forms).

**Teacher Licensure**

Degree programs that help to prepare students for teaching careers are available in the following COS programs:

- Biology, BA (p. 643)
- Biology, BS (p. 648)
- Chemistry, BA (p. 662)
- Chemistry, BS (p. 667)
- Earth Science, BS (p. 627)
- Mathematics, BA (p. 743)
- Mathematics, BS (p. 748)
- Physics, BS (p. 764)

Students who wish to become teachers and who plan to seek teacher licensure should also consult the College of Education and Human Development (p. 161) and attend an information session early in their undergraduate career. For more information, visit the Graduate School of Education’s website (http://gse.gmu.edu).

**Undergraduate Policies**

Students should become familiar with the university’s general academic policies in addition to those specific to each department. Please see AP5 Undergraduate Policies (p. 87).
Students with questions regarding exceptions to undergraduate academic policies and college-level requirements should contact the college’s Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us) (email: ugradCOS@gmu.edu). Additional information and forms are available online from the college’s Undergraduate Student Affairs (http://cosundergrad.gmu.edu) webpage.

Registration

Students are personally responsible for correctly registering for courses and paying all tuition and fees by the official university registration and payment deadlines. Instructors do not have the authority to add students to courses. All students should verify the accuracy of their enrollment before the end of the official add period. Calendars are available on the Office of the University Registrar’s website (http://registrar.gmu.edu/calendars).

Academic Load

Students should review the university policies regarding academic load in AP.1.2 Academic Load (p. 77).

In order to be considered for an overload, students must fulfill all of the following criteria:

- Be in good academic standing,
- Have completed the prior semester with a GPA of 2.75 or higher,
- Have a cumulative GPA of 2.75 or higher,
- No grades of ‘C’ or lower in the previous semester,
- Have demonstrated in prior semesters at George Mason the ability to handle an increased and demanding course load while maintaining high performance, and
- Have no remaining incompletes ('IN') from a previous semester

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at Mason.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition and fees by the official university deadlines. Calendars are available on the Office of the University Registrar’s website (http://registrar.gmu.edu/calendars).

Excluded Courses

COS students are limited to 3 credits of coursework in Recreation (RECR) (p. 2132) activity courses which may be taken to satisfy degree requirements and applied as general elective credits toward a COS degree.

Military Science courses MLSC 400 Leadership and Management and MLSC 402 Leadership and Ethics can be used for credit toward a COS degree, but credit from other MLSC courses may not be applied toward COS degrees.

Once matriculated at Mason, students may not take CLEP exams and apply credits from those exams toward COS degrees. Students may apply credits from CLEP exams to COS degrees only if those credits were awarded and reported prior to admission.

University Consortium Registration

Students should review the university policies in AP.1.4 Special Registration Procedures (p. 77), including the University Consortium listing.

In addition, students who have failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstances. All consortium registration requests must be submitted to the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us) at least three weeks prior to the first day of classes for the relevant semester at Mason.

Permission to Study Elsewhere

Once enrolled in degree status at Mason, students with less than 60 hours of earned transfer credits (excluding any credits earned through the Consortium of Universities of the Washington Metropolitan Area (https://www.consortium.org) or through Mason Abroad (http://studyabroad.gmu.edu)) may take no more than 9 credits of coursework in COS disciplines at another institution.

Students with 60 or more hours of transfer credits are prohibited from taking additional coursework in COS disciplines at another institution. Students may request special permission for additional credits beyond these listed limits for summer registration if their permanent residence is more than 50 miles from Mason’s Fairfax campus. See AP.1.4.2 Permission to Study Elsewhere (p. 79) for more information.

Study Abroad

In order to be considered for study through Mason Abroad (http://studyabroad.gmu.edu), students must plan well in advance and receive prior written permission from the college’s associate dean for student affairs. Students must also meet all of the following criteria:

- Meet all eligibility criteria for their program as specified by Mason Abroad (http://studyabroad.gmu.edu), including minimum GPA requirements,
- Completed the immediately preceding semester at Mason with a GPA of 2.00 or higher, and
- Completed the necessary forms and obtained all required signatures and course equivalencies.

Mason Abroad (http://studyabroad.gmu.edu) may have higher academic standards and students must meet all eligibility requirements.

Students in danger of probation, suspension, or dismissal should plan very carefully before requesting to study abroad. Students who are not in good academic standing will not be permitted to study abroad.

Leave of Absence

Please consult AP.1.8 Undergraduate Leave of Absence (p. 81) regarding the leave of absence policy.

Withdrawals

Courses for which a withdrawal is approved receive a grade of ‘W’.

Students are responsible for all courses in which they remain officially enrolled once the drop period has ended. Please review the applicable academic calendar (http://registrar.gmu.edu/calendars) for pertinent dates.

Instructors do not have the authority to withdraw students from classes. Withdrawals require the approval of the college’s associate dean for student affairs, are typically allowed only for full semesters at a time (all enrolled courses), and are only permitted for non-academic reasons. Withdrawals cannot be approved for academic reasons. When submitting a withdrawal request, students must provide verifiable, third-party documentation for the reason for the withdrawal. Requests for
withdrawals should be submitted as early in the semester as possible, and never after the last day of classes.

Credits graded 'W' do not affect a student's GPA, but do count as attempted hours. The total attempted hours and cumulative GPA determine a student's academic standing. If the cumulative GPA is below 2.00, withdrawals may affect whether a student will be on warning, probation, suspension, or dismissal. Students should be familiar with AP.5.2.3 Student Retention Categories (p. 88).

**Academic Clemency**

Students should review the university policies regarding academic clemency in AP.5.2.9 Academic Clemency (p. 89).

In extraordinary cases, students who (a) have been absent from Mason for a minimum of three consecutive calendar years, and (b) are currently in their first semester back at the university may request that the college's associate dean for student affairs consider allowing clemency from up to 16 hours of coursework from previous semesters.

To be considered for this clemency, students must meet all of the following criteria:

- Be absent from Mason for a minimum of three consecutive calendar years,
- Provide a detailed explanation for why they were unsuccessful in those courses and how they have made changes to ensure their academic progress upon their return,
- Submit their request within 12 months of the first day of the re-enrollment term,
- In order to make this request, students should
  a. Enroll in at least 6 hours during their first 12 months back at Mason and
  b. Earn a minimum GPA of 2.50 each semester back prior to making the clemency request, with no grade below 2.00.

If these minimum academic requirements are not met during the first semester of return, then clemency will not be allowed under any circumstances.

**Appeals Process**

Students may appeal departmental decisions concerning academic actions to COS Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). They may further appeal the decisions of COS Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us) to the Dean's Council, a committee composed of college deans and faculty members. These levels of appeal are subject to the limits below concerning the final level of appeal for each type of academic action. Students who feel that the college appeal process was conducted unfairly may appeal to the Office of the Provost as specified in Student Rights and Responsibilities (p. 101).

Grade appeals should first be made to the department or program, following the process specified in AP.3.9 Grade Appeals (p. 85). If they are resolved within the department or program, that is the final level of appeal. The departmental decision may be appealed to the college's associate dean for student affairs only on the basis of procedural irregularity. Such appeals should be made through the COS Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). If the grade appeal is not resolved within the department or program, the chair makes a recommendation to the college's associate dean for student affairs, who makes the final determination. The decision of the associate dean is not subject to review or further appeal.

Departments set the requirements for the majors and minors that they administer. Substitutions and waivers of requirements require the approval of COS Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). When a department denies a substitution or waiver of a requirement, this decision may be appealed to the COS Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us) on the basis of procedural irregularity only, and is the final level of approval.

The Dean's Council is the final level of appeal for course overloads, consortium registration, study elsewhere, and withdrawals after the drop deadline within the semester.

The college's associate dean for student affairs is the final level of appeal for COS college-level requirements, retroactive adds, withdrawals, graduation, and return from suspension and dismissal.

There is no waiver or appeal of satisfactory performance standards (minimum grades or grade point average, GPA) that have been set by the department or program faculty for the courses in their major or minor.

Students should file all appeals in a timely manner, usually within the semester in which the original decision is rendered, but no later than the final day of classes in the following semester.

**Grievances**

Grievances should be directed in writing to the college's associate dean for student affairs. The COS Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us) may also provide guidance to students on how to resolve their concerns.

**Transfer Students**

Admitted and enrolled transfer students who have completed an AA, AS, or AA&S degree from the Virginia Community College System (VCCS) and have been offered admission to Mason by the Office of Admissions (https://www2.gmu.edu/admissions-aid) may be eligible for a waiver of all of Mason's lower level Mason Core (p. 142) requirements in accordance with the Guaranteed Admission Agreement. Students eligible for this waiver are still required by the university to complete ENGH 302 Advanced Composition (Mason Core) (p. 142) and a synthesis course. Transfer students who have been offered admission under the terms of the Guaranteed Admission Agreement and are pursuing a degree in the college are considered to have met all college requirements except for proficiency in a foreign language (required of BA students).

Students with a bachelor's degree from an accredited institution who are pursuing a BA degree in COS are also considered to have met all college requirements except for proficiency in a foreign language.

**Graduate Education**

COS offers numerous graduate certificates, master's programs, and doctoral programs; the requirements for each can be found in the program's description in this catalog. More information regarding the college's graduate programs is available on the college's website (https://cos.gmu.edu/academics/graduate-academics).

**Graduate Admission**

Admissions decisions are made by the faculty committee in the respective graduate program. Denial of admission is not subject to
appeal. Further information can be found in Graduate Admission Policies (p. 68).

**Provisional and Conditional Admission**
Provisionally admitted students are not eligible to participate in any consortium coursework, studying at another institution, or study abroad programs until the conditions of the provisional contract have been met. Transfer of credit requests for coursework taken in non-degree status at Mason or another institution will not be considered until the provisional contract has been fulfilled. Further information on provisional admission can be found in Graduate Admissions Policies (p. 68).

Details on conditional admission, the need for additional requirements to be met before enrollment, can be found in Graduate Admission Policies (https://catalog.gmu.edu/admissions/graduate-policies/#text).

**Non-degree Enrollment**
COS gladly admits qualified students for non-degree studies. Some of the factors that are considered by COS while making non-degree admissions decisions include: previous academic performance, professional experience, and academic fit. To apply, applicants are to complete the non-degree George Mason University Graduate Application (https://www2.gmu.edu/admissions-aid/apply-now) and provide official transcripts from all institutions attended. Further information can be found in Non-degree Enrollment (p. 74) and on the Office of Admissions’ website (http://admissions.gmu.edu/nonDegree).

Upon admission to graduate non-degree studies, students are considered graduate students and are charged tuition accordingly (regardless of the course’s level). COS permits up to 12 credits of relevant graduate coursework earned in non-degree status to be considered for transfer into many of its graduate programs.

**Reduction of Credits**
Students accepted into a master’s or doctoral program who have earned a degree in a relevant field from a regionally accredited institution may be eligible for a credit reduction. Students must request a reduction of credit from the graduate program director of their graduate program; reductions must be approved by both the graduate program director and the college’s associate dean for student affairs. Further details and related restrictions can be found in AP6.5.2 Reduction of Credits (p. 91).

**Transfer of Credit**
Graduate credit earned prior to admission may be eligible to apply toward a graduate certificate or degree program. Details and related restrictions can be found in AP6.5.3 Transfer of Credit (p. 92). Additionally, courses with grades of ‘P’ or ‘S’ are not accepted for transfer unless the official transcript indicates that the grade is equivalent to a 3.00 (‘B’) or better. Some programs have more stringent standards regarding a transfer of credit; students should contact their graduate program for specific information.

**Credit from Other Institutions (Permission to Study Elsewhere)**
Students enrolled in a degree program may take graduate courses at another regionally accredited institution and apply these credits to a master’s or doctoral degree with prior approval. Details and related restrictions can be found in AP6.5.4 Permission to Study Elsewhere (p. 92). Students enrolling in courses at other institutions with different drop/add timetables must still abide by Mason’s drop/add deadlines in terms of acquiring necessary approvals.

**Academic Load**
Graduate students can enroll in up to 12 credits each semester; non-degree graduate students can enroll in up to 10 credits each semester. Students should review the university’s policies in AP1.2 Academic Load (p. 77).

**University Consortium**
Students should review university policies regarding the University Consortium under AP1.4.9 University Consortium (p. 80).

In addition, in order to register for a consortium course, students must have an overall GPA of at least 3.00 and be in good academic standing. Students with grades of ‘IN’ on their record or who earned grades of ‘C’ or ‘F’ in the most recent semester are not eligible to register for a consortium course. Students who have received a grade less than 3.00 in a consortium course are not permitted to enroll in additional consortium courses. Newly admitted graduate students are not permitted to enroll in consortium courses during their first semester of graduate study. Students who wish to enroll in consortium courses during their second semester of study must wait until the grades for the previous semester have been posted.

**Dissertation Committee**
The college follows university policies regarding dissertation committees. Please see AP6.10.5 Dissertation Committee (p. 97). Please note that some programs within COS may have a more stringent policy.

**Dissertation (998/999) Registration**
Most programs within the college follow university policies regarding dissertation registration; please see AP6.10.6 Dissertation Registration (998, 999) (p. 98). Some departments may require additional requirements.

**Time Limit for Doctoral Students**
The college follows university policies regarding doctoral time limits. Please see AP6.10.1 Time Limit (p. 97). If your catalog term was before this current catalog, please visit the archived catalogs page (http://catalog.gmu.edu/archives) and find your catalog term’s policy on time limits.

Requests for extension of time limits must be submitted in writing to the college’s associate dean for student affairs. The request should explain the extenuating circumstances that prevented timely completion of the degree, corrective action that has been taken to address those circumstances, and a time line for completing the work within the limits of the extension. The request should include a letter from the student’s graduate program director indicating the program’s support for the extension and confirmation that the work can be completed within the limits of the extension.

**Graduate Appeals of Termination**
All graduate students should be familiar with the university’s polices on termination; please see AP6.6.2 Academic Termination (p. 92). Students who meet the criteria for academic termination may submit a written appeal to the college’s associate dean for student affairs. Appeals should include all relevant information on the basis for appeal, as well as any appropriate documentation and a letter of support from the graduate program.
Appeals of termination are reviewed by the college’s associate dean for student affairs with input from appropriate faculty within the student’s department. The ruling represents the college’s final decision.

**Academic Units**

- Department of Atmospheric, Oceanic and Earth Sciences
- Department of Biology
- Department of Chemistry and Biochemistry
- Department of Computational and Data Sciences
- Department of Environmental Science and Policy
- Department of Geography and Geoinformation Science
- Department of Mathematical Sciences
- Department of Physics and Astronomy
- Forensic Science Program
- Interdisciplinary Program in Neuroscience
- School of Systems Biology

**Programs**

- Advanced Biomedical Sciences Graduate Certificate
- Pre-Medical Undergraduate Certificate
- Scientific Leadership and Practice Minor

**Note:**

See individual academic units (p. 618) within the college for additional program offerings.

**Advanced Biomedical Sciences Graduate Certificate**

**Banner Code:** SC-CERG-ABS

**Academic Advising**

308 Bull Run Hall
Science and Technology Campus

Phone: 703-993-7136
Website: cos.gmu.edu/georgesquared/

The Advanced Biomedical Sciences (ABS) graduate certificate is a program offered jointly by George Mason University and Georgetown University Medical Center (GUMC) (http://gumc.georgetown.edu). This program is designed for students who have all of their core coursework and extracurricular prerequisites for medical, dental or other health-related fields, but otherwise have a comparatively limited science background (non-science majors with only the pre-health curricular core, for example), modest grades in the sciences as undergraduates, and/or also need to improve their Medical College Admission Test, Dental Admission Test, or other pre-professional scores. This is a 9-month full-time program that begins each fall semester. Most classes are held at George Mason University’s Science and Technology Campus in Manassas, Virginia with cadaveric anatomy labs held at GUMC.

The graduate certificate may be pursued on a full-time basis in either a lecture-based format or a hybrid format using recorded lectures and a discussion-based classroom experience. The program is premium-priced with no tuition distinction between the in-state or out-of-state residency status.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page. (https://irr2.gmu.edu/gedt/Advanced_Biomedical_Sciences/Gedt.html)

**Affiliated Faculty**

Banerjee, Partha; Castilla, Marina; Djakiew, Daniel; Downey, Ryan; Johnson, Michael; Mulroney, Susan; Myers, Adam; Notario, Vicente; Whitney, Jennifer

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants are expected to have a bachelor’s degree from a regionally accredited university, the desire to pursue a career in medicine, dentistry, or other health-related career; completion of all of the prerequisite courses for medical or dental school (one year each of biology, chemistry, organic chemistry, physics and math), and overall credentials suitable for acceptance to graduate programs in the College of Science at George Mason University and the Georgetown University Graduate School of Arts and Sciences.

**Policies**

For policies governing all graduate programs, see AP 6 Graduate Policies (p. 90).

**Requirements**

**Certificate Requirements**

Total credits: 20

This certificate may be pursued on a full-time basis only.

Students should refer to the Admissions & Policies (p. 618) tab for specific policies related to this certificate.

**Coursework**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 601</td>
<td>4</td>
<td>BMED 604</td>
<td>5</td>
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<tr>
<td>BMED 602</td>
<td>3</td>
<td>BMED 605</td>
<td>3</td>
</tr>
<tr>
<td>BMED 603</td>
<td>3</td>
<td>BMED 651</td>
<td>1</td>
</tr>
</tbody>
</table>
Pre-Medical Undergraduate Certificate

Banner Code: SC-CERB-PMCL

Donna M. Fox, Ph.D.
Phone: 703-993-9532

The Pre-Medical Undergraduate Certificate is a premium program offered to enlisted members of the U.S. military who are chosen specifically from a federal program referred to as EMDP2 (Enlisted to Medical Degree Preparatory Program). This is a post-baccalaureate program aimed at active duty military enlisted members who have earned a bachelor’s degree from a regionally accredited institution with a minimum cumulative GPA of 3.0, who have experience working in a health-related position in the military, and who meet all other requirements specified by the Uniformed Services University of the Health Sciences (USU) (https://www.usuhs.mil), and who are interested in matriculating at the Uniformed Services University (military medical school) or another US accredited medical school. Only those individuals who are supported by EMDP2 are eligible to enroll in the Pre-Medical Undergraduate Certificate.

The Pre-Medical Undergraduate Certificate will provide a one-year undergraduate program that will allow qualified individuals to complete undergraduate pre-medical admissions requirements as currently specified by the American Association of Medical Colleges (AAMC).

This is a full-time program offered during the day and located at the Science and Technology Campus of George Mason University. Students are selected by the US military and are admitted as a cohort in the fall semester only.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

Applicants must be active duty military and selected by the EMDP2. Students are expected to have a bachelor’s degree from a regionally accredited university and the desire to pursue a career in military medicine.

Applicants who do not meet the admissions requirements for this certificate may be interested in learning about the Career Changer’s Biological Sciences Undergraduate Certificate (p. 655).

Policies

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

Certificate Requirements

Total credits: minimum 38

This certificate may be pursued on a full-time basis only.

Students should refer to the Admissions & Policies (p. 619) tab for specific policies related to this certificate.

Coursework

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
<th>Summer Semester</th>
<th>Credits</th>
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<tr>
<td>BIOL 213</td>
<td>4</td>
<td>BIOL 311</td>
<td>4</td>
<td>CHEM 313</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 211 &amp; CHEM 213</td>
<td>4</td>
<td>CHEM 212 &amp; CHEM 214</td>
<td>4</td>
<td>CHEM 314</td>
<td>3</td>
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<tr>
<td>MATH 105 1</td>
<td>4</td>
<td>MATH 113</td>
<td>4</td>
<td>CHEM 315</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 243</td>
<td>3</td>
<td>PHYS 245</td>
<td>3</td>
<td>CHEM 318</td>
<td>2</td>
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<tr>
<td>PHYS 244</td>
<td>1</td>
<td>PHYS 246</td>
<td>1</td>
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<tr>
<td></td>
<td>12-16</td>
<td>16</td>
<td>10</td>
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</tr>
</tbody>
</table>

Total Credits 38-42

1 Required only if appropriate score on math placement test is not achieved.

Scientific Leadership and Practice Minor

Banner Code: SCLP

Academic Advising

Phone: 703-993-4594
Email: aacos@gmu.edu

This minor has been designed to build scientific communication, engagement, and leadership practices so that students are (i) equipped to communicate effectively about the science they undertake and the challenges they face in ways that are meaningful in relation to their field of study, and (ii) equipped with the skills to participate and lead others in scientific ventures.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 16-20
Students should refer to the Admissions & Policies tab for specific policies related to this program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS 300</td>
<td>Professional Preparation for STEM Disciplines</td>
<td>3</td>
</tr>
<tr>
<td>COS 400</td>
<td>Problem Solving and Leadership in STEAM</td>
<td>3</td>
</tr>
</tbody>
</table>

**Leadership or Communication**

Choose one course from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 429</td>
<td>Environmental Science Communication</td>
</tr>
<tr>
<td>COMM 302</td>
<td>Media Theory</td>
</tr>
<tr>
<td>COMM 304</td>
<td>Foundations of Health Communication</td>
</tr>
<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
</tr>
<tr>
<td>ENGH 376</td>
<td>Rhetoric and New Media</td>
</tr>
<tr>
<td>ENGH 388</td>
<td>Professional and Technical Writing</td>
</tr>
<tr>
<td>ENGH 489</td>
<td>Proposal Writing and Development</td>
</tr>
<tr>
<td>INTS 204</td>
<td>Leadership Theory and Practice</td>
</tr>
<tr>
<td>INTS 406</td>
<td>Global Leadership (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
</tr>
</tbody>
</table>

**Quantitative Reasoning**

Choose one course from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

**Computational Thinking**

Choose one course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 301</td>
<td>Scientific Information and Data Visualization</td>
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<tr>
<td>CDS 302</td>
<td>Scientific Data and Databases</td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
</tr>
<tr>
<td>PHYS 251</td>
<td>Introduction to Computer Techniques in Physics (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

**Internship**

Choose one course from the following: 1-3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 409</td>
<td>Astronomy Internship</td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
</tr>
<tr>
<td>GEOE 480</td>
<td>Internship</td>
</tr>
<tr>
<td>CDS 491</td>
<td>Internship</td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
</tr>
<tr>
<td>FRSC 406</td>
<td>Forensic Internship</td>
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<tr>
<td>GGS 480</td>
<td>GGS Internship</td>
</tr>
<tr>
<td>PHYS 409</td>
<td>Physics Internship</td>
</tr>
</tbody>
</table>

Total Credits 16-20

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1 Or any other internship course as approved by the minor advisor.

**Department of Atmospheric, Oceanic and Earth Sciences**

Phone: 703-993-5394  
Website: aoes.gmu.edu

Scientists and students in the Department of Atmospheric, Oceanic, and Earth Sciences (AOES) are working to better understand our planet in myriad ways, from improving numerical model predictions of next year’s atmospheric temperature to explaining geological strata laid down in previous eras, from monitoring water transport through the atmosphere to modeling water movement at the bottom of the ocean.

AOES is home to active research programs and to a doctoral program in Climate Dynamics (p. 623), a master’s degree in Earth Systems Science (p. 633), undergraduate degrees in Atmospheric Science (p. 621), Earth Science (p. 627), and Geology (p. 634), and undergraduate minors in Atmospheric Science (p. 623), Earth Science (p. 632), Ocean and Estuarine Science (p. 639), and Paleontology (p. 640). The department has close ties to the Center for Ocean-Land-Atmosphere Studies (COLA) (http://cola.gmu.edu).

**Faculty**

**Department Faculty**

**Professors**

DelSole, Dirmeyer, Hazen (Robinson Professor), Hinnov, Huang, Kinter (chair), Nord, Schneider, J. Shukla, Straus, Verardo

**Associate Professors**

Anders, Boybeyi, Chiu, Klinger, Kysar-Mattietti, McBride, Stan, Uhen (associate chair)

**Assistant Professors**

Baddouh, Burls, Pegion

**Research Faculty**

Adams, Altshuler, Buckley, Cash, Chen, Doty, Erfani, Fennessy, Guo, Hao, Krishnamurthy, Manganello, Marx, Paolino, Shin, R. Shukla, Swenson, Trenary

**Affiliate Faculty**

Houser, Light, Lukes, Summers

**Emeriti**

Diecchio, Schopf

**Programs**

- Atmospheric Science Minor
- Atmospheric Sciences, BS
- Climate Dynamics, PhD
- Climate Science, MS (pending SCHEV approval)
- Earth Science Minor
- Earth Science, BS
Atmospheric Sciences, BS

Banner Code: SC-BS-AOES

Dr. Cristiana Stan, Undergraduate Coordinator and Associate Professor

267 Research Hall
Fairfax Campus
Phone: 703-993-5391
Email: cstan@gmu.edu
Website: cos.gmu.edu/aoes/academics/atmos-sci/

The undergraduate program in atmospheric sciences gives students a strong quantitative undergraduate education in atmospheric, climate, and related sciences to understand the basic principles behind current and emerging issues in weather, climate variability, and climate change. Students completing the atmospheric sciences degree will be prepared for a full range of career paths including forecast and analysis, operations and research support in meteorology, atmospheric sciences, and climate. The curriculum meets the American Meteorological Society’s (https://www.ametsoc.org/ams) recommendations for a bachelor’s degree in atmospheric sciences.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies

Students must fulfill all Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142).

The university’s writing intensive requirement for the major will be met upon successful completion of CLIM 408 Senior Research.

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 621) tab for specific policies related to this program.

A GPA of at least 2.00 is required for all core courses, with an overall GPA of at least 2.50.

Atmospheric Sciences Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 102</td>
<td>Introduction to Global Climate Change Science (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CLIM 111</td>
<td>Introduction to the Fundamentals of Atmospheric Science (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 112</td>
<td>Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CLIM 301</td>
<td>Weather Analysis and Prediction</td>
<td>4</td>
</tr>
<tr>
<td>CLIM 408</td>
<td>Senior Research ¹</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 411</td>
<td>Atmospheric Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 429</td>
<td>Atmospheric Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 475</td>
<td>Atmospheric Physics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 24

¹ Fulfills the writing intensive requirement.

Chemistry

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 4

Computer Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>¹</td>
</tr>
</tbody>
</table>

Total Credits 3-4

¹ Students selecting CS 112 Introduction to Computer Programming (Mason Core) (p. 142) must take an additional information technology ethics course in order to completely fulfill the Mason Core Information Technology (p. 143) requirement. Recommended courses include either CDS 151 Data Ethics in an Information Society (Mason Core) (p. 142) or CS 105 Computer Ethics and Society (Mason Core) (p. 142).

Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 11
Statistics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Physics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 8

Options

Students in the atmospheric sciences major will select one of the following options in addition to the required courses above. These options reflect faculty expertise and provide two areas of research emphasis. The options will help in creating educated professionals who have the requisite training to support future weather and climate research, enabling the graduate’s potential for providing substantial societal benefits.

Meteorology Option

This option is designed for students who are primarily interested in weather and weather forecasting. The required classes in this option emphasize atmospheric phenomena, especially those that have the greatest impact on society.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 312</td>
<td>Physical Climatology</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 312</td>
<td>Physical Climatology</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 314</td>
<td>Severe and Extreme Weather</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 314</td>
<td>Severe and Extreme Weather</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 319</td>
<td>Air Pollution</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 319</td>
<td>Air Pollution</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Computational Atmospheric Sciences Option

The computational atmospheric sciences option gives students preparation in computational science, mathematics, and elements of numerical modeling in order to undertake quantitative research or operational work in a professional or graduate setting.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 440</td>
<td>Climate Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>or CLIM 470</td>
<td>Numerical Weather Prediction</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 251</td>
<td>Introduction to Scientific Programming</td>
<td>3</td>
</tr>
<tr>
<td>CDS 301</td>
<td>Scientific Information and Data Visualization</td>
<td>3</td>
</tr>
<tr>
<td>CDS 302</td>
<td>Scientific Data and Databases</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Required Electives

The required electives must be chosen from this list and be independent of courses taken in the selected option (Meteorology or Computational Atmospheric Sciences):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 312</td>
<td>Physical Climatology</td>
<td></td>
</tr>
<tr>
<td>or GGS 312</td>
<td>Physical Climatology</td>
<td></td>
</tr>
<tr>
<td>CLIM 314</td>
<td>Severe and Extreme Weather</td>
<td></td>
</tr>
<tr>
<td>or GGS 314</td>
<td>Severe and Extreme Weather</td>
<td></td>
</tr>
<tr>
<td>CLIM 319</td>
<td>Air Pollution</td>
<td></td>
</tr>
<tr>
<td>or GGS 319</td>
<td>Air Pollution</td>
<td></td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
<td></td>
</tr>
<tr>
<td>CLIM 412</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>CLIM 429</td>
<td>Atmospheric Thermodynamics</td>
<td></td>
</tr>
<tr>
<td>CLIM 438</td>
<td>Atmospheric Chemistry</td>
<td></td>
</tr>
<tr>
<td>CLIM 440</td>
<td>Climate Dynamics</td>
<td></td>
</tr>
<tr>
<td>CLIM 456</td>
<td>Introduction to Atmospheric Radiation</td>
<td></td>
</tr>
<tr>
<td>or GGS 456</td>
<td>Introduction to Atmospheric Radiation</td>
<td></td>
</tr>
<tr>
<td>CLIM 470</td>
<td>Numerical Weather Prediction</td>
<td></td>
</tr>
<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CDS 251</td>
<td>Introduction to Scientific Programming</td>
<td></td>
</tr>
<tr>
<td>CDS 301</td>
<td>Scientific Information and Data Visualization</td>
<td></td>
</tr>
<tr>
<td>GGS 354</td>
<td>Data Analysis and Global Change Detection Techniques</td>
<td></td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires an additional 48-49 credits (dependent upon the course chosen for the Computer Science requirement), which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), and electives. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Written Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Exploration Requirements
Atmospheric Science Minor

Banner Code: ATMS

Dr. Cristiana Stan, Undergraduate Coordinator and Associate Professor
Research Hall, Room 267
Fairfax Campus
Phone: 703-993-5391
Email: cstan@gmu.edu
Website: cos.gmu.edu/aoes/academics/undergraduate-programs/

Topics of study in this minor include weather forecasting, climate change, and the predictability of coupled ocean-atmosphere-land-variations. Students in physics, math, engineering, and computational sciences may be particularly attracted to this minor because it provides a compelling application of the fundamental methods of analysis learned in their major. Such students are ideal candidates for research in atmospheric science and climate dynamics; the minor will facilitate entry into graduate studies in these fields.

Students in Earth science, geography and geoinformation science, and environmental science may find this minor useful because the atmosphere is an important influence on geography, ecosystems, geological strata, and plays an important role in global change.

This is a Green Leaf program (p. 107).

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 17

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 623) tab for specific policies related to this program.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 101</td>
<td>Global Warming: Weather, Climate, and Society (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 111</td>
<td>Introduction to the Fundamentals of Atmospheric Science (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 112</td>
<td>Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CLIM 301</td>
<td>Weather Analysis and Prediction</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 11

Electives

Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 314</td>
<td>Severe and Extreme Weather or GGS 314 Severe and Extreme Weather</td>
<td>6</td>
</tr>
<tr>
<td>CLIM 408</td>
<td>Senior Research</td>
<td>4</td>
</tr>
<tr>
<td>CLIM 412</td>
<td>Physical Oceanography</td>
<td>4</td>
</tr>
<tr>
<td>CLIM 438</td>
<td>Atmospheric Chemistry or CHEM 438 Atmospheric Chemistry</td>
<td>6</td>
</tr>
<tr>
<td>PHYS 475</td>
<td>Atmospheric Physics</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Climate Dynamics, PhD

Banner Code: SC-PHD-CLIM

Dr. Barry Klinger, Graduate Coordinator

116 Research Hall
Fairfax Campus
Phone: 703-993-9227
Email: bklinger@gmu.edu
Website: cos.gmu.edu/aoes/academics/climate-dynamics-graduate-program/

The mission of this program is to train the next generation of scientists in climate dynamics and related fields. Through a comprehensive grounding in coursework, our students learn about how the atmosphere, ocean, and land surface work together to determine the climate. In collaboration with internationally-known scientists, students conduct independent work to further our understanding of climate, how it varies, and how much of it we can predict. Tools in the program include cutting-edge climate models, superb computing facilities, sophisticated statistical techniques, and comprehensive data sets. Our graduates have gone on to work at top laboratories and universities.

Understanding climate variability and predictability poses difficult mathematical, computational, and observational questions that have generated increasing intellectual excitement in recent years. Climate variability has important ramifications for society, from planning for
Climate Dynamics, PhD

next year’s electrical demand and forecasting agricultural production to answering complex questions involving long-term change in global climate, sea level, and biodiversity. While it is impossible to predict day-to-day weather more than a few weeks in advance, progress in predicting El Niño supports the idea that seasonal averages of temperature, rainfall, and other factors may be at least partly predictable months or even years in advance. Likewise, there is a strong scientific basis for predicting long-term changes in global climate due to changing greenhouse gas concentrations.

Climate dynamics faculty members have a blend of expertise in dynamics, statistics, and computational methods. They are heavily involved with national and international collaborations. Faculty members and students work closely with scientists at the Center for Ocean-Land-Atmosphere Studies (COLA) (http://cola.gmu.edu/cola.html), a national leader in climate modeling.

Faculty research focuses on the areas of climate prediction and predictability, climate variability, coupled ocean-atmosphere-land dynamics, and dynamical systems and retrospective analysis. Recent research topics include predictability of weather and climate; modeling of the complex climate system; El Niño dynamics; monsoons; atmosphere-ocean interaction; land-climate interaction; decadal climate variability; ocean circulation theory; and climate change.

This has been designated a Green Leaf program (p. 107).

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants should have demonstrated a high aptitude for quantitative reasoning, applied mathematics, and physical science. Applicants should have an undergraduate degree from a regionally accredited institution with a GPA of at least 3.00 in undergraduate work, and a GRE verbal plus quantitative score of 301 (1,100 on the old scale). To apply, prospective students should submit a completed George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), a current résumé, three letters of recommendation, an expanded goals statement, and two copies of official transcripts from each college and graduate institution attended. An official report of scores obtained on the GRE-GEN should also be officially reported by ETS (https://www.ets.org). The GRE requirement for admission to the doctoral programs can be waived if the student holds a master’s degree from a regionally accredited U.S. institution. TOEFL scores are required of all international applicants who have not completed a master’s degree in the United States.

Policies

For policies governing all graduate programs, see AP 6 Graduate Policies (p. 90).

Reduction of Credit

For students entering the doctoral program with a master’s degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the college’s associate dean for student affairs. See AP 6.5.2 Reduction of Credits (p. 91) for more information.

Requirements

Degree Requirements

Total credits: 72

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 624) tab for specific policies related to this program.

Fundamental Climate Science Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 610</td>
<td>Introduction to the Physical Climate System</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 614</td>
<td>Land-Climate Interactions</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 711</td>
<td>Introduction to Atmospheric Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 712</td>
<td>Physical and Dynamical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 751</td>
<td>Predictability and Prediction of Weather and Climate</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Core Computational Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 690</td>
<td>Numerical Methods</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 715</td>
<td>Numerical Methods for Climate Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 762</td>
<td>Statistical Methods in Climate Research</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Climate Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 991</td>
<td>Climate Dynamics Seminar (taken three times)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 21 credits of graduate-level electives, including CLIM courses and other relevant courses as approved by the graduate coordinator. 1</td>
<td>21</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 21

1 Including up to 3 credits of CLIM 796 or CLIM 996.

Eligibility for Qualifying Exams

Satisfactory progress in the program is demonstrated by adequate research progress (as attested by the advisor) and by the student attaining a B- or higher in all CLIM courses and on the final exams of the “Core Climate” courses (CLIM 610 Introduction to the Physical Climate System, CLIM 614 Land-Climate Interactions, CLIM 711 Introduction to Atmospheric Dynamics, CLIM 712 Physical and Dynamical Oceanography, and CLIM 751 Predictability and Prediction of Weather and Climate).
Oceanography). If any of these conditions are not met, the director of the Climate Dynamics program convenes a faculty committee to recommend whether the student should continue in the program. The director makes the final decision based upon input from the committee. A student who is allowed to continue in the program may, in a later semester, retake any Core Climate final exam in which the student’s score was below B-.

To be eligible for CLIM 997 Doctoral Qualification, students must have received a B- or higher on the final exam of each of the four Core Climate courses. Students who have taken the equivalent of any of these courses must take the Core course’s final exam even if they do not take the course.

**Qualifying Exams**

Students take a qualifying exam by enrolling in CLIM 997 Doctoral Qualification. Students pass the exam by demonstrating an ability to analyze scientific problems, identify an open scientific question in climate dynamics, and outline a methodology to answer the question.

Students take CLIM 997 Doctoral Qualification in their second spring semester in the program. Students who enter in the spring have the option of taking it in their 2nd or 3rd spring semester.

**Advancement to Candidacy**

A grade of A or B in CLIM 997 Doctoral Qualification allows a student to begin work on a Climate Dynamics doctoral dissertation by enrolling in CLIM 998 Doctoral Dissertation Proposal. Once a dissertation committee approves the dissertation proposal and the student completes all non-dissertation program requirements, the student is formally advanced to doctoral candidacy.

**Dissertation Research and Defense**

After approval of the dissertation proposal, students are formally advanced to doctoral candidacy and produce the dissertation while taking CLIM 999 Doctoral Dissertation. The degree’s requirements will be fulfilled upon completion of the required coursework and approval of a dissertation that makes an original and significant contribution to the field.

No more than 24 combined credits from CLIM 998 Doctoral Dissertation Proposal and CLIM 999 Doctoral Dissertation may be applied toward satisfying doctoral degree requirements, with no more than 21 credits of CLIM 998 Doctoral Dissertation Proposal.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>CLIM 999</td>
<td>Doctoral Dissertation (minimum 3 credits)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits** 24

**Climate Science, MS (pending SCHEV approval)**

**Banner Code:** SC-MS-CLIS

**Dr. Barry Klinger, Graduate Coordinator**

109 Research Hall
Fairfax Campus
Phone: 703-993-9227

Email: bklinger@gmu.edu
Website: cos.gmu.edu/aoes/

**Note:** As of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia (SCHEV) for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

The understanding of climate science is essential to the interpretation of modern climate variations and the measurement of their impact. Climate data must be analyzed and interpreted in order to formulate useful responses and plan actions to meet specific climate challenges. The MS in Climate Science educates students to be climate professionals who can analyze and model advanced climate data. Students in the program learn to solve quantitative problems about atmospheric properties and variability, fluid dynamics, and the role of the ocean and land surface in climate. Students choose a concentration in either Climate Modeling or Climate Data to gain specific skills to understand and predict climate variations.

The program encourages applications from students with diverse backgrounds in physical science, mathematics, and engineering. Students with atmospheric science or meteorology degrees can deepen their understanding, enhance relevant computer skills, and gain insight into climate as a multi-component system. Students with physics, math, or other degrees will find that climate provides compelling applications of their mathematical and computational skills. All students will be taught by faculty of the Atmospheric, Oceanic, and Earth Sciences Department (https://catalog.gmu.edu/colleges-schools/science/atmospheric-oceanic-earth-sciences) and the Center for Ocean-Land-Atmosphere Studies (http://cola.gmu.edu), which includes scientists doing pioneering work in climate dynamics, climate modeling, predictability, and statistical analysis of climate data.

**Admissions & Policies**

**Note:** As of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia (SCHEV) for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

**Admissions**

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Admission requirements include:

- An earned baccalaureate degree from a regionally accredited institution of higher education, or international equivalent, verified from official transcripts.
- A minimum 3.00 GPA on a 4.00 scale in baccalaureate study.
- Complete the online application and submit all required materials.

Program admission decisions give preference to students with an undergraduate degree in physical science, mathematics, or engineering.
Students with other undergraduate degrees should consult with the program’s administration regarding the suitability of their undergraduate preparation.

### Requirements

**Note:** As of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia (SCHEV) for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

### Degree Requirements

Total Credits: 30

Students must complete the Core Climate Courses, Seminar Course, and Thesis and Elective Courses sections, and in addition, choose one concentration:

#### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 511</td>
<td>Atmospheric Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>or CLIM 711</td>
<td>Introduction to Atmospheric Dynamics</td>
<td></td>
</tr>
<tr>
<td>CLIM 512</td>
<td>Physical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>or CLIM 712</td>
<td>Physical and Dynamical Oceanography</td>
<td></td>
</tr>
<tr>
<td>CLIM 610</td>
<td>Introduction to the Physical Climate System</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 614</td>
<td>Land-Climate Interactions</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 690</td>
<td>Scientific Basis of Climate Change</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

1 Students who wish to continue with the Climate Dynamics, PhD (https://catalog.gmu.edu/colleges-schools/science/atmospheric-oceanic-earth-sciences/climate-dynamics-phd) should note that CLIM 711 Introduction to Atmospheric Dynamics and CLIM 712 Physical and Dynamical Oceanography are required for the PhD.

#### Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 991</td>
<td>Climate Dynamics Seminar (1 credit, repeated three times)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

#### Thesis or Non-thesis Options

Choose one of the following options:

**Thesis Option**

- CLIM 799 Master’s Thesis in Climate
- Choose 1 unrestricted, graduate-level elective course

**Non-thesis Option**

- Choose 2 unrestricted, graduate-level elective courses

Total Credits 6

### Concentrations

#### Concentration in Climate Modeling (CM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 759</td>
<td>Topics in Climate Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one course from the Climate Science elective list (below)

Total Credits 6

#### Concentration in Climate Data (CD)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 680</td>
<td>Climate Data</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one course from the Mathematical, Computational, or Geographical elective list (below)

Total Credits 6

### Electives

Please pay close attention to course credit values and consider how they will work into your degree program.

#### Climate Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 680</td>
<td>Climate Data</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 690</td>
<td>Scientific Basis of Climate Change</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 713</td>
<td>Atmosphere-Ocean Interactions</td>
<td></td>
</tr>
<tr>
<td>CLIM 750</td>
<td>Geophysical Fluid Dynamics</td>
<td></td>
</tr>
<tr>
<td>CLIM 751</td>
<td>Predictability and Prediction of Weather and Climate</td>
<td></td>
</tr>
<tr>
<td>CLIM 752</td>
<td>Ocean General Circulation</td>
<td></td>
</tr>
<tr>
<td>CLIM 753</td>
<td>General Circulation of the Atmosphere</td>
<td></td>
</tr>
<tr>
<td>CLIM 754</td>
<td>Elements of the Tropical Climate System</td>
<td></td>
</tr>
<tr>
<td>CLIM 759</td>
<td>Topics in Climate Dynamics (when the topic is “Advanced Predictability” or “Convection”)</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 532</td>
<td>Paleoclimatology</td>
<td></td>
</tr>
<tr>
<td>GEOL 535</td>
<td>Quantitative Stratigraphy</td>
<td></td>
</tr>
<tr>
<td>GEOL 565</td>
<td>Paleoclimatology</td>
<td></td>
</tr>
<tr>
<td>GGS 670</td>
<td>Introduction to Atmosphere and Weather</td>
<td></td>
</tr>
</tbody>
</table>

#### Mathematical, Computational, or Geographical

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 715</td>
<td>Numerical Methods for Climate Modeling</td>
<td></td>
</tr>
<tr>
<td>CLIM 759</td>
<td>Topics in Climate Dynamics (when the topic is “Earth System Modeling”)</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 762</td>
<td>Statistical Methods in Climate Research</td>
<td></td>
</tr>
<tr>
<td>CLIM 763</td>
<td>Advanced Statistical Methods in Climate Research</td>
<td></td>
</tr>
<tr>
<td>GEOL 525</td>
<td>Modeling Earth Signals and Systems</td>
<td></td>
</tr>
</tbody>
</table>

Unrestricted, graduate-level elective courses may be chosen from the following prefixes: Climate Dynamics (CLIM) (https://catalog.gmu.edu/courses/clim), Mathematics (MATH) (https://catalog.gmu.edu/courses/math), Computational and Data Sciences (CDS) (https://catalog.gmu.edu/courses/cds), Computational Science and Informatics (CSI) (https://catalog.gmu.edu/courses/csi), Computational Social Science (CSS) (https://catalog.gmu.edu/courses/css), Geography and Geoinformation Science (GGS) (https://catalog.gmu.edu/courses/ggs), or chosen from the Climate- Relevant elective list (below).

Other courses can be approved by the graduate coordinator.
Earth Science, BS

Banner Code: SC-BS-ESCI

Dr. Stacey Verardo, Undergraduate Coordinator and Professor

3451 Exploratory Hall
Fairfax Campus

Phone: 703-993-1045
Email: sverardo@gmu.edu
Website: cos.gmu.edu/aoes/academics/undergraduate-programs/

This degree is intended for students interested in studying the Earth and its processes. Students receive a broad background in the Earth sciences and select one of five specialty concentrations. The concentrations in Earth Surface Processes, Environmental Geoscience, Geology, and Paleontology are solely offered by the Department of Atmospheric, Oceanic and Earth Sciences (p. 620). The concentration in Oceanography and Estuarine science is offered jointly with the Department of Environmental Science and Policy (p. 687), where specific advising is also available.

This is a Green Leaf program (p. 107).

**Teacher Licensure**

Students who wish to become teachers and plan to seek teacher licensure should consider the following options:

- Curriculum and Instruction Undergraduate Certificate (p. 166)
- Earth Science, BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Earth Science concentration) (p. 631)

Interested students should attend an information session early in their undergraduate career. For more information, visit the Graduate School of Education’s website (http://gse.gmu.edu).

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

Students must fulfill all Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142).

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

**Writing Intensive Requirement**

GEOL 317 Geomorphology fulfills the writing intensive requirement for this major, with the exception of:

- The Environmental Geoscience Concentration, whereby GEOL 305 Environmental Geology fulfills the writing intensive requirement.
• The Paleontology Concentration, whereby GEOL 334 Vertebrate Paleontology fulfills the writing intensive requirement.

Requirements

Degree Requirements

Total credits: minimum 120

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 627) tab for specific policies related to this program.

Students must complete all coursework with a minimum GPA of 2.00.

Core Science and Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 309</td>
<td>Introduction to Oceanography</td>
<td></td>
</tr>
<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 211 &amp; CHEM 213</td>
<td>General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212 &amp; CHEM 214</td>
<td>General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following options: 3-4

**Option A:**

CLIM 111 | Introduction to the Fundamentals of Atmospheric Science (Mason Core) (p. 142) | 1        |

**Option B:**

PHYS 111 | Introduction to the Fundamentals of Atmospheric Science (Mason Core) (p. 142) | 1        |

**Option C:**

GGS 309 | Meteorology and Climate                                      | 1        |

Total Credits: 32-33

Physics

Select one 8-credit sequence from the following: 8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142) and University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 161</td>
<td>and University Physics II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 260</td>
<td>and University Physics II Laboratory (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 261</td>
<td>and University Physics II Laboratory (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 244</td>
<td>and College Physics I Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 245</td>
<td>and College Physics II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 246</td>
<td>and College Physics II Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 8

Concentration in Earth Surface Processes (EP)

This concentration focuses on a broad understanding of the physical processes and natural materials found at or near the Earth’s surface that have produced the primary landforms and landscapes observed today. Fundamental concepts, methods and techniques of landscape analysis are also examined. Students choosing this concentration must complete the following coursework:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>or EVPP 110</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 303</td>
<td>Field Mapping Techniques</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 306</td>
<td>Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 317</td>
<td>Geomorphology 1</td>
<td>4</td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 10-15 credits from the following: 10-15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 305</td>
<td>Environmental Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 313</td>
<td>Hydrogeology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 315</td>
<td>Topics in Geology II</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 363</td>
<td>Coastal Morphology and Processes</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 401</td>
<td>Structural Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 403</td>
<td>Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 417</td>
<td>Geophysics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 31-36

1 Fulfills writing intensive requirement.

Concentration in Environmental Geoscience (EVGS)

This concentration provides the tools for applying geologic information (on soils, rocks, water, weather, and landscapes) to contemporary environmental problems (including: pollution, waste management, resource extraction, natural hazards, land-use, habitat restoration, species preservation, and human health). Environmental geoscience
studies the physical environment in which biological interactions take place, whereby aiding the understanding of ecology. Students choosing this concentration must complete the following coursework:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 305</td>
<td>Environmental Geology 1</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 306</td>
<td>Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 313</td>
<td>Hydrogeology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 320</td>
<td>Geology of Earth Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 321</td>
<td>Geology of Energy Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 403</td>
<td>Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>or CHEM 427</td>
<td>Aquatic Environmental Chemistry</td>
<td></td>
</tr>
<tr>
<td>EVPP 336</td>
<td>Human Dimensions of the Environment</td>
<td>3</td>
</tr>
<tr>
<td>or EVPP 361</td>
<td>Introduction to Environmental Policy</td>
<td></td>
</tr>
</tbody>
</table>

Select 6-12 credits from the following: 6-12

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 101</td>
<td>Global Warming: Weather, Climate, and Society (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CLIM 412</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td></td>
</tr>
<tr>
<td>EVPP 201</td>
<td>Environment and You: Issues for the Twenty-First Century (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>EVPP 336</td>
<td>Human Dimensions of the Environment</td>
<td></td>
</tr>
<tr>
<td>EVPP 361</td>
<td>Introduction to Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 432</td>
<td>Energy Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 436</td>
<td>The Human Dimensions of Global Climate Change</td>
<td></td>
</tr>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td></td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GGS 322</td>
<td>Issues in Global Change</td>
<td></td>
</tr>
<tr>
<td>PHYS 331</td>
<td>Fundamentals of Renewable Energy</td>
<td></td>
</tr>
<tr>
<td>CONF 101</td>
<td>Conflict and Our World (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>INTS 211</td>
<td>Introduction to Conservation Studies (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>PRLS 300</td>
<td>People with Nature</td>
<td></td>
</tr>
<tr>
<td>PRLS 402</td>
<td>Human Behavior in Natural Environments</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 35-41

1  Fulfills writing intensive requirement for this concentration only.

Concentration in Geology (GEOL)

This concentration is fashioned after traditional geology bachelor's degrees. It allows graduates to be employed as geologists in the field or to pursue graduate studies in geology. Students choosing this concentration must complete the following coursework:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 308</td>
<td>Igneous and Metamorphic Petrology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 312</td>
<td>Invertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 317</td>
<td>Geomorphology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 401</td>
<td>Structural Geology</td>
<td>4</td>
</tr>
<tr>
<td>Six credits of GOL 404</td>
<td>Geological Field Techniques 3</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 34

Concentration in Oceanography and Estuarine Science (OEST)

This concentration provides students with a comprehensive knowledge of oceanography. Additional coursework in physical and chemical oceanography give insight into the aquatic environment and its link to both ecosystems and climate. Within the concentration, students can choose an Open Ocean or Coastal Ocean option. The curriculum will emphasize local and regional case studies, in particular the Chesapeake Bay. The program will provide students with the basic training required to allow them to obtain entry level positions in oceanographic and estuarine career tracks or an appropriate graduate degree program. Students choosing this concentration must complete the following coursework:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 412</td>
<td>Physical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>or GEOL 412</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 458</td>
<td>Chemical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>or CHEM 458</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following 7-8 credit sequences: 7-8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOL 107</td>
<td>and Intro Biology II Lecture (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOL 106</td>
<td>and Introductory Biology II Laboratory (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOL 310</td>
<td>and Biodiversity</td>
<td></td>
</tr>
<tr>
<td>&amp; EVPP 110</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; EVPP 111</td>
<td>and The Ecosphere: An Introduction to Environmental Science II (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following options: 15-16

Open Ocean Option:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 364</td>
<td>Marine Geology</td>
<td></td>
</tr>
<tr>
<td>BIOL 449</td>
<td>Marine Ecology</td>
<td></td>
</tr>
</tbody>
</table>

Three additional courses from the electives list below (minimum of 9 credits)

Coastal Ocean Option:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 363</td>
<td>Coastal Morphology and Processes</td>
<td></td>
</tr>
<tr>
<td>EVPP 581</td>
<td>Estuarine and Coastal Ecology</td>
<td></td>
</tr>
</tbody>
</table>
Earth Science, BS

Three additional courses from the electives list below (minimum of 9 credits)

Total Credits: 32-34

<table>
<thead>
<tr>
<th>Electives</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GEOL 308</td>
<td>Igneous and Metamorphic Petrology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GEOL 312</td>
<td>Invertebrate Paleontology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GEOL 363</td>
<td>Coastal Morphology and Processes</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GEOL 364</td>
<td>Marine Geology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GEOL 365</td>
<td>Paleocceanography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIOL 440</td>
<td>Field Biology *</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIOL 449</td>
<td>Marine Ecology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EVPP 350</td>
<td>Freshwater Ecosystems</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EVPP 419</td>
<td>Marine Mammal Biology and Conservation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EVPP 581</td>
<td>Estuarine and Coastal Ecology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EVPP 582</td>
<td>Estuarine and Coastal Ecology Laboratory</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>INTS 395</td>
<td>Field-Based Work †</td>
<td>1-18</td>
<td></td>
</tr>
</tbody>
</table>

Additional recommended course:

RECR 161 Scuba Diving: Basic 2

1 When topic is Coral Reef Ecology
2 When topic is Exploring Underwater Ecology.

Concentration in Paleontology (PLEO)

This concentration focuses on a broad understanding of Earth's history and the evolution of life on Earth as revealed through the fossil record. Fundamental concepts, methods and techniques of historical geology and paleontological data and analysis are also examined. This concentration may not be taken in conjunction with the Paleontology Minor (https://catalog.gmu.edu/colleges-schools/science/atmospheric-oceanic-earth-sciences/paleontology-minor). Students choosing this concentration must complete the following coursework:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 312</td>
<td>Invertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 334</td>
<td>Vertebrate Paleontology *</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>or BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Select 9-10 credits from the following additional courses: 9-10

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 306</td>
<td>Soil Science</td>
<td></td>
</tr>
<tr>
<td>GEOL 317</td>
<td>Geomorphology</td>
<td></td>
</tr>
<tr>
<td>GEOL 332</td>
<td>Paleoclimatology</td>
<td></td>
</tr>
<tr>
<td>GEOL 364</td>
<td>Marine Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 403</td>
<td>Geochemistry</td>
<td></td>
</tr>
<tr>
<td>GEOL 412</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
</tbody>
</table>

GEOL 458 Chemical Oceanography
GEOL 565 Paleocceanography
Select 3-5 credits from the following additional course: 3-5

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 310</td>
<td>Biodiversity &amp; BIOL 330 and Biodiversity Lab and Recitation</td>
<td></td>
</tr>
<tr>
<td>BIOL 320</td>
<td>Comparative Chordate Anatomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 331</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
<tr>
<td>BIOL 374</td>
<td>Biogeography: Space, Time, and Life or GGS 321 Biogeography</td>
<td></td>
</tr>
<tr>
<td>BIOL 468</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td>BIOL 470</td>
<td>Dinosaur Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 471</td>
<td>Evolution</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 36-39

1 Fulfills writing intensive requirement for this concentration only.

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core (p. 142) requirements, Requirements for Bachelor's Degrees (p. 89), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- EP concentration: 43-49 credits
- EVGS concentration: 38-45 credits
- GEOL concentration: 45-46 credits
- OEST concentration: 45-48 credits
- PLEO concentration: 40-44 credits

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Integration Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 40
Honors

Honors in the Major
Earth science and geology majors who have completed 16 credits of math and science, including GEOL 302 Mineralogy with a GPA of 3.00 or higher are eligible to enter the departmental honors program. Transfer students who have an incoming GPA of 3.10 or higher in math and science and a grade of 'B' or better in GEOL 302 Mineralogy are also eligible. To graduate with honors in Earth Science, students are required to maintain a minimum GPA of 3.00 in math and science courses and complete one of the two following sets of courses with an average GPA of 3.50 or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Set of Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOL 410</td>
<td>Research Proposal Preparation</td>
<td>1</td>
</tr>
<tr>
<td>GEOL 411</td>
<td>Geological Research</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Second Set of Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLIM 408</td>
<td>Senior Research</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Master's

Bachelor's Degree (selected)/Environmental Science and Policy, Accelerated MS

Overview
This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy, MS (p. 696) in less time than if they had first graduated with an environmentally-focused Green Leaf-designated (p. 107) BA or BS degree and then applied to the MS program sequentially.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

Admission Requirements
Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated (p. 107) major or minor may apply for provisional acceptance into this accelerated master's program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 212 General Chemistry II (Mason Core) (p. 142) and three semesters of biology, including a course in ecology, or the equivalent, for example:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td></td>
</tr>
<tr>
<td>Option 2:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
<td></td>
</tr>
<tr>
<td>EVPP 301</td>
<td>Environmental Science: Biological Diversity and Ecosystems</td>
<td></td>
</tr>
<tr>
<td>EVPP 302</td>
<td>Environmental Science: Biomes and Human Dimensions</td>
<td></td>
</tr>
<tr>
<td>EVPP 305</td>
<td>Environmental Microbiology Essentials</td>
<td></td>
</tr>
<tr>
<td>EVPP 306</td>
<td>Environmental Microbiology Essentials Laboratory</td>
<td></td>
</tr>
<tr>
<td>Option 3:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td></td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td></td>
</tr>
</tbody>
</table>

By the beginning of the undergraduate's senior year, they should first submit a Graduate Application for Accelerated Master's Program form (obtained from the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us)). Secondly, in their senior year accelerated master's students must complete the two graduate courses indicated on their Accelerated Master's Program Application with a minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. Upon completion and conferral of the undergraduate degree in a Green Leaf-designated (p. 107) program, in the semester indicated in the application, they must additionally submit the Bachelor's/Accelerated Master's Transition form (found on the Office of the University Registrar website (http://registrar.gmu.edu/forms)) and will subsequently be admitted into graduate status.

By at least the beginning of their senior year, they should seek out a faculty member in the Department of Environmental Science and Policy (p. 688) who is willing to serve as their advisor. This advisor will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies. Admission into a research-oriented master's concentration is dependent upon securing the agreement of a faculty advisor. Faculty from a variety of departments and colleges at George Mason (called "program faculty") can serve as master's advisors. Potential students are encouraged to speak with the graduate program coordinator in the department to obtain guidance on this issue.

Application Requirements
Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog, excluding the GRE exam requirement (which is not required for those enrolled in the accelerated program). This includes three letters of recommendation (at least one from a former professor or someone with a PhD), a recent resume, a statement of interest/research goals and interests (including information on the candidate's proposed MS research), and a letter from their advisor stating that the advisor agrees
to take on the candidate as an MS student, how the candidate would be a good fit for them and why candidate's research topic would be suitable.

For information specific to the accelerated Environmental Science and Policy, MS (p. 696), see Graduate Admissions on the department’s website (http://esp.gmu.edu/academic-programs/graduate/admissions).

Reserve Graduate Credits
Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate environmentally-focused graduate coursework may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master’s program and must then complete an additional 27 credits to receive the master’s degree.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition form found on the Office of the University Registrar website (http://registrar.gmu.edu/forms) (as noted above).

Students may take up to 6 additional environmentally-focused graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, an MS could be completed with 21 post-bachelor’s credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department.

Earth Science, BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Earth Science concentration)

Overview
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BS in Earth Science (p. 627) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education earth science) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of Atmospheric, Oceanic and Earth Sciences (p. 620) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Fall</td>
<td>EDCI 573</td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>EDCI 673</td>
<td>3</td>
</tr>
<tr>
<td>Senior Fall</td>
<td>EDUC 672</td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>EDRD 619</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 12

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Earth Science Minor
Banner Code: ESCI

Dr. Stacey Verardo, Undergraduate Coordinator and Professor
3451 Exploratory Hall
Fairfax Campus
Phone: 703-993-1045
Email: sverardo@gmu.edu
Website: cos.gmu.edu/aoes/academics/undergraduate-programs/

Students taking this minor complete coursework in the solid Earth, oceanography, and the atmosphere. This minor pairs well with other degrees in the sciences such as chemistry or biology.

This has been designated a Green Leaf program (p. 107).

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Students may not receive both the Geology Minor (p. 639) and the Earth Science Minor.

Requirements

Minor Requirements
Total credits: 18-19

This is a Green Leaf program.
Students should refer to the Admissions & Policies tab for specific policies related to this program.

Students must successfully complete the following coursework with a minimum GPA of 2.00.

### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 309</td>
<td>Introduction to Oceanography</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following options: 3-4

- **Option One:**
  - CLIM 111 Introduction to the Fundamentals of Atmospheric Science (Mason Core) (p. 142)
  - CLIM 112 Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core) (p. 142)

- **Option Two:**
  - GGS 309 Meteorology and Climate

**Total Credits:** 10-11

### Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 8 credits of GEOL electives (p. 1749)</td>
<td>8</td>
</tr>
</tbody>
</table>

**Total Credits:** 8

### Earth Systems Science, MS (AOES)

**Banner Code:** SC-MS-ESSC

**Geoff Gilleaudeau, Assistant Professor**

3452 Exploratory Hall
Fairfax Campus

Phone: 703-993-3289
Email: ggilleau@gmu.edu
Website: cos.gmu.edu/aoes/academics/earth-science-graduate-program/

This is a shared program between the Department of Atmospheric, Oceanic, and Earth Sciences (p. 620) and the Department of Geography and Geoinformation Science (p. 715).

The program addresses the growing demand for trained professionals in the Earth sciences. The degree emphasizes a research-oriented, global systems approach to studying the Earth and its systems—the atmosphere, the hydrosphere, and the lithosphere, including their interrelationships and interactions with the biosphere. Emphasis is on the observation, measurement, and analysis of Earth's systems.

Most student research projects and theses will relate to geologic and geographic topics, however studies of related topics in Earth science are welcome. Students completing the program are qualified to pursue careers that require knowledge of the basics of Earth systems science and the requisite tools, specifically pertaining to the area of Earth science that they choose to investigate. Students are encouraged to undertake a master's thesis but may choose a research project. In the latter case, students must pass a comprehensive exam.

### Admissions & Policies

#### Admissions

University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

#### Eligibility

Applicants should have earned a BS degree in atmospheric, Earth, environmental, geographical, ocean, or physical science. Previous coursework should include two semesters each of calculus, chemistry, and physics, and one semester of statistics. Applicants should have a minimum GPA of 3.00 in their undergraduate degree.

#### Application Requirements

Official transcripts from each college and graduate institution attended, a current résumé, and a goals statement are required. Applicants also need three letters of recommendation and an official report of scores obtained on the GRE-GEN. The GRE requirement for admission may be waived if the student holds a master’s degree from a regionally accredited U.S. institution. TOEFL scores are required of all international applicants.

#### Policies

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

### Requirements

#### Degree Requirements

**Total credits:** 30

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Candidates must complete 10 credits of GGS courses and 10 credits of GEOL/CLIM courses toward their requirements. (*Culminating Experience* credits do not count towards this requirement).

#### Earth Science Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one course from each of the following groups: 9</td>
<td></td>
</tr>
</tbody>
</table>

**Atmosphere:**

- CLIM 710
- CLIM 714
- GEOL 532 Paleoclimatology
- GGS 670 Introduction to Atmosphere and Weather
- PHYS 575 Atmospheric Physics I

**Hydrosphere:**

- CLIM 512 Physical Oceanography
- CLIM 712 Physical and Dynamical Oceanography
- GEOL 513 Hydrogeology
The Geology, BA program aims to provide students with both high-quality conceptual knowledge and hands-on training in geology in preparation for careers within the earth-science field or for graduate studies in geology. This is a Green Leaf program (p. 107).

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies

Students must fulfill all Requirements for Bachelor's Degrees (p. 89) including the Mason Core (p. 142).

GEOL 317 Geomorphology fulfills the writing intensive requirement for this major.

For policies governing all undergraduate degrees, see AP .5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120
This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 634) tab for specific policies related to this program.

Candidates for a degree in geology must complete all courses with a minimum GPA of 2.50.

### Geology Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 308</td>
<td>Igneous and Metamorphic Petrology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 312</td>
<td>Invertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 317</td>
<td>Geomorphology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 401</td>
<td>Structural Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 404</td>
<td>Geological Field Techniques</td>
<td>3</td>
</tr>
</tbody>
</table>

Six credits of

Total Credits 38

2 Fulfills writing-intensive requirement.

A 6-credit geology field camp may be substituted for this requirement; see advisor for details.

### Chemistry

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core)</td>
<td>1</td>
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</tbody>
</table>

Total Credits 4

### Physics

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 243 &amp; PHYS 244</td>
<td>College Physics I (Mason Core) and College Physics I Lab (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 160 &amp; PHYS 161</td>
<td>University Physics I (Mason Core) and University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 4

### Mathematics

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 110</td>
<td>Introductory Probability (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Credits 3-4

### Computer Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
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</tr>
</tbody>
</table>

Total Credits 3

### Program Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Students must take 9 credits of degree-related coursework in a coherent program designed in coordination with advisor and approved by department chair

Total Credits 9

### Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires an additional 58-59 credits, which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), College Requirements for the BA Degree (outlined below), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfil all requirements.

### Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

### Mathematics

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 110</td>
<td>Introductory Probability (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Credits 3-4

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.

### College Requirements for the BA Degree

In addition to the program requirements and the Mason Core (p. 142) requirements, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill this college-level requirement may also be used simultaneously to satisfy other requirements such as Mason Core (p. 142) requirements,
other college-level requirements, or requirements for the major. In some cases, the requirements listed below may be superseded by requirements of the degree program and the Mason Core (p. 142).

**Philosophy or Religious Studies**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>PHIL</td>
<td>(p. 2044) 1</td>
<td></td>
</tr>
<tr>
<td>RELI</td>
<td>(p. 2144)</td>
<td></td>
</tr>
</tbody>
</table>

1 PHIL 323 Classical Western Political Theory and PHIL 324 Modern Western Political Theory may not be used to fulfill this requirement.

**Social and Behavioral Sciences**

Choose one approved Mason Core: Social and Behavioral Sciences (p. 150) course in addition to the Mason Core (p. 142)-required course for a total of 6 credits. The two courses used to fulfill the combined college-level and university requirements must be from different disciplines.

This requirement may be fulfilled by completing any course in ANTH (p. 1212), CRIM (p. 1514), ECON (p. 1564), GOVT (p. 1774), HIST (p. 1818) 1, LING (p. 1896), PSYC (p. 2074), or SOCI (p. 2167), and the following GGS (p. 1732) courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

1 HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

**Natural Science**

Choose one credit in addition to the Mason Core: Natural Science (p. 148) requirement for a total of 8 credits. This combined college-level and university requirement must be fulfilled by completing two of any approved Mason Core: Natural Science (p. 148) courses that include a laboratory experience 1.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional Mason Core Natural Science course</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>BIOL 124 Human Anatomy and Physiology and BIOL 125 Human Anatomy and Physiology may not be used to fulfill this requirement.</td>
<td></td>
</tr>
</tbody>
</table>

**Foreign Language**

Intermediate-level proficiency in one foreign language is required 1. This requirement may be fulfilled by completing a course in a foreign language numbered 202, 209, or 210 (or higher-level courses taught in the language).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select a foreign language course numbered 202, 209, 210, or higher if a waiver isn't applicable</td>
<td></td>
</tr>
</tbody>
</table>

1 Students may be eligible for a waiver of this requirement if they are already proficient in a second language or if they have received a satisfactory score on an approved proficiency test. Additional information on waivers can be found via the college's Office of Academic and Student Affairs (https://cos.gmu.edu/uaa).

**Non-Western Culture**

Choose one approved Non-Western Culture Requirement 1 course in addition to the course used to fulfill the Mason Core: Global Understanding (p. 146) requirement. A course used to fulfill the Mason Core: Global Understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. However, a course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core (p. 142) requirements, college-level requirements, or requirements for the major).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits from approved Non-Western Culture courses if a waiver isn't applicable:</td>
<td></td>
</tr>
</tbody>
</table>

1 Students may be eligible for a waiver of this requirement if they are already proficient in a second language or if they have received a satisfactory score on an approved proficiency test. Additional information on waivers can be found via the college's Office of Academic and Student Affairs (https://cos.gmu.edu/uaa).
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td>3</td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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</tr>
<tr>
<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<td>GOVT 328</td>
<td>Global Political Theory</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
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<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
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<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
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<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
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<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
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<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 252</td>
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<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>HIST 326</td>
<td>Stalinism</td>
<td>3</td>
</tr>
<tr>
<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
<td>3</td>
</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
<td>3</td>
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<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
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<td>History of South Africa (Mason Core) (p. 142)</td>
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<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
</tr>
<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>3</td>
</tr>
<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td>3</td>
</tr>
<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
</tr>
<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
RELI 337  Mysticism: East and West  3
RELI 365  Muhammad: Life and Legacy  3
RELI 374  Islamic Thought (Mason Core) (p. 142)  3
RELI 375  Qur’an and Hadith  3
RELI 379  Islamic Law, Society, and Ethics  3
RELI 387  Islam, Democracy, and Human Rights  3
RELI 490  Comparative Study of Religions (Mason Core) (p. 142)  3
RUSS 353  Russian Civilization (Mason Core) (p. 142)  3
RUSS 354  Contemporary Post-Soviet Life (Mason Core) (p. 142)  3

1 Students who can document attendance at a native school in a non-western country for at least four years may request a waiver from this requirement through the CHSS Undergraduate Academic Affairs Office (http://chssundergrad.gmu.edu).

Honors

Honors in the Major

Earth science and geology majors who have completed 16 credits of math and science, including GEOL 302 Mineralogy with a GPA of 3.00 or higher are eligible to enter the departmental honors program. Transfer students who have an incoming GPA of 3.10 or higher in math and science and a grade of ‘B’ or better in GEOL 302 Mineralogy are also eligible. To graduate with honors in Earth Science, students are required to maintain a minimum GPA of 3.00 in math and science courses and complete one of the two following sets of courses with an average GPA of 3.50 or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 410</td>
<td>Research Proposal Preparation</td>
<td>1</td>
</tr>
<tr>
<td>GEOL 411</td>
<td>Geological Research</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Set of Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 408</td>
<td>Senior Research</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Master’s

Bachelor's Degree (selected)/ Environmental Science and Policy, Accelerated MS

Overview

This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy, MS (p. 696) in less time than if they had first graduated with an environmentally-focused Green Leaf-designated (p. 107) BA or BS degree and then applied to the MS program sequentially.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

Admission Requirements

Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated (p. 107) major or minor may apply for provisional acceptance into this accelerated master’s program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 212 General Chemistry II (Mason Core) (p. 142) and three semesters of biology, including a course in ecology, or the equivalent, for example:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>13</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td></td>
</tr>
</tbody>
</table>

Option 2:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
<td></td>
</tr>
<tr>
<td>EVPP 301</td>
<td>Environmental Science: Biological Diversity and Ecosystems</td>
<td></td>
</tr>
<tr>
<td>EVPP 302</td>
<td>Environmental Science: Biomes and Human Dimensions</td>
<td></td>
</tr>
<tr>
<td>EVPP 305</td>
<td>Environmental Microbiology Essentials</td>
<td></td>
</tr>
<tr>
<td>EVPP 306</td>
<td>Environmental Microbiology Essentials Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

Option 3:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td></td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td></td>
</tr>
</tbody>
</table>

6 credits of BIOL or CONS electives

By the beginning of the undergraduate’s senior year, they should first submit a Graduate Application for Accelerated Master’s Program form (obtained from the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us)). Secondly, in their senior year accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application with a minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. Upon completion and conferral of the undergraduate degree in a Green Leaf-designated (p. 107) program, in the semester indicated in the application, they must additionally submit the Bachelor’s/Accelerated Master’s Transition form (found on the Office of the University Registrar website (http://registrar.gmu.edu/forms)) and will subsequently be admitted into graduate status.

By at least the beginning of their senior year, they should seek out a faculty member in the Department of Environmental Science and Policy (p. 688) who is willing to serve as their advisor. This advisor will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies. Admission into a research-oriented master’s concentration is dependent upon securing the agreement of a faculty advisor. Faculty from a variety of departments and colleges at George Mason (called “program faculty”) can serve as master’s advisors. Potential students are encouraged to speak with the
graduate program coordinator in the department to obtain guidance on this issue.

Application Requirements

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog, excluding the GRE exam requirement (which is not required for those enrolled in the accelerated program). This includes three letters of recommendation (at least one from a former professor or someone with a PhD), a recent resume, a statement of interest/research goals and interests (including information on the candidate's proposed MS research), and a letter from their advisor stating that the advisor agrees to take on the candidate as an MS student, how the candidate would be a good fit for them and why candidate's research topic would be suitable.

For information specific to the accelerated Environmental Science and Policy, MS (p. 696), see Graduate Admissions on the department's website (http://esp.gmu.edu/academic-programs/graduate/admissions).

Reserve Graduate Credits

Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate environmentally-focused graduate coursework may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master's program and must then complete an additional 27 credits to receive the master's degree.

To apply these credits to the master's degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master's Transition form found on the Office of the University Registrar website (http://registrar.gmu.edu/forms) (as noted above).

Students may take up to 6 additional environmentally-focused graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree but will reduce the subsequent master's degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, an MS could be completed with 21 post-bachelor's credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department.

Geology Minor

Banner Code: GEOL

Dr. Stacey Verardo, Undergraduate Coordinator and Professor

3451 Exploratory Hall
Fairfax Campus

Phone: 703-993-1045
Email: sverardo@gmu.edu
Website: cos.gmu.edu/aoes/academics/undergraduate-programs/

Students take coursework in physical geology, historical geology, and mineralogy as the fundamental courses in this minor. This minor pairs well with other degrees in the sciences such as chemistry or biology.

This is a Green Leaf program (p. 107).

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Students may not receive both the Geology Minor and the Earth Science Minor (p. 632).

Requirements

Minor Requirements

Total credits: 20

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 639) tab for specific policies related to this program.

Students must successfully complete the following coursework with a minimum GPA of 2.00.

Geology Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 12

Additional Geology Courses

Select 8 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td>8</td>
</tr>
<tr>
<td>GEOL 308</td>
<td>Igneous and Metamorphic Petrology</td>
<td></td>
</tr>
<tr>
<td>GEOL 312</td>
<td>Invertebrate Paleontology</td>
<td></td>
</tr>
<tr>
<td>GEOL 317</td>
<td>Geomorphology</td>
<td></td>
</tr>
<tr>
<td>GEOL 401</td>
<td>Structural Geology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 8

Ocean and Estuarine Science Minor

Banner Code: OES

Dr. Stacey Verardo, Undergraduate Coordinator and Professor

3451 Exploratory Hall
Fairfax Campus

Phone: 703-993-1045
Email: sverardo@gmu.edu
Website: cos.gmu.edu/aoes/academics/undergraduate-programs/

This minor is designed for students interested in oceans and coastlines. The fundamental courses include topics in oceanography, physical
oceanography, coastal morphology and process, marine geology, chemical oceanography, and marine ecology.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18-22

Students should refer to the Admissions & Policies (p. 640) tab for specific policies related to this program.

Students must successfully complete the following coursework with a minimum GPA of 2.00.

Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 412</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>GEOL 363</td>
<td>Coastal Morphology and Processes</td>
<td></td>
</tr>
<tr>
<td>GEOL 364</td>
<td>Marine Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 458</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
<tr>
<td>BIOL 449</td>
<td>Marine Ecology</td>
<td></td>
</tr>
</tbody>
</table>

Select two courses from the following: 6-7

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 412</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>GEOL 363</td>
<td>Coastal Morphology and Processes</td>
<td></td>
</tr>
<tr>
<td>GEOL 364</td>
<td>Marine Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 458</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
<tr>
<td>BIOL 449</td>
<td>Marine Ecology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9-10

Additional Courses

Select 9-12 credits from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 101</td>
<td>Global Warming: Weather, Climate, and Society (Mason Core)</td>
<td>9-12</td>
</tr>
<tr>
<td>CLIM 412</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 308</td>
<td>Igneous and Metamorphic Petrology</td>
<td></td>
</tr>
<tr>
<td>GEOL 312</td>
<td>Invertebrate Paleontology</td>
<td></td>
</tr>
<tr>
<td>GEOL 363</td>
<td>Coastal Morphology and Processes</td>
<td></td>
</tr>
<tr>
<td>GEOL 364</td>
<td>Marine Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 458</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
<tr>
<td>BIOL 449</td>
<td>Marine Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 450</td>
<td>Marine Conservation</td>
<td></td>
</tr>
<tr>
<td>BIOL 440 &amp; BIOL 455</td>
<td>Marine Mammal Biology and Conservation Field Course</td>
<td>2</td>
</tr>
<tr>
<td>or EVPP 419 &amp; EVPP 420</td>
<td>Marine Mammal Biology and Conservation Field Course</td>
<td>2</td>
</tr>
<tr>
<td>EVPP 350</td>
<td>Freshwater Ecosystem</td>
<td></td>
</tr>
<tr>
<td>EVPP 419 &amp; EVPP 582</td>
<td>Marine Mammal Biology and Estuarine and Coastal Ecology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>EVPP 536</td>
<td>The Diversity of Fishes</td>
<td></td>
</tr>
<tr>
<td>EVPP 581 &amp; EVPP 582</td>
<td>Marine Mammal Biology and Estuarine and Coastal Ecology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>INTS 495</td>
<td>Field-Based Work (up to 4 credits of only marine or estuarine-oriented field courses)</td>
<td>9-12</td>
</tr>
</tbody>
</table>

Total Credits 9-12

1 Courses taken to satisfy the core requirements above cannot be repeated to count toward the additional courses requirement.

2 If chosen, students must take both the lecture and lab for a total of 4 credits.

Notes

RECR 161 Scuba Diving: Basic is strongly recommended, but is not required.

Paleontology Minor

Banner Code: PLEO

Dr. Stacey Verardo, Undergraduate Coordinator and Professor

3451 Exploratory Hall
Fairfax Campus

Phone: 703-993-1045
Email: sverardo@gmu.edu

Website: cos.gmu.edu/aoes/academics/undergraduate-programs/

Students interested in the evolution of life on Earth can take this minor in association with degrees from any field of study across the university. Fundamental courses include historical geology, invertebrate paleontology and vertebrate paleontology.

This has been designated a Green Leaf program (p. 107).

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).
Requirements

Minor Requirements
Total credits: 18-21

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 640) tab for specific policies related to this program.

Students must successfully complete the following coursework with a minimum GPA of 2.00.

Required Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 312</td>
<td>Invertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 334</td>
<td>Vertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>or BIOL 334</td>
<td>Vertebrate Paleontology</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

Electives

Many of the courses below have additional prerequisites beyond the required core courses above; please check the individual courses carefully.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 364</td>
<td>Marine Geology</td>
<td></td>
</tr>
<tr>
<td>GGS 321</td>
<td>Biogeography</td>
<td></td>
</tr>
<tr>
<td>or BIOL 374</td>
<td>Biogeography: Space, Time, and Life</td>
<td></td>
</tr>
<tr>
<td>BIOL 377</td>
<td>Applied Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 470</td>
<td>Dinosaur Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 471</td>
<td>Evolution</td>
<td></td>
</tr>
<tr>
<td>BIOL 468</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>6-9</td>
</tr>
</tbody>
</table>

Option One

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 310</td>
<td>Biodiversity</td>
<td>5</td>
</tr>
<tr>
<td>&amp; BIOL 330</td>
<td>and Biodiversity Lab and Recitation</td>
<td></td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 320</td>
<td>Comparative Chordate Anatomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 322</td>
<td>Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOL 323</td>
<td>and Lab for Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 331</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
<tr>
<td>BIOL 332</td>
<td>Insect Biology</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>4</td>
</tr>
</tbody>
</table>

Option Two

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 468</td>
<td>Vertebrate Natural History</td>
<td>4</td>
</tr>
</tbody>
</table>

Option Three

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 309</td>
<td>Introduction to Oceanography</td>
<td></td>
</tr>
<tr>
<td>EVPP 419</td>
<td>Marine Mammal Biology and Conservation</td>
<td>3</td>
</tr>
</tbody>
</table>

Option Four

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 305</td>
<td>Biology of Microorganisms</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 407</td>
<td>Microbial Diversity</td>
<td>4</td>
</tr>
</tbody>
</table>

Department of Biology

Larry Rockwood, Chair
Phone: 703-993-1050
Website: biology.gmu.edu

Administration

- Larry Rockwood, Chair
- Geraldine Grant, Assistant Chair
- Charles Madden, Assistant Chair
- Deborah Poyales, Director of Undergraduate Studies
- Anne Verhoeven, Director of Medical Laboratory Sciences

The faculty in the Department of Biology is known for teaching excellence. Drs. Madden, Kocache, Forkner, Tondi, and Rockwood have all received teaching awards within the past several years, the latest being a university award presented to Dr. Kocache in May of 2017. Biology is the largest program in the College of Science; there are more than 1,300 students in the major and the department grants degrees to almost 300 students per year. All Biology teaching laboratories and almost all faculty and staff offices are found in Exploratory Hall, a modern beautiful building. The department consists of 23 faculty and 7 staff and the Biology curriculum is further enriched by over 40 faculty members from other departments and schools. As a result, Biology offers a broad spectrum of coursework in the biological sciences to both biology majors and to students in other departments, schools, and colleges.

Undergraduate Programs

The bachelor's degree programs in biology provide a sound liberal arts education with substantial experience in quantitative and analytical thought, along with preparation for a related profession. In addition to ensuring the strong background necessary for graduate study in the many fields of biological science, the broad range of courses available at Mason allow students to develop careers in many areas, including secondary school teaching, environmental management, microbiology, molecular biology, biotechnology, genetics, and natural history. Alternatively, students may prepare for postgraduate studies in medicine, dentistry, veterinary medicine, wildlife management, fisheries biology, or marine science.

The department also offers the Medical Laboratory Science, BS (p. 656), please visit the program's catalog entry for details.
Additional information can be found at the Department of Biology's website (http://biology.gmu.edu) or by visiting the department in Exploratory Hall, Suite 1200.

**Graduate Programs**
The Biology, MS (p. 794) is offered by the School of Systems Biology (p. 786). The Department of Biology supports the concentration in Evolutionary Biology within the MS degree. Students interested in this concentration should consult the Department of Biology’s website (http://biology.gmu.edu) for a list of faculty and their research interests.

**Student Clubs**
A variety of biologically-oriented student clubs are available for students. Each club has its own website; for more information visit the Department of Biology’s website (http://biology.gmu.edu).

**Faculty**

### Department Faculty

#### Professors
Gillevet, Lawrey, Rockwood

#### Associate Professors
Birchard, Christensen, Edwards, Forkner, Grant, Weeks

#### Assistant Professors
Lim

#### Term Professors
Polayes, Kocache

#### Term Associate Professors
Laemmerzahl, Luther, Madden, Tondi, Verhoeven

#### Term Assistant Professors
Crerar, Davis, Fondufe, Masterson, Olmo, Scherer, Schwebach

#### Term Instructor
Tomson

#### Adjunct Faculty

#### Affiliate Faculty

#### Affiliated Faculty
Andalibi, Lee, Nix, Lewis, Freeman, Gilmore, Lessard-Pilon, McNeil, Deluycker, Lipsky, Perilla, Verardo, Fox

**Requirements & Policies**

### Requirements

#### Advising
All biology majors are strongly encouraged to see an academic advisor regularly to help in planning their schedule so that they can graduate on time. Biology majors should see an advisor for permission to register prior to their first semester, again after completing 60 credits, and lastly after completing 90 credits.

Medical Laboratory Science, BS (p. 656) majors must see the director of the medical laboratory science program to obtain permission to register each semester.

Students returning from suspension are required to meet with the director of undergraduate studies or designee prior to being allowed to register.

For more information on advising or to set up an appointment, visit the Department of Biology’s website (http://biology.gmu.edu).

### Residency Requirement for Transfer Students
Students majoring in biology are required to complete 16 credits in the major at the 300 and 400 levels at Mason in addition to meeting the university residency requirement of at least 30 credits at Mason.

### Policies

#### Policy on Using Biology Program Laboratories
Only authorized experiments and exercises may be carried out in any research or teaching laboratory and must be done under the supervision of a university faculty or staff member. No unauthorized work is allowed in any laboratory.

#### Policy on Using Organisms in Classes
Direct observations of actual organisms are considered an essential part of learning biology at all levels. Direct observations of organisms may involve the use of living or preserved specimens, dissections of organisms or parts of organisms, and microscopic examination of organisms or parts of organisms. All use of live animals conforms to National Institutes of Health guidelines for the use and care of laboratory animals. Activities specified above may be a required part of a course and thus serve as a basis for grading in the course. Any questions about the administration of this policy should be directed to the course coordinator or instructor.

#### Writing-Intensive Requirement
Mason requires all students to complete at least one course designated as “writing intensive” in their majors at the 300-level or above. Students majoring in biology fulfill this requirement by successfully completing BIOL 308 Foundations of Ecology and Evolution. Medical laboratory science majors fulfill the requirement by completing MLAB 300 Science Writing.

### Minor in Biology
Information about this minor can be found in the Biology Minor (p. 654)’s catalog entry.
Premedical, Predental, Prepharmacy, and Preveterinary Students
Web: prehealth.gmu.edu (http://prehealth.gmu.edu)

Many students planning to enter medical, dental, pharmacy, veterinary, optometry, or other health professional schools choose to pursue a major in biology. These students should consult the health professions advising web site on required coursework and overall preparation.

Teacher Licensure
Students who wish to become teachers should pursue either the Biology, BA (p. 643) or the Biology, BS (p. 648) in addition to obtaining teaching certificates through the College of Education and Human Development (p. 161). For more information, visit the Graduate School of Education’s website (https://gse.gmu.edu).

Biology for Non-majors
Students who are not majoring in science or mathematics and wish to fulfill their natural science requirement may enroll in the biology classes listed in the Mason Core Natural Science (p. 142) section. Chemistry, physics, and mathematics majors should consult with their faculty advisor to determine which biology courses to take.

Programs
- Biology Minor
- Biology, BA
- Biology, BS
- Career Changer’s Biological Sciences Undergraduate Certificate
- Medical Laboratory Science, BS

Biology, BA
Banner Code: SC-BA-BIOL

Academic Advising
1200 Exploratory Hall
Fairfax Campus
Website: biology.gmu.edu/academics/degree-programs/

The Biology, BA provides a sound liberal arts education with substantial experience in quantitative and analytical thought, along with preparation for related professions. The program provides the strong background necessary for not only for graduate study in the life sciences, but also enables students to develop careers in a wide variety of disciplines, including teaching, environmental management, microbiology, molecular biology, biotechnology, genetics, wildlife management, fisheries biology, and marine science. Furthermore, our curriculum prepares students for careers in the health sciences including medicine, dentistry, veterinary science, and related allied health disciplines.

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies
Students must fulfill all Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142). Students in this bachelor’s program must also complete the additional College Requirements for the BA Degree (see Requirements (p. 644)).

The writing intensive requirement is fulfilled by BIOL 308 Foundations of Ecology and Evolution. Transfer students who have transferred in BIOL 308 Foundations of Ecology and Evolution but did not meet the writing intensive requirement may take MLAB 300 Science Writing to meet the writing intensive requirement.

Important information and departmental policies are listed with the Department of Biology (p. 641).

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87).

Important Program Requirements
Students must complete the degree requirements with:

- A minimum GPA of 2.00 in the BIOL courses listed in the degree program
- A minimum GPA of 2.00 in the supporting courses listed in the degree program

Additionally:

- Students may apply no more than 4 credits of BIOL 103 Introductory Biology I (Mason Core) (p. 142) or BIOL 107 Intro Biology II Lecture (Mason Core) (p. 142) and BIOL 106 Introductory Biology II Laboratory (Mason Core) (p. 142) toward elective credit (or equivalent transfer credit at the 100 to 200-level) if taken before the successful completion of BIOL 213 Cell Structure and Function (Mason Core) (p. 142).
- Biology majors must earn a minimum grade of ‘C’ in all of the biology core courses. A grade of ‘C’ or better must be earned in BIOL 213 Cell Structure and Function (Mason Core) (p. 142) in order to advance to other core requirements.
- Students who take BIOL 213 Cell Structure and Function (Mason Core) (p. 142) once, but a second time only with permission of the Department of Biology (p. 641).
- Students may not count BIOL 124 Human Anatomy and Physiology and/or BIOL 125 Human Anatomy and Physiology toward any biology major requirement.
- Students who take BIOL 300 BioDiversity may not count BIOL 303 Animal Biology and/or BIOL 304 Plant Biology toward any biology major requirement.
- BIOL 308 Foundations of Ecology and Evolution meets the writing intensive requirement for this major. Transfer students who have transferred in BIOL 308 Foundations of Ecology and Evolution but did not meet the writing intensive requirement may take MLAB 300 Science Writing to meet the writing intensive requirement.
- BIOL 493 Honors Research in Biology, BIOL 495 Directed Studies in Biology, and BIOL 497 Special Problems in Biology do not satisfy the requirements of the BA degree which state that students must complete at least one upper division course that
includes a laboratory. The courses do, however, count as non-laboratory electives. The total limit for BIOL 493 Honors Research in Biology, BIOL 495 Directed Studies in Biology and BIOL 497 Special Problems in Biology combined is 3 credits toward 32 credits for the BA.

**Teacher Licensure**

Students majoring in biology who wish to pursue a career teaching secondary school may consider applying for the Curriculum and Instruction Undergraduate Certificate [p. 166] offered by the College of Education and Human Development [p. 161] as an option in seeking an initial Virginia teaching license.

Other routes to licensure include the Biology, BA or BS/Curriculum and Instruction, Accelerated MED [p. 183] (Secondary Education Biology Concentration) or select traditional Master’s programs. Please contact the undergraduate advisor in the College of Education and Human Development [p. 161] for more information.

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 643) tab for specific policies related to this program.

**Biology Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 300</td>
<td>BioDiversity</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution ¹</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

¹ Fulfills the writing intensive requirement.

Transfer students who have transferred in BIOL 308 Foundations of Ecology and Evolution but did not meet the writing intensive requirement may take MLAB 300 Science Writing to meet the writing intensive requirement.

**Biology Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete 11 credits of additional biology courses (p. 1327) ¹</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

¹ Of which, at least 6 credits must be upper division, and at least one of these upper division courses must include a laboratory.

**Chemistry**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211 &amp; CHEM 213</td>
<td>General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142) (Natural Science course)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Math**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142) (Quantitative Reasoning courses)</td>
<td>3-6</td>
</tr>
<tr>
<td>or MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 123 &amp; MATH 124</td>
<td>Calculus with Algebra/Trigonometry, Part A and Calculus with Algebra/Trigonometry, Part B (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3-6</td>
</tr>
</tbody>
</table>

**Computer Science**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142) ¹</td>
<td>3</td>
</tr>
<tr>
<td>Any course(s) that fulfills the Mason Core: Information Technology requirement (p. 143)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Recommended by the Department of Biology

**Natural Science**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6-8 credits from the following Mason Core: Natural Science courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASTR 103</td>
<td>Astronomy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ASTR 111</td>
<td>Introductory Astronomy: The Solar System (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ASTR 113</td>
<td>Introductory Astronomy: Stars, Galaxies, and the Universe (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 245</td>
<td>College Physics II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6-8</td>
</tr>
</tbody>
</table>
Note for Students Expecting to Enter Graduate or Professional School

Students expecting to enter graduate or professional school are strongly encouraged to complete:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113 &amp; MATH 114</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142) and Analytic Geometry and Calculus II</td>
<td>8</td>
</tr>
<tr>
<td>CHEM 313 &amp; CHEM 315</td>
<td>Organic Chemistry I and Organic Chemistry Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 314 &amp; CHEM 318</td>
<td>Organic Chemistry II and Organic Chemistry Lab II</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 243 &amp; PHYS 244</td>
<td>College Physics I (Mason Core) (p. 142) and College Physics I Lab (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 245 &amp; PHYS 246</td>
<td>College Physics II (Mason Core) (p. 142) and College Physics II Lab (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Mason Core and Elective Requirements

In order to meet a minimum of 120 credits, this degree requires an additional 63-68 credits, which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor's Degrees (p. 87) (refer to AP5.3.2), College Requirements for the BA Degree (outlined below), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Integration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>40</td>
</tr>
</tbody>
</table>

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2. Minimum 3 credits required.

College Requirements for the BA Degree

In addition to the program requirements and the Mason Core (p. 142) requirements, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill this college-level requirement may also be used simultaneously to satisfy other requirements such as Mason Core (p. 142) requirements, other college-level requirements, or requirements for the major. In some cases, the requirements listed below may be superseded by requirements of the degree program and the Mason Core (p. 142).

<table>
<thead>
<tr>
<th>Philosophy or Religious Studies</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Select 3 credits from the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHIL (p. 2044)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RELI (p. 2144)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

1. PHIL 323 Classical Western Political Theory and PHIL 324 Modern Western Political Theory may not be used to fulfill this requirement.

Social and Behavioral Sciences

Choose one approved Mason Core: Social and Behavioral Sciences (p. 150) course in addition to the Mason Core (p. 142)-required course for a total of 6 credits. The two courses used to fulfill the combined college-level and university requirements must be from different disciplines.

This requirement may be fulfilled by completing any course in ANTH (p. 1212), CRIM (p. 1514), ECON (p. 1564), GOVT (p. 1774), HIST (p. 1818), LING (p. 1896), PSYC (p. 2074), or SOCI (p. 2167), and the following GGS (p. 1732) courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
</tbody>
</table>
GGS 380    Geography of Virginia

Total Credits 3

1 HIST 100 History of Western Civilization (Mason Core) (p. 142) and
HIST 125 Introduction to World History (Mason Core) (p. 142) may not
be used to fulfill this requirement.

Natural Science
Choose one credit in addition to the Mason Core: Natural Science
(p. 148) requirement for a total of 8 credits. This combined college-level
and university requirement must be fulfilled by completing two of any
approved Mason Core: Natural Science (p. 148) courses that include a
laboratory experience1.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select an additional Mason Core Natural Science course</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

1 BIOL 124 Human Anatomy and Physiology and BIOL 125 Human
Anatomy and Physiology may not be used to fulfill this requirement.

Foreign Language
Intermediate-level proficiency in one foreign language is required1. This
requirement may be fulfilled by completing a course in a foreign
language numbered 202, 209, or 210 (or higher-level courses taught in the
language).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Select a foreign language course numbered 202, 209, 210, or
higher if a waiver isn't applicable | 0-3     |

1 Students may be eligible for a waiver of this requirement if they are
already proficient in a second language or if they have received a
satisfactory score on an approved proficiency test. Additional
information on waivers can be found via the college's Office of
Academic and Student Affairs (https://cos.gmu.edu/uaa).

Non-Western Culture
Choose one approved Non-Western Culture Requirement1 course in
addition to the course used to fulfill the Mason Core: Global
Understanding (p. 146) requirement. A course used to fulfill the Mason
Core: Global Understanding (p. 146) requirement may not be
simultaneously used to satisfy this college-level requirement. However,
a course used to fulfill this requirement may be used simultaneously to
fulfill any other requirements (Mason Core (p. 142) requirements, college-
level requirements, or requirements for the major).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Select 3 credits from approved Non-Western Culture courses
if a waiver isn't applicable: | 0-3     |

1 ANTH 114 Introduction to Cultural Anthropology
(Mason Core) (p. 142) 3

1 ANTH 300 Civilizations 3

1 ANTH 302 Peoples and Cultures of Latin America
(Mason Core) (p. 142) 3

1 ANTH 307 Ancient Mesoamerica (Mason Core) (p. 142) 3

1 ANTH 308 Peoples and Cultures of the Middle East
(Mason Core) (p. 142) 3

1 ANTH 309 Peoples and Cultures of India (Mason
Core) (p. 142) 3

1 ANTH 313 Myth, Magic, and Mind (Mason Core) (p. 142) 3

1 ANTH 314 Zombies 3

1 ANTH 330 Peoples and Cultures of Selected
Regions: Non-Western 3

1 ANTH 332 Cross-Cultural Perspectives on
Globalization (Mason Core) (p. 142) 3

1 ANTH 381 Medical Anthropology 3

1 ANTH 396 Issues in Anthropology: Social Sciences
(Mason Core) (p. 142) 3

1 ARAB 360 Topics in Arabic Cultural Production 3

1 ARAB 420 Survey of Arabic Literature 3

1 ARAB 440 Topics in Arabic Religious Thought and
Texts (Mason Core) (p. 142) 3

1 ARTH 203 Survey of Asian Art (Mason Core) (p. 142) 3

1 ARTH 204 Survey of Latin American Art (Mason
Core) (p. 142) 3

1 ARTH 206 Survey of African Art (Mason Core)
(p. 142) 3

1 ARTH 318 Art and Archaeology of Ancient Egypt 3

1 ARTH 319 Art and Archaeology of the Ancient Near
East (Mason Core) (p. 142) 3

1 ARTH 320 Art of the Islamic World (Mason Core)
(p. 142) 3

1 ARTH 382 Arts of India (Mason Core) (p. 142) 3

1 ARTH 383 Arts of Southeast Asia (Mason Core)
(p. 142) 3

1 ARTH 384 Arts of China (Mason Core) (p. 142) 3

1 ARTH 385 Arts of Japan (Mason Core) (p. 142) 3

1 ARTH 386 The Silk Road (Mason Core) (p. 142) 3

1 ARTH 482 RS: Advanced Studies in Asian Art 3

1 CHIN 318 Introduction to Classical Chinese (Mason
Core) (p. 142) 3

1 CHIN 320 Contemporary Chinese Film 3

1 CHIN 325 Major Chinese Writers (Mason Core)
(p. 142) 3

1 DANC 118 World Dance (Mason Core) (p. 142) 3

1 ECON 361 Economic Development of Latin America
(Mason Core) (p. 142) 3

1 ECON 362 African Economic Development (Mason
Core) (p. 142) 3

1 FREN 451 Topics in Sub-Saharan Francophone
Literature and Culture 3

1 FREN 454 Topics in Caribbean Francophone
Literature and Culture 3

1 GGS 101 Major World Regions (Mason Core) (p. 142) 3

1 GGS 316 Geography of Latin America 3

1 GGS 325 Geography of North Africa and the Middle
East 3

1 GGS 330 Geography of the Soviet Succession
States 3

1 GGS 399 Select Topics in GGS 3

1 GOVT 328 Global Political Theory 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
</tr>
<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 261</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 262</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 326</td>
<td>Stalinism</td>
<td>3</td>
</tr>
<tr>
<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
<td>3</td>
</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 364</td>
<td>Revolution and Radical Politics in Latin America (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 365</td>
<td>Conquest and Colonization in Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 366</td>
<td>Comparative Slavery</td>
<td>3</td>
</tr>
<tr>
<td>HIST 367</td>
<td>History, Fiction, and Film in Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>HIST 426</td>
<td>The Russian Revolution</td>
<td>3</td>
</tr>
<tr>
<td>HIST 460</td>
<td>Modern Iran (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 461</td>
<td>Arab-Israeli Conflict</td>
<td>3</td>
</tr>
<tr>
<td>HIST 462</td>
<td>Women in Islamic Society (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 465</td>
<td>The Middle East in the 20th Century</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 310</td>
<td>Japanese Culture in a Global World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>JAPA 340</td>
<td>Topics in Japanese Literature (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>KORE 320</td>
<td>Korean Popular Culture in a Global World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 211</td>
<td>Religions of the West (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 212</td>
<td>Religions of Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 240</td>
<td>Death and the Afterlife in World Religions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 272</td>
<td>Islam</td>
<td>3</td>
</tr>
<tr>
<td>RELI 313</td>
<td>Hinduism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 314</td>
<td>Chinese Philosophies and Religious Traditions</td>
<td>3</td>
</tr>
<tr>
<td>RELI 315</td>
<td>Buddhism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 337</td>
<td>Mysticism: East and West</td>
<td>3</td>
</tr>
<tr>
<td>RELI 365</td>
<td>Muhammad: Life and Legacy</td>
<td>3</td>
</tr>
<tr>
<td>RELI 374</td>
<td>Islamic Thought (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RELI 375</td>
<td>Qur'an and Hadith</td>
<td>3</td>
</tr>
<tr>
<td>RELI 379</td>
<td>Islamic Law, Society, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RELI 387</td>
<td>Islam, Democracy, and Human Rights</td>
<td>3</td>
</tr>
<tr>
<td>RELI 490</td>
<td>Comparative Study of Religions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 353</td>
<td>Russian Civilization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 354</td>
<td>Contemporary Post-Soviet Life (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Students who can document attendance at a native school in a non-western country for at least four years may request a waiver from this requirement through the CHSS Undergraduate Academic Affairs Office (http://chssundergrad.gmu.edu).

**Honors**

### Honors in the Major

**Admissions**

Minimum requirements for invitation:

- GPA in biology courses must be 3.33 or better
- GPA in supporting requirements (math and other science) must be 3.00 or better
- Grade of ‘B’ or better in BIOL 213 Cell Structure and Function (Mason Core) (p. 142)

Students should apply for admission to the Honors Program during their first or second year at the university. Contact the Department of Biology (p. 641) for information on applying.

### Retention Requirements

Students in honors biology must maintain a biology GPA of 3.33 or better and a supporting GPA of 3.00 or better from the time they have accumulated 30 hours and thereafter. Students who fall below this standard will be given a one semester probationary period in which to bring their GPA back up to the minimum standard.

### Requirements to Graduate with Biology Honors

Students are required to take 6 to 8 credits in honors courses in BIOL including three semesters of BIOL 494 Honors Seminar in Biology or two semesters of BIOL 494 Honors Seminar in Biology and one semester of BIOL 493 Honors Research in Biology. BIOL 498 Research
Seminar may count toward one of the semester requirements of BIOL 494 Honors Seminar in Biology. The GPA requirements are as follows:

- Minimum 3.33 GPA in honors biology courses
- Minimum 3.33 GPA in biology requirements
- Minimum 3.00 GPA in supporting requirements
- Minimum 3.00 GPA overall

**Accelerated Master's**

**Biology, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Biology concentration)**

**Overview**

Highly-qualified undergraduates may be admitted to the bachelor's/accelerated master's program and obtain a BA (p. 643) or BS in Biology (p. 648) (degree without concentration) and an MEd in Curriculum and Instruction (concentration in secondary education biology) (p. 170) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor's/Accelerated Master's Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Biology Undergraduate Program (p. 641) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master's program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

**Accelerated Option Requirements**

Students must complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits 12</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While undergraduate students, accelerated master's students are able to apply two of the courses listed above to both the bachelor's and master's degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor's/Accelerated Master's Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

**Biology, BS**

Banner Code: SC-BS-BIOL

**Academic Advising**

1200 Exploratory Hall
Fairfax Campus

Website: biology.gmu.edu/academics/degree-programs/

The Biology, BS provides a sound liberal arts education with substantial experience in quantitative and analytical thought, along with preparation for related professions. The program provides the strong background necessary for not only for graduate study in the life sciences, but also enables students to develop careers in a wide variety of disciplines, including teaching, environmental management, microbiology, molecular biology, biotechnology, genetics, wildlife management, fisheries biology, and marine science. Furthermore, our curriculum prepares students for careers in the health sciences including medicine, dentistry, veterinary science, and related allied health disciplines.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in Undergraduate Admissions Policies (p. 65).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

Students must fulfill all Requirements for Bachelor's Degrees (p. 89), including the Mason Core (p. 142).

Important information and departmental policies are listed in the Department of Biology (p. 641).

BIOL 308 Foundations of Ecology and Evolution meets the writing intensive requirement for this major. Transfer students who have transferred in BIOL 308 Foundations of Ecology and Evolution but did not meet the writing intensive requirement may take MLAB 300 Science Writing to meet the writing intensive requirement.

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

**Important Program Requirements**

- Students may apply no more than 8 credits of BIOL 103 Introductory Biology I (Mason Core) (p. 142) or BIOL 107 Intro Biology II Lecture (Mason Core) (p. 142) and BIOL 106 Introductory Biology II Laboratory (Mason Core) (p. 142) toward elective credit (or equivalent transfer credit at the 100 to 200-level) if taken before successful completion of BIOL 213 Cell Structure and Function (Mason Core) (p. 142).
- Biology majors must earn a minimum grade of 'C' in all biology core courses. A grade of 'C' or better must be earned in BIOL 213 Cell
Structure and Function (Mason Core) (p. 142) in order to advance to other core requirements.

- Students may repeat BIOL 213 Cell Structure and Function (Mason Core) (p. 142) once, but a second time only with permission from the Department of Biology.
- Students may **not** count BIOL 124 Human Anatomy and Physiology and/or BIOL 125 Human Anatomy and Physiology toward any biology major requirement.
- Students who take BIOL 300 BioDiversity may **not** count BIOL 303 Animal Biology and/or BIOL 304 Plant Biology toward any biology major requirement.
- 44 credits must be in biology coursework.
- BIOL 493 Honors Research in Biology, BIOL 495 Directed Studies in Biology, and BIOL 497 Special Problems in Biology do not satisfy the requirements of the BS degree which state that students must complete at least two upper division courses that include a laboratory. The courses do, however, count as non-laboratory electives. The total limit for BIOL 493 Honors Research in Biology, BIOL 495 Directed Studies in Biology, and BIOL 497 Special Problems in Biology combined is 6 credits toward the 44 credits required for the BS.

Several optional concentrations are available; details on each can be found in the Requirements tab.

**Teacher Licensure**

Students majoring in biology who wish to pursue a career teaching secondary school may consider applying for the Curriculum and Instruction Undergraduate Certificate (p. 166) offered by the College of Education and Human Development (p. 161) as an option in seeking an initial Virginia teaching license.

Other routes to licensure include the Biology, BA or BS/Curriculum and Instruction, Accelerated MEd (p. 183) (Secondary Education Biology Concentration) or select traditional Master’s programs. Please contact the College of Education and Human Development (p. 161) for more information.

### Requirements

#### Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 648) tab for specific policies related to this program.

Students must complete their biology coursework and the supporting requirements which follow with a minimum GPA of 2.00.

All students must complete the Core Courses listed below. Students then elect to complete the BS degree either with a concentration or without a concentration.

#### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 300</td>
<td>BioDiversity</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution ¹</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
</tbody>
</table>

**Chemistry**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 215</td>
<td>General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>5</td>
</tr>
</tbody>
</table>

**Physics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; PHYS 161</td>
<td>University Physics I Laboratory</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; PHYS 244</td>
<td>College Physics I Lab (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 245</td>
<td>College Physics II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; PHYS 246</td>
<td>College Physics II Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Mathematics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
<td>3-6</td>
</tr>
<tr>
<td>or MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Calculus with Algebra/Trigonometry, Part A (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>&amp; MATH 124</td>
<td>Calculus with Algebra/Trigonometry, Part B (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Computer Science**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>2</td>
</tr>
</tbody>
</table>

Any course(s) that fulfills the Mason Core: Information Technology requirement (p. 143)

| Total Credits | 48-51 |

¹ Fulfills writing intensive requirement. Transfer students who have transferred in BIOL 308 Foundations of Ecology and Evolution but did not meet the writing intensive requirement may take MLAB 300 Science Writing to meet the writing intensive requirement.

² Recommended by the Department of Biology.
BS without Concentration

Students who do not select an optional concentration must complete the biology core and shared courses shown above in addition to the curriculum requirements listed below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology Electives</td>
<td>Complete 23 credits of additional biology courses (p. 1327)</td>
<td>23</td>
</tr>
</tbody>
</table>

Additional Science Courses

Students are encouraged to consult with a biology faculty advisor to determine which option (A, B, or C) best meets their career goals. Select one from the following options:

Option A:
- CHEM 314 Organic Chemistry II
- CHEM 318 Organic Chemistry Lab II

Option B:
- One 3 credit chemistry course at the 300 or 400-level (not CHEM 314) (p. 1367)

Option C:
- GEOL 101 Introductory Geology I (Mason Core) (p. 142)
- GEOL 102 Introductory Geology II (Mason Core) (p. 142) (Natural Science courses)

Total Credits: 26-31

Note:
Students expecting to enter a professional school are strongly encouraged to complete MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142).

Concentration in Bioinformatics (BNF)

The highly interdisciplinary field of bioinformatics has emerged as a powerful modern science. There is a great demand for undergraduate and graduate-level trained individuals with a background in bioinformatics in industry as well as in academia.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Please note: CDS 130 is recommended to fulfill the Computer Science requirement in the shared core above.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDS 230</td>
<td>Modeling and Simulation I</td>
<td></td>
</tr>
</tbody>
</table>

Bioinformatics

- BINF 401 Bioinformatics and Computational Biology I
- BINF 402 Bioinformatics and Computational Biology II

Biology

- BIOL 312 Biostatistics for Bioinformatics
- BIOL 401 Phage Discovery
- BIOL 412 Phage Genomics

Biology Lab Elective

Select one from the following:
- BIOL 320 Comparative Chordate Anatomy

- BIOL 322 Developmental Biology
- BIOL 323 and Lab for Developmental Biology
- BIOL 331 Invertebrate Zoology
- BIOL 332 Insect Biology
- BIOL 334 Vertebrate Paleontology
- BIOL 336 Vertebrate Paleontology
- BIOL 344 Plant Diversity and Evolution
- BIOL 345 Plant Ecology
- BIOL 350 Freshwater Ecosystems
- BIOL 355 Ecological Engineering and Ecosystem Restoration
- BIOL 379 RS: Ecological Sustainability (Mason Core) (p. 142)
- BIOL 385 Biotechnology and Genetic Engineering and Molecular Biology and Biotechnology Laboratory
- BIOL 405 Microbial Genetics
- BIOL 407 Microbial Diversity
- BIOL 430 Advanced Human Anatomy and Physiology I
- BIOL 431 Advanced Human Anatomy and Physiology II
- BIOL 437 Ornithology
- BIOL 438 Mammalogy
- BIOL 439 Herpetology
- BIOL 452 Immunology
- BIOL 453 and Immunology Laboratory
- BIOL 454 Marine Mammal Biology and Conservation
- & BIOL 455 Marine Mammal Biology and Conservation Field Course
- BIOL 465 Histology
- BIOL 468 Vertebrate Natural History
- BIOL 472 Introductory Animal Behavior
- & BIOL 473 and Introductory Laboratory in Animal Behavior
- BIOL 484 Cell Signaling and Disease
- & BIOL 485 and Cell Signaling Laboratory
- BIOL 509 DNA Analysis of Biological Evidence
- & BIOL 510 and Forensic DNA Analysis Laboratory
- BIOL 543 Tropical Ecosystems
- or BIOL 305 Biology of Microorganisms
- & BIOL 306 and Biology of Microorganisms Laboratory

Additional Science Courses

Select one from the following options: 3-8

Option A:
- CHEM 314 Organic Chemistry II
- CHEM 318 Organic Chemistry Lab II

Option B:
- One 3 credit chemistry course at the 300 or 400-level (p. 1367)

Option C:
- GEOL 101 Introductory Geology I (Mason Core) (p. 142)
Concentration in Biopsychology (BP)

The biopsychology concentration consists of a selection of courses designed to address the needs and interest of students who wish to study biology in more depth while simultaneously exploring psychology and neurobiology. This concentration will help prepare students for the MCAT section related to psychology and provide veterinary students with a background in animal learning/behavior.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 430</td>
<td>Advanced Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 431</td>
<td>Advanced Human Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 372</td>
<td>Biopsychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 373</td>
<td>Biopsychology Laboratory</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional Psychology/Neuroscience Course

Select 3-4 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
</tr>
<tr>
<td>PSYC 376</td>
<td>Brain and Behavior</td>
</tr>
<tr>
<td>PSYC 406</td>
<td>Psychology of Communication (Mason Core)</td>
</tr>
<tr>
<td>NEUR 327</td>
<td>Cellular, Neurophysiological, and Pharmacological Neuroscience</td>
</tr>
<tr>
<td>NEUR 335</td>
<td>Molecular, Developmental, and Systems Neuroscience</td>
</tr>
</tbody>
</table>

Additional Biology Courses

Select 7-8 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 305</td>
<td>Biology of Microorganisms</td>
</tr>
<tr>
<td>BIOL 306</td>
<td>Biology of Microorganisms Laboratory</td>
</tr>
<tr>
<td>BIOL 314</td>
<td>Introduction to Research Design and Analysis</td>
</tr>
<tr>
<td>BIOL 322</td>
<td>Developmental Biology</td>
</tr>
<tr>
<td>BIOL 323</td>
<td>Lab for Developmental Biology</td>
</tr>
<tr>
<td>BIOL 437</td>
<td>Ornithology</td>
</tr>
<tr>
<td>BIOL 438</td>
<td>Mammalogy</td>
</tr>
<tr>
<td>BIOL 472</td>
<td>Introductory Animal Behavior</td>
</tr>
<tr>
<td>BIOL 473</td>
<td>Introductory Laboratory in Animal Behavior</td>
</tr>
<tr>
<td>BIOL 483</td>
<td>General Biochemistry</td>
</tr>
</tbody>
</table>

Additional Chemistry Courses

Select one from the following options:

Option A: CHEM 314 Organic Chemistry II & CHEM 318 Organic Chemistry Lab II

Option B: CHEM 314 Organic Chemistry II

Total Credits 26-30

1 Students are encouraged to consult with a biology advisor to determine which option (A, B, or C) best meets their career goals.
2 CHEM 314 Organic Chemistry II alone does not fulfill this requirement.

Concentration in Biotechnology and Molecular Biology (BTMB)

The biotechnology and molecular biology concentration consists of a selection of courses that provide essential skills to students who seek employment in the field or wish to include an applied component in their undergraduate training in biology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 305</td>
<td>Biology of Microorganisms</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 306</td>
<td>Biology of Microorganisms Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 385</td>
<td>Biotechnology and Genetic Engineering</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 483</td>
<td>General Biochemistry</td>
<td>4</td>
</tr>
</tbody>
</table>

Additional Biology Courses

Select 12 credits from the following, at least one of the courses must include a laboratory.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 402</td>
<td>Applied and Industrial Microbiology</td>
</tr>
<tr>
<td>BIOL 403</td>
<td>and Techniques in Applied and Industrial Microbiology</td>
</tr>
<tr>
<td>BIOL 405</td>
<td>Microbial Genetics</td>
</tr>
<tr>
<td>BIOL 452</td>
<td>Immunology</td>
</tr>
<tr>
<td>BIOL 453</td>
<td>and Immunology Laboratory</td>
</tr>
<tr>
<td>BIOL 465</td>
<td>Histology</td>
</tr>
<tr>
<td>BIOL 486</td>
<td>Molecular Biology and Biotechnology Laboratory</td>
</tr>
</tbody>
</table>

Non-laboratory Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 314</td>
<td>Introduction to Research Design and Analysis</td>
</tr>
<tr>
<td>BIOL 382</td>
<td>Introduction to Virology</td>
</tr>
<tr>
<td>BIOL 401</td>
<td>Phage Discovery</td>
</tr>
<tr>
<td>BIOL 411</td>
<td>Advanced General Genetics</td>
</tr>
<tr>
<td>BIOL 412</td>
<td>Phage Genomics</td>
</tr>
<tr>
<td>BIOL 417</td>
<td>Selected Topics in Molecular and Cellular Biology</td>
</tr>
<tr>
<td>BIOL 418</td>
<td>Current Topics in Microbiology</td>
</tr>
<tr>
<td>BIOL 420</td>
<td>Vaccines</td>
</tr>
<tr>
<td>BIOL 421</td>
<td>Genetics of Human Diseases</td>
</tr>
<tr>
<td>BIOL 422</td>
<td>Stem Cell Biology and Regenerative Medicine</td>
</tr>
<tr>
<td>BIOL 482</td>
<td>Introduction to Molecular Genetics</td>
</tr>
<tr>
<td>BIOL 484</td>
<td>Cell Signaling and Disease</td>
</tr>
<tr>
<td>BIOL 497</td>
<td>Special Problems in Biology</td>
</tr>
</tbody>
</table>

Additional Chemistry Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 26-30

1 Students are encouraged to consult with a biology faculty advisor to determine which option best meets their career goals.
2 CHEM 314 Organic Chemistry II alone does not fulfill this requirement.
CHEM 318 Organic Chemistry Lab II 2

Total Credits 28

1 Registration for BIOL 417 Selected Topics in Molecular and Cellular Biology, BIOL 418 Current Topics in Microbiology, or BIOL 497 Special Problems in Biology is subject to approval by the Director of Undergraduate Studies and the Chair of the Department of Biology.

Concentration in Environmental and Conservation Biology (ESCB)

This concentration is offered to students seeking a biology degree that focuses on ecology and organismal biology and prepares them for graduate work or employment in environmental and conservation fields, such as natural resources management, fisheries, forestry, water quality management, aquatic and wetland ecology, and conservation biology. The concentration is staffed and supported by the Department of Environmental Science and Policy (p. 687).

Code Title Credits
Environmental and Conservation Biology
BIOL 318 Conservation Biology 3
BIOL 377 Applied Ecology 3

Biology Electives
Select 17 credits from the following: 1
BIOL 309 Introduction to Oceanography
BIOL 314 Introduction to Research Design and Analysis
BIOL 326 Animal Physiology
BIOL 331 Invertebrate Zoology
BIOL 332 Insect Biology
BIOL 344 Plant Diversity and Evolution
BIOL 345 Plant Ecology
BIOL 350 Freshwater Ecosystems
BIOL 355 Ecological Engineering and Ecosystem Restoration
BIOL 378 Applied Ecology Laboratory
BIOL 379 RS: Ecological Sustainability (Mason Core) (p. 142)
BIOL 437 Ornithology
BIOL 438 Mammalogy
BIOL 439 Herpetology
BIOL 440 Field Biology
BIOL 446 Ecological and Evolutionary Physiology
BIOL 449 Marine Ecology
BIOL 450 Marine Conservation
BIOL 454 Marine Mammal Biology and Conservation
BIOL 455 Marine Mammal Biology and Conservation Field Course
BIOL 457 Reproductive Strategies
BIOL 459 Fungi and Ecosystems
BIOL 468 Vertebrate Natural History
BIOL 472 Introductory Animal Behavior & BIOL 473 and Introductory Laboratory in Animal Behavior
BIOL 480 The Diversity of Fishes

Total Credits 26-31

1 Of which, two courses must be selected from the list above and must have either: 2 laboratory courses or 1 laboratory course and 1 field course (consult with an advisor for guidance).
2 Students are encouraged to consult with a biology faculty advisor to determine which option best meets their career goals.
3 CHEM 314 Organic Chemistry II alone does not fulfill this requirement.
4 Registration in BIOL 497 Special Problems in Biology is subject to approval by the Director of Undergraduate Studies and the Chairman of the Department of Biology.

Concentration in Microbiology (MIB)

This concentration offers lecture and laboratory courses in microbiology to prepare students for employment or advanced study in microbial genetics, physiology, diversity, and related fields.

Code Title Credits
Microbiology Courses
BIOL 305 Biology of Microorganisms 3
BIOL 306 Biology of Microorganisms Laboratory 1
BIOL 405 Microbial Genetics 4
BIOL 407 Microbial Diversity 4

Biology Electives
Select 11 credits from the following: 1
BIOL 314 Introduction to Research Design and Analysis
BIOL 382 Introduction to Virology
BIOL 385 Biotechnology and Genetic Engineering
BIOL 401 Phage Discovery
BIOL 402 Applied and Industrial Microbiology
BIOL 403 Techniques in Applied and Industrial Microbiology
BIOL 404 Medical Microbiology
BIOL 412 Phage Genomics
BIOL 418 Current Topics in Microbiology
BIOL 420 Vaccines
BIOL 452 Immunology
BIOL 453 Immunology Laboratory
BIOL 459 Fungi and Ecosystems
BIOL 483 General Biochemistry

Additional Science Courses
Select one from the following options: 2

Option A:
CHEM 314 Organic Chemistry II & CHEM 318 Organic Chemistry Lab II

Option B:
One chemistry course at the 300 or 400-level (p. 1367)

Option C:
GEOL 101 Introductory Geology I (Mason Core) (p. 142) & GEOL 102 Introductory Geology II (Mason Core) (p. 142)

Total Credits 3-8
Additional Chemistry Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Organic Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>28</strong></td>
</tr>
</tbody>
</table>

**Mason Core and Elective Credits**

In order to meet a minimum of 120 credits, this degree requires additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees, and electives. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- • Without concentration: 38-46 credits
- • BNF concentration: 36-46 credits
- • BP concentration: 39-46 credits
- • BTMB concentration: 41-44 credits
- • ESCB concentration: 38-46 credits
- • MIB concentration: 41-44 credits

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult with their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
<td></td>
</tr>
<tr>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Exploration Requirements</strong></td>
<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Integration Requirements</strong></td>
<td></td>
</tr>
<tr>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>40</strong></td>
<td></td>
</tr>
</tbody>
</table>

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.

**Honors in the Major**

**Admissions**

Minimum requirements for invitation:

- • GPA in biology courses must be 3.33 or better
- • GPA in supporting requirements (math and other science) must be 3.00 or better
- • Grade of ‘B’ or better in BIOL 213 Cell Structure and Function (Mason Core) (p. 142)

Students should apply for admission to the Honors Program during their first or second year at the university. Contact the Department of Biology (p. 641) for information on applying.

**Retention Requirements**

Students in honors biology must maintain a biology GPA of 3.33 or better and a supporting GPA of 3.00 or better from the time they have accumulated 30 hours and thereafter. Students who fall below this standard will be given a one semester probationary period in which to bring their GPA back up to the minimum standard.

**Requirements to Graduate with Biology Honors**

Students are required to take 6 to 8 credits in honors courses in BIOL including three semesters of BIOL 494 Honors Seminar in Biology or two semesters of BIOL 494 Honors Seminar in Biology and one semester of BIOL 493 Honors Research in Biology. BIOL 498 Research Seminar may count towards one of the semester requirements of BIOL 494 Honors Seminar in Biology. The GPA requirements are as follows:

- • Minimum 3.33 GPA in honors biology courses
- • Minimum 3.33 GPA in biology requirements
- • Minimum 3.00 GPA in supporting requirements
- • Minimum 3.00 GPA overall

**Accelerated Master’s**

**Biology, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Biology concentration)**

**Overview**

Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s program and obtain a BA (p. 643) or BS in Biology (p. 648) (degree without concentration) and an MEd in Curriculum and Instruction (concentration in secondary education biology) (p. 170) in an accelerated time-frame after satisfactory completion of 149 credits. See AP6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Biology Undergraduate Program (p. 641) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program,
see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

**Accelerated Option Requirements**

Students must complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

While undergraduate students, accelerated master's students are able to apply two of the courses listed above to both the bachelor's and master's degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor's/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

**Biology, BS/Biology, Accelerated MS**

**Overview**

Qualified undergraduates may be admitted into an accelerated master’s program and obtain both a Biology, BS (p. 648) and a Biology, MS (p. 794) within an accelerated time frame. Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of graduate work may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master’s program and must then complete an additional 24 credits to receive the master’s degree. All other master’s degree requirements must be met, including a minimum of 18 credits taken for the master’s after the bachelor’s degree is complete.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Application information for this accelerated master’s program can be found on the School of Systems Biology’s website (https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters).

Successful applicants will have an overall undergraduate GPA of at least 3.10. Additionally, they will have completed the following courses with a GPA of 3.00 or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 310</td>
<td>Biodiversity</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
</tbody>
</table>

Three letters of recommendation, including one from a prospective thesis or project advisor, are required.

**Accelerated Option Requirements**

At the beginning of the student’s final undergraduate semester, students must submit a bachelor’s/accelerated master’s transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science’s Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master’s program in the semester immediately following conferral of the bachelor’s degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals.

After completing 120 credits and all requirements for the bachelor’s degree and filing the Graduation Intent Form, students are awarded a bachelor’s degree. Accelerated master’s students must then submit scores on the GRE to have the provisional qualifier removed. Ordinarily, students should receive a minimum combined score of 303 on the verbal and quantitative portions of the general test.

**Reserve Graduate Credit**

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

**Biology Minor**

**Banner Code:** BIOL

**Academic Advising**

1200 Exploratory Hall
Fairfax Campus

Website: biology.gmu.edu/academics/degree-programs/

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Candidates for the minor in biology must complete required coursework with a minimum GPA of 2.00 or better and must earn a grade of ‘C’ or better in BIOL 213 Cell Structure and Function (Mason Core) (p. 142).
Requirements

Minor Requirements

Total credits: 19-21

Students should refer to the Admissions & Policies (p. 655) tab for specific policies related to this program.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>3-5</td>
</tr>
<tr>
<td>or BIOL 310</td>
<td>Biodiversity</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
<tr>
<td>Elective courses in biology to achieve at least 19 credits (one of which may be lower-level)</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 19-21

Career Changer’s Biological Sciences Undergraduate Certificate

Banner Code: SC-CERB-CCBS

Academic Advising

1200 Exploratory Hall
Fairfax Campus

Website: biology.gmu.edu/academics/degree-programs/

Post-baccalaureate students are invited to enroll in this unique certificate opportunity. By completing this certificate, students will be qualified to apply for most graduate programs in the biological sciences including medical, dental, optometry, podiatry, pharmacy, and veterinary schools. However, undergraduate coursework requirements for admission into graduate and professional schools can vary; it is prudent to check the coursework requirements for each individual school.

This certificate may be pursued on a part-time or full-time basis.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Additionally, admission into this certificate requires:

• The desire to pursue a career in biological sciences or the health professions (research, medicine, dentistry, teaching, law, etc.)
• A conferred bachelor’s degree from a regionally accredited institution with a GPA of 3.00 or higher

• A completed George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now) along with a the appropriate application fee
• Two sets of official transcripts from each institution attended

Standardized test scores are not required.

Policies

For policies governing all undergraduate programs, see AP .5 Undergraduate Policies (p. 87).

Some courses can be waived if previously taken during undergraduate training. Substitutions will be recommended where appropriate.

Certificate Fees

In addition to tuition and the usual laboratory and College of Science (p. 613) fees, a fee of $500 per semester will be assessed to defray the costs of the outside speakers and the additional administrative work associated with this certificate.

Notes

• Each student must see an advisor in the Department of Biology (p. 641) prior to registration each semester.
• The program will normally take four semesters to complete for a full-time student.
• It is recommended that students interested in healthcare professions do the following:
  • Register for the HEALTHPROFESSIONSADVISOR listserv (http://prehealth.gmu.edu/listserv);
  • Attend at least one group advising session conducted by the Health Professions Advisor (http://prehealth.gmu.edu); and
  • Consider participating in Health Professions Advising (http://prehealth.gmu.edu) activities designed for students in a relevant application cycle

Requirements

Certificate Requirements

Total credits: 63-64

This certificate may be pursued on a full-or part-time basis.

Students should refer to the Admissions & Policies (p. 655) tab for specific policies related to this program.

To earn this certificate, a student must pass all of the courses listed below with a grade no lower than ‘B’ and achieve a GPA of at least 3.40.

Cell Biology, Biostatistics, and Genetics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 12
**Additional Upper-level Biology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three additional 300, 400, or 500-level BIOL courses</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>(with the exception of BIOL 310) in consultation with an academic advisor. (p. 1327)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

**General Chemistry**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211 &amp; CHEM 213</td>
<td>General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212 &amp; CHEM 214</td>
<td>General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

**Organic Chemistry and Biochemistry**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 483</td>
<td>General Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 313 &amp; CHEM 315</td>
<td>Organic Chemistry I and Organic Chemistry Lab I (Mason Core) (p. 142)</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 314 &amp; CHEM 318</td>
<td>Organic Chemistry II and Organic Chemistry Lab II (Mason Core) (p. 142)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**Physics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 243 &amp; PHYS 244</td>
<td>College Physics I (Mason Core) (p. 142) and College Physics I Lab (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 245 &amp; PHYS 246</td>
<td>College Physics II (Mason Core) (p. 142) and College Physics II Lab (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

**Psychology and Sociology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 6 credits of psychology and/or sociology courses in consultation with the biology advisor.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
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</tbody>
</table>

**Mathematics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 111 or MATH 113</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142) and Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3-4</strong></td>
</tr>
</tbody>
</table>

1 Calculus is recommended, but not required.

**Career Seminars**

These seminars will be organized each semester and will feature outside speakers from a wide variety of biologically-oriented professions.

**Medical Laboratory Science, BS**

**Banner Code: SC-BS-MLAB**

**Academic Advising**

<table>
<thead>
<tr>
<th>Address</th>
<th>Website: biology.gmu.edu/academics/degree-programs/</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200 Exploratory Hall</td>
<td>Fairfax Campus</td>
</tr>
</tbody>
</table>

The BS in Medical Laboratory Science prepares students for careers in hospitals and clinics as well as in biotechnology and industrial laboratories. Medical Laboratory Science (MLS) is a profession of highly knowledgeable and skilled individuals who perform clinical laboratory tests on blood, other body fluids, or tissue samples. This is a critical part of health care, as the results obtained by these laboratory tests are vital tools for physicians in the diagnosis, treatment, and prevention of disease.

People trained as medical laboratory scientists may work in a variety of settings. Many work in clinical laboratories in large medical centers, hospitals, or clinics. Some do research in industrial, public health, or medical laboratories. Others teach in hospitals, colleges, or universities. An MLS may practice as a generalist, using knowledge in several of the scientific disciplines, or may specialize in one scientific area in larger hospitals. A successful MLS is an individual who enjoys studying the biological, chemical, and physical sciences. He or she may also find personal satisfaction and intellectual reward in applying scientific methods to the diagnosis and evaluation of disease.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

Students must fulfill all Requirements for Bachelor’s Degrees (p. 87) including the Mason Core (p. 142)\(^1\).

MLAB 300 Science Writing fulfills this major’s writing intensive requirement.

Important information and departmental policies are available with the Department of Biology (p. 642).

This program requires the equivalent of three years of full-time pre-professional study at the college level preceding a senior year of professional education in an affiliated program of medical laboratory science. Affiliated schools (see below) are accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) (http://www.naacls.org/Home.aspx). Quest Diagnostics (http://
www.questdiagnostics.com/home.html) in Chantilly, Virginia also provides professional education for this program.

1 Note: Because of the extensive pre-professional education requirements stipulated by NAACLS, students majoring in medical laboratory science are exempt from the Mason Core ’Arts’ requirement.

**Important Program Requirements**

- Students must complete MLAB 200 Introduction to Medical Laboratory Science and present their biology coursework and supporting requirements with a minimum GPA of 2.00.
- A grade of 'C' or better must be earned in BIOL 213 Cell Structure and Function (Mason Core) (p. 142) in order to advance to other major requirements. Students may repeat BIOL 213 Cell Structure and Function (Mason Core) (p. 142) once and a second time only with permission of the Department of Biology.
- Medical laboratory science majors must earn a minimum of 'C' in all biology core courses.

**Major in Medical Laboratory Science as a Second Bachelor's Degree**

While the standard program for medical laboratory sciences is three years on campus followed by a fourth year at a clinical affiliate (3+1), many students elect to complete a bachelor's degree before entering the clinical program (4+1). Students who have completed the Biology, BS (p. 648) or Chemistry, BS (p. 667) at Mason and then undertake a fifth year at a clinical affiliate may be eligible for a second bachelor's degree with a major in medical laboratory science. Students wishing to receive the second degree must apply before entering their fifth year. For further information, contact a laboratory sciences advisor.

**Applying to Medical Laboratory Sciences Schools**

Responsibility for applying to schools of medical laboratory sciences and gaining admission rests with the student; however, guidance is provided by the medical laboratory sciences program director. Admission to medical laboratory sciences schools is selective, so candidates should strive for strong academic standing (2.5 science GPA or higher). Students who fail to gain admission to a NAACLS-approved school are unable to complete this degree program. Such students may transfer to Biology, BA (p. 643) or the Biology, BS (p. 648) without loss of credits.

Application to medical laboratory sciences schools should be initiated about a year before the desired entrance date. This fact, coupled with the large number of required courses in the pre-professional curriculum, makes it imperative that students in the program consult regularly with their faculty advisor. All medical laboratory sciences majors and prospective majors are urged to enroll in MLAB 200 Introduction to Medical Laboratory Science as early as possible. This course provides information on the profession, as well as the educational demands placed on candidates.

**Senior Year**

Students should be aware that the senior year spent off campus requires the following special interpretation of university policies:

- Students may present no more than 6 credits of 'D' grades in biology and chemistry courses required in three years of pre-professional study.
- No unsatisfactory grades (less than 'C') may be presented for courses in the senior year of professional study.

- Transfer students must present at least 16 credits of 300 to 400-level biology or chemistry coursework taken at Mason.
- Transfer students entering with more than 45 transfer credits are often unable to complete the pre-professional phase of their program in the usual three years of full-time study.

Senior students are registered at the university through special procedures. For details, consult the program director.

**Affiliated NAACLS-Approved Schools**

This program requires the equivalent of three full years of professional study at the college level preceding a senior year of professional education in an affiliated school of medical laboratory sciences. All affiliated schools are accredited by the NAACLS:

- Augusta Health- School of Clinical Laboratory Science (https://www.augustahealth.com/cls)
- George Washington University- School of Medicine and Health Sciences: The Medical Laboratory Sciences Program (http://smhs.gwu.edu/medical-laboratory-sciences)
- INOVA Fairfax Hospital- Medical Laboratory Science Program (https://www.inova.org/education/medical-laboratory-science)
- Sentara Rockingham Memorial Hospital- School of Medical Laboratory Science (https://www.sentara.com/harrisonburg-virginia/hospitalslocations/locations/school-of-medical-laboratory-science.aspx)

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 656) tab for specific policies related to this program.

Students must complete the requirements outlined below, choosing one Professional Study/Concentration option:

- Not choosing a concentration ("Professional Study: Generalist Option") will provide students generalist training. Upon graduation, the board certification test may be taken and would allow graduates to practice in any area of a hospital or laboratory.
- Choosing a concentration will allow students to complete their clinical rotations in that specific area. Upon graduation, the Molecular Biology or Microbiology (depending upon the concentration chosen) board certification test may be taken.

**Biology Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
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<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
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Total Credits 12

**MLAB and BIOL Additional Courses**

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<tbody>
<tr>
<td>MLAB 200</td>
<td>Introduction to Medical Laboratory Science</td>
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</tbody>
</table>
MLAB 300  Science Writing  1  2
BIOL 305  Biology of Microorganisms  3
BIOL 306  Biology of Microorganisms Laboratory  1
BIOL 430  Advanced Human Anatomy and Physiology I  4
BIOL 431  Advanced Human Anatomy and Physiology II  4
BIOL 452  Immunology  3
BIOL 453  Immunology Laboratory  1

Total Credits  19

1  Fulfills writing intensive requirement.

Chemistry

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
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<td>General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
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<tr>
<td>&amp; CHEM 213</td>
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<tr>
<td>CHEM 212 &amp; CHEM 214</td>
<td>General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
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<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I  3</td>
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<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I  2</td>
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<td>Select one from the following:  4-5</td>
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<tr>
<td>BIOL 483</td>
<td>General Biochemistry</td>
<td></td>
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<tr>
<td>CHEM 314 &amp; CHEM 318</td>
<td>Organic Chemistry II and Organic Chemistry Lab II</td>
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Total Credits  17-18

Mathematics

<table>
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<td>Select one from the following:  3-6</td>
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</tr>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 123 &amp; MATH 124</td>
<td>Calculus with Algebra/Trigonometry, Part A and Calculus with Algebra/Trigonometry, Part B (Mason Core) (p. 142)</td>
<td>3-6</td>
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</table>

Total Credits  3-6

Information Technology

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Any course(s) which fulfills the Mason Core: Information Technology requirement

Total Credits  3

Professional Study: Generalist Option

Senior students are registered at the university through special procedures. For details, consult the medical laboratory science program director.

The senior year spent off campus requires the following special interpretation of university policies:

- Transfer students must present at least 16 credits of 300 to 400-level biology or chemistry coursework taken at Mason.
- No unsatisfactory grades (less than 'C') may be presented for courses in the senior year of professional study.
- Transfer students entering with more than 45 transfer credits are often unable to complete the pre-professional phase of their program in the usual three years of full-time study.

Students may have up to 30 credits of professional study during the senior year awarded for clinical education at an affiliated school of medical technology. No more than 30 professional credits may be applied toward the degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLAB 401</td>
<td>Orientation to the Problems and Practices of the Clinical Laboratory</td>
<td></td>
</tr>
<tr>
<td>MLAB 402</td>
<td>Clinical Hematology and Coagulation</td>
<td></td>
</tr>
<tr>
<td>MLAB 403</td>
<td>Clinical Microscopy</td>
<td></td>
</tr>
<tr>
<td>MLAB 404</td>
<td>Serology and Immunohematology</td>
<td></td>
</tr>
<tr>
<td>MLAB 405</td>
<td>Clinical Microbiology</td>
<td></td>
</tr>
<tr>
<td>MLAB 406</td>
<td>Clinical Chemistry</td>
<td></td>
</tr>
<tr>
<td>MLAB 407</td>
<td>Clinical Molecular Biology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits  30

Notes:

Students are encouraged to elect additional basic science courses during their pre-professional years. Recommended courses include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 465</td>
<td>Histology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 483</td>
<td>General Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 484</td>
<td>Cell Signaling and Disease</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 485</td>
<td>Cell Signaling Laboratory</td>
<td>2-3</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Quantitative Chemical Analysis</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 244</td>
<td>College Physics I Lab (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 245</td>
<td>College Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 246</td>
<td>College Physics II Lab (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Professional Study: Molecular Biology Concentration (MOB)

Senior students are registered at the university through special procedures. For details, consult the medical laboratory science program director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MLAB 401</td>
<td>Orientation to the Problems and Practices of the Clinical Laboratory</td>
<td></td>
</tr>
<tr>
<td>MLAB 402</td>
<td>Clinical Hematology and Coagulation</td>
<td></td>
</tr>
<tr>
<td>MLAB 403</td>
<td>Clinical Microscopy</td>
<td></td>
</tr>
<tr>
<td>MLAB 404</td>
<td>Serology and Immunohematology</td>
<td></td>
</tr>
<tr>
<td>MLAB 405</td>
<td>Clinical Microbiology</td>
<td></td>
</tr>
<tr>
<td>MLAB 406</td>
<td>Clinical Chemistry</td>
<td></td>
</tr>
<tr>
<td>MLAB 407</td>
<td>Clinical Molecular Biology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits  30

Notes:

Students are encouraged to elect additional basic science courses during their pre-professional years. Recommended courses include:
The senior year spent off campus requires the following special interpretation of university policies:

- Transfer students must present at least 16 credits of 300 to 400-level biology or chemistry coursework taken at Mason.
- No unsatisfactory grades (less than 'C') may be presented for courses in the senior year of professional study.
- Transfer students entering with more than 45 transfer credits are often unable to complete the pre-professional phase of their program in the usual three years of full-time study.

Students may have up to 30 credits of professional study during the senior year awarded for clinical education at an affiliated school of medical technology. No more than 30 professional credits may be applied toward the degree.

This concentration is a pathway leading to eligibility for categorical certification as a Certified Technologist by the American Society for Clinical Pathology (ASCP) (https://www.ascp.org/content) Board of Certification (BOC) (https://www.ascp.org/content/board-of-certification).

The concentration is one year long, consisting of about 20% classroom and 80% hands-on laboratory experience. Instructors include the expert clinical scientists and technologists of Quest Diagnostics (http://www.questdiagnostics.com/home.html) in Chantilly, Virginia.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLAB 401</td>
<td>Orientation to the Problems and Practices of the Clinical Laboratory</td>
<td>30</td>
</tr>
<tr>
<td>MLAB 407</td>
<td>Clinical Molecular Biology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 30

Notes:

Students are encouraged to elect additional basic science courses during their pre-professional years. Recommended courses include:

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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<td>4</td>
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<td>BIOL 483</td>
<td>General Biochemistry</td>
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</tr>
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<td>BIOL 484</td>
<td>Cell Signaling and Disease</td>
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<td>CHEM 321</td>
<td>Quantitative Chemical Analysis</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 244</td>
<td>College Physics I Lab (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 245</td>
<td>College Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 246</td>
<td>College Physics II Lab (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Professional Study: Histotechnology Concentration (HISO)

Senior students are registered at the university through special procedures. For details, consult the medical laboratory science program director.

The senior year spent off campus requires the following special interpretation of university policies:

- Transfer students must present at least 16 credits of 300 to 400-level biology or chemistry coursework taken at Mason.
MLAB 401 Topics

The following topics will be covered under MLAB 401 Orientation to the Problems and Practices of the Clinical Laboratory:

1. Introduction to CLS and Laboratory Operations

This course is a brief introduction to the Clinical Laboratory Science professions and Laboratory Operations. Topics include: Introduction to Laboratory Operations, Pre-analytics and Specimen Types, Quality Management Concepts, Quality Control, Laboratory Professions, Professional Ethics, Laboratory Mathematics, Proper use of Laboratory Equipment, Introduction to Laboratory Instrumentation.

2. Board Exam Preparation

This course is a structured review and practice in preparation for the American Society for Clinical Pathology (https://www.ascp.org/content) Technologist in Molecular Biology Board of Certification Exam. Practice tests and questions from a variety of published and authoritative sources are used to reinforce the content of the Technologist in Molecular Biology program.

MLAB 405 Topics

The following topics are covered under MLAB 405 Clinical Microbiology:

1. Introduction to Clinical Microbiology

This course is a brief introduction to the discipline of Clinical Microbiology, and laboratory diagnostic techniques. Topics include: Overview of Microbiology Theory, Methods and Applications, Instrumentation, Staining, and Media, Immunology, Serology, and Molecular Diagnostics.

2. Medical Virology

This course is a survey of the characteristics, pathogenicity, and laboratory diagnosis of important human viruses. Topics include viral taxonomy and classical virology. Special emphasis is placed on the epidemiology and the laboratory's role in influenza pandemics.

3. Medical Mycology

This course is a comprehensive presentation of medically important fungi. Emphasis is placed on clinical presentation and laboratory identification of pathogenic species and opportunistic pathogens. Topics include general mycology methods, yeasts, susceptibility testing, molds (Hyaline, Mucor, Dematiaceous), Dermatophytes, Systemic infections, and Pneumocystis.

4. Medical Parasitology

This course is a comprehensive presentation of human parasites. Emphasis is placed on clinical presentation and laboratory identification. Topics include Flagellates, Ciliates, Coccidians, Malaria and Babesia, Other Blood Born and Tissue Born parasites, Nematodes, Cestodes, Trematodes, and Arthropods.

5. Molecular Detection of Infectious Disease

This course examines the advances in using molecular methods to detect human infectious disease. Careful attention is given to the comparison of molecular technologies with traditional microbiology methods. Topics include molecular methods and applications, including PCR, sequencing, TMA, and PEGE, specimens of choice, sample preparation, Quality Control, primer selection, Molecular methods in selecting antimicrobial agents, molecular epidemiology, and target organisms: fungi, bacteria, parasites, and viruses.

6. Medical Bacteriology

This course is a comprehensive presentation of bacteria isolated in the clinical laboratory. Emphasis is placed on the laboratory identification of isolates from a variety of specimen sources, and pathogenic species. Topics include Instrumentation and MALDI, Gram Positive Cocci, Gram Positive Baccili, Enterics, non-fermenters, Moraxella, Neisseria, Pasteurella, Haemophilus and HACEK, Campylobacter, Helicobacter, Legionella, CDC Select Agents, Chlamydia, Mycoplasm, Ureaplastm, Spirochetes, Anaerobes, Antibiotics and Susceptibility testing, and Acid Fast Bacilli.

7. Microbiology Clinical Correlations

Designed as the capstone for the Technologist in Microbiology program, this course takes a body system view of the pathogenicity of infectious disease. Attention is given to integrating clinical presentation and case history to laboratory investigation and diagnosis. Topics include UTI/Genital, Food Borne/GI, Cystic Fibrosis, Blood, CSF, Body Fluids, and Wounds.

MLAB 407 Topics

The following topics will be covered under MLAB 407 Clinical Molecular Biology:

1. Introduction to Clinical Molecular Biology

This course presents the fundamentals of nucleic acid testing in the clinical laboratory and the underlying human genetics. Topics include: Fundamentals of Nucleic Acid Biochemistry, Common Techniques in Molecular Biology (Extraction, Resolution and Detection of Nucleic Acids, Analysis and Characterization, Amplification, Chromosomal Structure and Mutations, Gene Mutations, and DNA Sequencing).

2. Advanced Methods in Clinical Molecular Biology

This course applies the fundamentals of nucleic acid testing to advanced methods commonly used in the contemporary clinical and research laboratory. Topics include: PCR, Transcription-Based Amplification, Probe Amplification, Branched DNA, Hybrid Capture, Amplification: Signal, Cleavage-Based, Cycling Probe, Sequencing: Direct, Next Gen, Pyrosequencing, Bisulfite, RNA Sequencing, Bioinformatics, Human Genome Project.

3. Molecular Detection of Infectious Disease

This course examines the advances in using molecular methods to detect human infectious disease. Careful attention is given to the comparison of molecular technologies with traditional microbiology methods. Topics include: Molecular methods and applications, including PCR, sequencing, TMA, and PEGE, specimens of choice, sample preparation, Quality Control, primer selection, Molecular methods in selecting antimicrobial agents, molecular epidemiology, and target organisms: fungi, bacteria, parasites, and viruses.

4. Human Molecular and Chromosomal Applications and Pathology

This course presents advanced methods in nucleic acid testing to human medico-legal, forensic, and pathology applications. Topics include: Polymorphisms, RFLP, Paternity Testing, Linkage, Single Nucleotide Polymorphisms, Bone Marrow Engraftment, Mitochondrial DNA Polymorphisms and Disorders, Chromosomal Abnormalities, Patterns of Inheritance, Single Gene Disorders, Lysosomal Storage Disorders, Cystic Fibrosis, Trinucleotide Repeats, Genomic Imprinting, Array CGH, Molecular Oncology, HLA and Transplantation.

Mason Core and Electives

In order to meet a minimum of 120 credits, this degree requires an additional 32-36 credits, which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below). Requirements
for Bachelor's Degrees (p. 89), and electives. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

Mason Core
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td></td>
<td>Foundation Requirements</td>
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<td></td>
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<td></td>
<td>Oral Communication (p. 142)</td>
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<td>Quantitative Reasoning (p. 143)</td>
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<td></td>
<td>Information Technology and Computing (p. 143)</td>
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<td></td>
<td>Exploration Requirements</td>
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<td></td>
<td>Arts (p. 144)</td>
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<td>Global Understanding (p. 146)</td>
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<td>Literature (p. 147)</td>
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<td>Natural Science (p. 148)</td>
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<td>Social and Behavioral Sciences (p. 150)</td>
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<td>Western Civilization/World History (p. 151)</td>
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<td>Writing-Intensive (p. 151)</td>
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<td>Synthesis/Capstone (p. 153)</td>
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<td>Total Credits</td>
<td>40</td>
</tr>
</tbody>
</table>

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.

Department of Chemistry and Biochemistry
303 Planetary Hall
Fairfax Campus
Phone: 703-993-1070
Email: chemistry@gmu.edu
Website: chemistry.gmu.edu

Administration
- Gerald Weatherspoon, Chair
- Megan Erb, Associate Chair
- Suzanne Slayden, Undergraduate Coordinator
- Benoit Van Aken, Graduate Coordinator

Undergraduate Programs
The Department of Chemistry and Biochemistry offers undergraduate programs leading to the BA (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-ba) and BS (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-bs) degree in Chemistry, with optional concentrations in Analytical Chemistry, Biochemistry, and Environmental Chemistry, as well as a five-year BS/Accelerated MS degree (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-bs/#acceleratedmasterstextcontainer). Our comprehensive undergraduate education in chemistry is designed to prepare students for professional careers in chemistry and for advanced studies in chemistry and chemistry-related areas such as environmental science, material science, biochemistry, medicinal chemistry, geochemistry, chemical waste management, pharmacy, forensic chemistry, and chemical engineering. Students planning medical, dental, or veterinary careers may meet the requirements of these professional schools by majoring in chemistry.

Pre-Medical, Pre-Dental, Pre-Pharmacy, and Pre-Veterinary Students
Web: prehealth.gmu.edu (http://prehealth.gmu.edu)

Many students planning medical, dental, pharmacy, veterinary, optometry, or other health professional careers choose to pursue a major in chemistry. These students should consult the health professions advising web site on required coursework and overall preparation.

Pre-Pharmacy Society
Mason students who are interested in pursuing careers in pharmacy are encouraged to participate in the Pre-Pharmacy Society. This student organization organizes supplemental programming focused toward pharmacy as a career.

Chemistry Club
The Chemistry Club provides a social and informational network for students. It serves the Department of Chemistry and Biochemistry by sponsoring informational programs and allowing students to work at university events.

Graduate Programs
The department's graduate programs (MS (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-ms) and PhD (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-biochemistry-phd)) provide advanced training for students who are recent college graduates, professionals in teaching, or technical workers in local research organizations. Students select a specialization from the fields of analytical, biological, environmental, inorganic, organic, physical, or computational chemistry. The graduate chemistry courses for these programs are usually offered during the late afternoon or evening hours for the convenience of students who are employed full-time. Graduate fellowships and teaching/research assistantships are available to the most qualified students.

The department offers a Chemistry MS (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-ms) with a research project (thesis option) or an all coursework program (non-thesis option). Within the MS, students may pursue a concentration in biochemistry. The PhD in all branches of chemistry is available through the Chemistry and Biochemistry, PhD. Students may also pursue Chemistry-related PhD research through the Environmental Science and Public Policy, PhD and the Biosciences, PhD. An area of emphasis in computational chemistry is available through the Computational Sciences and Informatics, PhD, offered in conjunction with the Department of Computational and Data Sciences.
Faculty

Department Faculty

Professors
Foster, Hussam

Associate Professors
Bishop, Couch, Hatton, Honeychuck, Jones, Schreifels, Slayden, Van Aken, Weatherspoon (chair)

Assistant Professors
Erb (associate chair), Fayissa, Paige, Jing, You

Emeriti
Cozzens, Davies

Requirements & Policies

Requirements

Writing Intensive Requirement
Mason requires all undergraduate students to complete at least one course designated as "writing intensive" in their majors at the 300 level or above. Students majoring in chemistry fulfill this requirement by successfully completing CHEM 336 Physical Chemistry Lab I or CHEM 465 Biochemistry Lab.

Teacher Licensure
Students who wish to become teachers should consult the College of Education and Human Development (p. 161) and attend an information session early in their studies. For more information, visit the Graduate School of Education's website (http://gse.gmu.edu).

Programs

- Chemistry Minor
- Chemistry and Biochemistry, PhD
- Chemistry, BA
- Chemistry, BS
- Chemistry, MS

Chemistry, BA

Banner Code: SC-BA-CHEM

Academic Advising
Phone: 703-993-1071
Email: sslayden@gmu.edu
Website: cos.gmu.edu/chemistry/undergraduate-programs/

This program, when coordinated with the necessary courses in education, meets requirements for teacher licensure. It also meets requirements for entrance to medical and other professional schools.

Teacher Licensure
Students who wish to become teachers and plan to seek teacher licensure should consider the following options:

- Chemistry, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Chemistry concentration) (p. 666)
- Curriculum and Instruction Undergraduate Certificate (p. 166)

Interested students should attend an information session early in their studies. For more information, visit the Graduate School of Education's website (http://gse.gmu.edu).

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies
Students must fulfill all Requirements for Bachelor's Degrees (p. 89), including the Mason Core (p. 142). As outlined in the Requirements (p. 662) section, students in this bachelor's program must also complete the additional College Requirements for the BA Degree.

CHEM 336 Physical Chemistry Lab I or CHEM 465 Biochemistry Lab will fulfill the writing intensive requirement.

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

Termination from the Major
To ensure the academic integrity of the Chemistry and Biochemistry undergraduate major program, students are expected to maintain a satisfactory level of academic performance.

No chemistry, math, or science course that is required for the major may be attempted more than three times. Students who do not successfully complete such a course with a grade of C or better by the third attempt may be terminated from the major.

Students who have been terminated from the chemistry major may not register for a chemistry course without the permission of the Department of Chemistry and Biochemistry.

A student may not declare a major in chemistry if the student has previously met the termination criteria for the major at any time, regardless of what the student's major was at the time the courses were taken.

Requirements

Degree Requirements
Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 662) tab for specific policies related to this program.
Students must complete the chemistry program requirements with a minimum GPA of 2.30 and present no more than two courses with a grade of ‘D’ (1.00) in CHEM coursework at graduation.

**BA without Concentration**

Students who do not select the optional concentration complete the curriculum requirements listed below.

### Chemistry Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
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<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
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<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
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<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Organic Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Quantitative Chemical Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 331</td>
<td>Physical Chemistry I</td>
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<td>Physical Chemistry II</td>
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<tr>
<td>CHEM 336</td>
<td>Physical Chemistry Lab I</td>
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<tr>
<td>CHEM 337</td>
<td>Physical Chemistry Lab II</td>
<td>2</td>
</tr>
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<td></td>
<td>Select 5 credits of electives in chemistry</td>
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1. Fulfills the writing intensive requirement.

### Mathematics Courses

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<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
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### Physics Courses

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<thead>
<tr>
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<tr>
<td>PHYS 243 &amp; PHYS 244 &amp; PHYS 245 &amp; PHYS 246</td>
<td>College Physics I (Mason Core) (p. 142) and College Physics I Lab (Mason Core) (p. 142) and College Physics II (Mason Core) (p. 142) and College Physics II Lab (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>PHYS 160 &amp; PHYS 161 &amp; PHYS 260 &amp; PHYS 261</td>
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<tr>
<td>Total Credits</td>
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</tr>
</tbody>
</table>

### Concentration in Biochemistry (BC)

The concentration in biochemistry is designed for students interested in studying chemistry at its interface with the biological sciences. Those interested in health science careers can obtain an excellent science background through this concentration.

Students majoring in chemistry with a concentration in biochemistry will complete the coursework below.

### Chemistry Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
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<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
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<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
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<td>General Chemistry Laboratory II (Mason Core) (p. 142)</td>
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<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
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<td>CHEM 318</td>
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<td>2</td>
</tr>
<tr>
<td>CHEM 331</td>
<td>Physical Chemistry I</td>
<td>3</td>
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<tr>
<td>CHEM 332</td>
<td>Physical Chemistry II</td>
<td>3</td>
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<tr>
<td>CHEM 336</td>
<td>Physical Chemistry Lab I</td>
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<tr>
<td>CHEM 337</td>
<td>Physical Chemistry Lab II</td>
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1. Fulfills the writing intensive requirement.

### Mathematics and Statistics Courses

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<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
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<tr>
<td>Total Credits</td>
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### Physics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>PHYS 244</td>
<td>College Physics I Lab (Mason Core) (p. 142)</td>
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<td>PHYS 245</td>
<td>College Physics II (Mason Core) (p. 142)</td>
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<tr>
<td>PHYS 246</td>
<td>College Physics II Lab (Mason Core) (p. 142)</td>
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<tr>
<td>Total Credits</td>
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</table>
Biology Courses

<table>
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<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
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</tbody>
</table>

Total Credits 4

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), College Requirements for the BA Degree (outlined below), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- Without concentration: 64 credits
- BC concentration: 58 credits

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

**Foundation Requirements**

- Written Communication (ENGH 101) (p. 142)
- Oral Communication (p. 142)
- Quantitative Reasoning (p. 143)
- Information Technology and Computing (p. 143)

**Exploration Requirements**

- Arts (p. 144)
- Global Understanding (p. 146)
- Literature (p. 147)
- Natural Science (p. 148)
- Social and Behavioral Sciences (p. 150)
- Western Civilization/World History (p. 151)

**Integration Requirements**

- Written Communications (ENGH 302) (p. 142)
- Writing-Intensive (p. 151) 1
- Synthesis/Capstone (p. 153) 2

Total Credits 40

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2. Minimum 3 credits required.

Philosophy or Religious Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>PHIL</td>
<td>(p. 2044) 1</td>
<td></td>
</tr>
<tr>
<td>RELI</td>
<td>(p. 2144)</td>
<td></td>
</tr>
</tbody>
</table>

1. PHIL 323 Classical Western Political Theory and PHIL 324 Modern Western Political Theory may not be used to fulfill this requirement.

Social and Behavioral Sciences

Choose one approved Mason Core: Social and Behavioral Sciences (p. 150) course in addition to the Mason Core (p. 142)-required course for a total of 6 credits. The two courses used to fulfill the combined college-level and university requirements must be from different disciplines.

This requirement may be fulfilled by completing any course in ANTH (p. 1212), CRIM (p. 1514), ECON (p. 1564), GOVT (p. 1774), HIST (p. 1818), LING (p. 1896), PSYC (p. 2074), or SOCI (p. 2167), and the following GGS (p. 1732) courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td></td>
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<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td></td>
</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

1. HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

Natural Science

Choose one credit in addition to the Mason Core: Natural Science (p. 148) requirement for a total of 8 credits. This combined college-level and university requirement must be fulfilled by completing two of any approved Mason Core: Natural Science (p. 148) courses that include a laboratory experience 1.

College Requirements for the BA Degree

In addition to the program requirements and the Mason Core (p. 142) requirements, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill this college-level requirement may also be used simultaneously to satisfy other requirements such as Mason Core (p. 142) requirements, other college-level requirements, or requirements for the major. In some cases, the requirements listed below may be superseded by requirements of the degree program and the Mason Core (p. 142).
Select an additional Mason Core Natural Science course 1

1 BIOL 124 Human Anatomy and Physiology and BIOL 125 Human Anatomy and Physiology may not be used to fulfill this requirement.

### Foreign Language

Intermediate-level proficiency in one foreign language is required 1.

This requirement may be fulfilled by completing a course in a foreign language numbered 202, 209, or 210 (or higher-level courses taught in the language).

Select a foreign language course numbered 202, 209, 210, or higher if a waiver isn't applicable 0-3

Students may be eligible for a waiver of this requirement if they are already proficient in a second language or if they have received a satisfactory score on an approved proficiency test. Additional information on waivers can be found via the college's Office of Academic and Student Affairs (https://cos.gmu.edu/uaa).

### Non-Western Culture

Choose one approved Non-Western Culture Requirement 1 course in addition to the course used to fulfill the Mason Core: Global Understanding (p. 146) requirement. A course used to fulfill the Mason Core: Global Understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. However, a course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core (p. 142) requirements, college-level requirements, or requirements for the major).

Select 3 credits from approved Non-Western Culture courses if a waiver isn't applicable: 0-3

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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
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<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
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<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
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<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
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<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
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<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
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<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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</tr>
<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
<td>3</td>
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<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
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<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
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<td>Major Chinese Writers (Mason Core) (p. 142)</td>
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<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td>3</td>
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<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<tr>
<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
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<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
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<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
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<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
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</tr>
<tr>
<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
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<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
</tr>
<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td>3</td>
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<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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</tbody>
</table>
HIST 261 Survey of African History (Mason Core) (p. 142) 3
HIST 262 Survey of African History (Mason Core) (p. 142) 3
HIST 271 Survey of Latin American History (Mason Core) (p. 142) 3
HIST 272 Survey of Latin American History (Mason Core) (p. 142) 3
HIST 281 Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 282 Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 326 Stalinism 3
HIST 327 The Soviet Union and Russia Since World War II 3
HIST 328 Rise of Russia (Mason Core) (p. 142) 3
HIST 353 History of Traditional China 3
HIST 354 Modern China (Mason Core) (p. 142) 3
HIST 356 Modern Japan (Mason Core) (p. 142) 3
HIST 357 Postwar Japan (Mason Core) (p. 142) 3
HIST 360 History of South Africa (Mason Core) (p. 142) 3
HIST 364 Revolution and Radical Politics in Latin America (Mason Core) (p. 142) 3
HIST 365 Conquest and Colonization in Latin America (Mason Core) (p. 142) 3
HIST 366 Comparative Slavery 3
HIST 367 History, Fiction, and Film in Latin America 3
HIST 387 Topics in Global History (Mason Core) (p. 142) 3-6
HIST 426 The Russian Revolution 3
HIST 460 Modern Iran (Mason Core) (p. 142) 3
HIST 461 Arab-Israeli Conflict 3
HIST 462 Women in Islamic Society (Mason Core) (p. 142) 3
HIST 465 The Middle East in the 20th Century 3
JAPA 310 Japanese Culture in a Global World (Mason Core) (p. 142) 3
JAPA 340 Topics in Japanese Literature (Mason Core) (p. 142) 3
KORE 320 Korean Popular Culture in a Global World 3
MUSI 103 Musics of the World (Mason Core) (p. 142) 3
RELI 211 Religions of the West (Mason Core) (p. 142) 3
RELI 212 Religions of Asia (Mason Core) (p. 142) 3
RELI 240 Death and the Afterlife in World Religions 3
RELI 272 Islam 3
RELI 313 Hinduism (Mason Core) (p. 142) 3
RELI 314 Chinese Philosophies and Religious Traditions 3
RELI 315 Buddhism (Mason Core) (p. 142) 3
RELI 337 Mysticism: East and West 3
RELI 365 Muhammad: Life and Legacy 3
RELI 374 Islamic Thought (Mason Core) (p. 142) 3
RELI 375 Qur’an and Hadith 3
RELI 379 Islamic Law, Society, and Ethics 3
RELI 387 Islam, Democracy, and Human Rights 3
RELI 490 Comparative Study of Religions (Mason Core) (p. 142) 3
RUSS 353 Russian Civilization (Mason Core) (p. 142) 3
RUSS 354 Contemporary Post-Soviet Life (Mason Core) (p. 142) 3

1 Students who can document attendance at a native school in a non-western country for at least four years may request a waiver from this requirement through the CHSS Undergraduate Academic Affairs Office (http://chssundergrad.gmu.edu).

Honors

Honors in the Major
Chemistry majors who have completed prerequisites for CHEM 455 Honors Research in Chemistry and CHEM 456 Honors Research in Chemistry and have maintained an overall GPA of at least 3.00 in mathematics and science courses are eligible to enter the departmental honors program. To graduate with honors in chemistry, a student is required to maintain a minimum GPA of 3.00 in mathematics and science courses and successfully complete the two semesters of CHEM 455 Honors Research in Chemistry and CHEM 456 Honors Research in Chemistry with a minimum GPA of 3.50.

In order to apply for Chemistry Honors, please complete the application (https://cos.gmu.edu/chemistry/wp-content/uploads/sites/7/2015/08/form-honors-program-application-2016.pdf) and submit it to the undergraduate coordinator.

Accelerated Master's

Chemistry, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Chemistry concentration)

Overview
Highly-qualified undergraduates may be admitted to the bachelor's/accelerated master's option and obtain a BA (p. 662) or BS in Chemistry (p. 667) (degree without concentration) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education chemistry) in an accelerated time frame after completion of 149 credits. See AP.6.7 Bachelor's/Accelerated Master's Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of Chemistry and Biochemistry (p. 661) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).
Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 12

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Chemistry, BS
Banner Code: SC-BS-CHEM

Academic Advising
Phone: 703-993-1071
Email: sslayden@gmu.edu
Website: cos.gmu.edu/chemistry/undergraduate-programs/

This program is approved by the American Chemical Society (https://www.acs.org/content/acs/en.html). Upon completion, students who choose either the BS in Chemistry with no concentration or with the Analytical Chemistry concentration are certified to the society. Students that have a keen interest in sustainability should choose the Environmental Chemistry concentration. Students planning professional careers in chemistry should choose this degree.

Teacher Licensure
Students who wish to become teachers and plan to seek teacher licensure should consider the following options:

- Chemistry, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Chemistry concentration) (p. 671)
- Curriculum and Instruction Undergraduate Certificate (p. 166)

Interested students should attend an information session early in their undergraduate career. For more information, visit the Graduate School of Education’s website (http://gse.gmu.edu).

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies
Students must fulfill all Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142).

CHEM 336 Physical Chemistry Lab I or CHEM 465 Biochemistry Lab will fulfill the writing intensive requirement for students majoring in chemistry.

Termination from the Major
To ensure the academic integrity of the Chemistry and Biochemistry undergraduate major program, students are expected to maintain a satisfactory level of academic performance.

No chemistry, math, or science course that is required for the major may be attempted more than three times. Students who do not successfully complete such a course with a grade of C or better by the third attempt may be terminated from the major.

Students who have been terminated from the Chemistry major may not register for a chemistry course without the permission of the Department of Chemistry and Biochemistry.

A student may not declare a major in chemistry if the student has previously met the termination criteria for the major at any time, regardless of what the student’s major was at the time the courses were taken.

Requirements

Degree Requirements
Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 667) tab for specific policies related to this program.

Students majoring in chemistry must complete the chemistry program requirements with a minimum GPA of 2.30 and present no more than two courses with a grade of ‘D’ (1.00) in CHEM coursework at graduation.

BS without Concentration
Students who do not select an optional concentration complete the curriculum requirements listed below.

Chemistry Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

(p. 142)
### Chemistry Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Organic Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Quantitative Chemical Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 331</td>
<td>Physical Chemistry I</td>
<td>3</td>
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<td>CHEM 332</td>
<td>Physical Chemistry II</td>
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<td>CHEM 336</td>
<td>Physical Chemistry Lab I 1</td>
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<td>CHEM 337</td>
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<td>2</td>
</tr>
<tr>
<td>CHEM 422</td>
<td>Instrumental Methods of Chemical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 423</td>
<td>Instrumental Methods of Chemical Analysis Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 441</td>
<td>Properties and Bonding of Inorganic Compounds</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 445</td>
<td>Inorganic Preparations and Techniques</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 463</td>
<td>General Biochemistry I</td>
<td>4</td>
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<tr>
<td></td>
<td>Select 3 credits of chemistry electives (p. 1367) 2</td>
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</table>

#### In Depth Electives

Select one from the following:

<table>
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<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 413</td>
<td>Synthetic and Mechanistic Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 427</td>
<td>Aquatic Environmental Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 438</td>
<td>Atmospheric Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 458</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
<tr>
<td>CHEM 464</td>
<td>General Biochemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 467</td>
<td>The Chemistry of Enzyme-Catalyzed Reactions</td>
<td></td>
</tr>
<tr>
<td>CHEM 468</td>
<td>Bioorganic Chemistry</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 52

1. Fulfills the writing intensive requirement.
2. Any lecture, lab or research course(s)

### Mathematics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
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</table>

Total Credits: 11

### Physics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
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</table>

Select one option:

#### Option One:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 160</td>
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<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
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</tr>
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<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
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#### Option Two:

<table>
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<tbody>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
<td>4</td>
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</tbody>
</table>

### Concentration in Environmental Chemistry (EVCH)

Students who choose this concentration will have a broad knowledge of chemistry and a firm foundation in the environmental sciences covering atmospheric, aquatic, and soil. The major prepares students to work in the public or private sector as environmental chemists as well as to pursue an advanced degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
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<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
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<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
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<tr>
<td>CHEM 214</td>
<td>General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>3</td>
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<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
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<td>CHEM 318</td>
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<td>Aquatic Environmental Chemistry</td>
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</tr>
<tr>
<td>CHEM 438</td>
<td>Atmospheric Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 441</td>
<td>Properties and Bonding of Inorganic Compounds</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 446</td>
<td>Bioinorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM Elective (lecture or research course) (p. 1367)</td>
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</table>

Total Credits: 49

1. Fulfills the writing intensive requirement.

### Physics Courses

Select one option:

#### Option One:

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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
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<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
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<td>PHYS 260</td>
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#### Option Two:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
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</tr>
</tbody>
</table>
### Mathematics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
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</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
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</tr>
<tr>
<td>or STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
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</table>

Total Credits 11

### Science Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 306</td>
<td>Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
<td>4</td>
</tr>
<tr>
<td>or BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 11

### Supporting Science Electives

Select two courses from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 458</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
<tr>
<td>or BIOL 309</td>
<td>Introduction to Oceanography</td>
<td></td>
</tr>
<tr>
<td>or EVPP 309</td>
<td>Introduction to Oceanography</td>
<td></td>
</tr>
<tr>
<td>or GEOL 309</td>
<td>Introduction to Oceanography</td>
<td></td>
</tr>
<tr>
<td>EVPP 301</td>
<td>Environmental Science: Biological Diversity and Ecosystems</td>
<td></td>
</tr>
<tr>
<td>EVPP 445</td>
<td>Principles of Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>GEOL 305</td>
<td>Environmental Geology</td>
<td></td>
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<tr>
<td>GEOL 313</td>
<td>Hydrogeology</td>
<td></td>
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<tr>
<td>BIOL 305 &amp; BIOL 306</td>
<td>Biology of Microorganisms and Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>or EVPP 305 &amp; EVPP 306</td>
<td>Environmental Microbiology Essentials and Environmental Microbiology Essentials Laboratory</td>
<td></td>
</tr>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6-8

1 The discipline sequences may be interchanged only with approval by the program coordinator.

The remaining credits are fulfilled by Mason Core requirements or general electives.

### Concentration in Analytical Chemistry (ANAC)

The Analytical Chemistry concentration is designed to introduce and train students in modern aspects of analytical chemistry. Students who choose this program will be well prepared to run sophisticated analytical instruments in industry and research laboratories and to pursue an advanced degree specializing in analytical chemistry.

### Chemistry Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Organic Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Quantitative Chemical Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 331</td>
<td>Physical Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 332</td>
<td>Physical Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 336</td>
<td>Physical Chemistry Lab I 1</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 337</td>
<td>Physical Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 422</td>
<td>Instrumental Methods of Chemical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 423</td>
<td>Instrumental Methods of Chemical Analysis Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 427</td>
<td>Aquatic Environmental Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>or CHEM 355</td>
<td>Undergraduate Research</td>
<td></td>
</tr>
<tr>
<td>or CHEM 451</td>
<td>Special Projects in Chemistry</td>
<td></td>
</tr>
<tr>
<td>or CHEM 452</td>
<td>Special Projects in Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 463</td>
<td>General Biochemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 441</td>
<td>Properties and Bonding of Inorganic Compounds</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 465</td>
<td>Biochemistry Lab</td>
<td>2</td>
</tr>
<tr>
<td>or CHEM 445</td>
<td>Inorganic Preparations and Techniques</td>
<td></td>
</tr>
<tr>
<td>CHEM 424</td>
<td>Principles of Chemical Separation</td>
<td>3</td>
</tr>
<tr>
<td>or CHEM 425</td>
<td>Electroanalytical Chemistry</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 52

1 Fulfills the writing intensive requirement.

### Physics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 8

### Mathematics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
</tbody>
</table>
MATH 213 Analytic Geometry and Calculus III 3

Total Credits 11

Supporting Science Electives

Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 101</td>
<td>Introduction to Bioengineering</td>
<td>6</td>
</tr>
<tr>
<td>or STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECE 101</td>
<td>Introduction to Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>or CHEM 620</td>
<td>Modern Instrumentation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

The remaining hours are used to fulfill the Mason Core requirements and general elective courses.

CDS 130 Computing for Scientists (Mason Core) (p. 142) is required to fulfill the Mason Core IT requirement.

Concentration in Biochemistry (BC)

Students planning professional careers in biochemistry, the pharmaceutical industry, medicine, biotechnology, or related fields with a chemistry emphasis should choose this program instead of the Chemistry, BS without a concentration. This concentration provides students with a focus on biochemistry while retaining a strong chemistry foundation. Students are allowed to tailor the concentration to their interests with 9 credits of biology or chemistry elective credits.

Chemistry Courses

Select 9 credits of approved science electives chosen from CHEM or BIOL courses numbered 302-499

MATH 114 Analytic Geometry and Calculus II 4

Total Credits 8

Physics Courses

Select one option:

<table>
<thead>
<tr>
<th>Option One:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 243 College Physics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 244 College Physics I Lab (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>PHYS 245 College Physics II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 246 College Physics II Lab (Mason Core)</td>
<td>(p. 142)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option Two:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160 University Physics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 161 University Physics I Laboratory (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>PHYS 260 University Physics II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 261 University Physics II Laboratory (Mason Core)</td>
<td>(p. 142)</td>
</tr>
</tbody>
</table>

Total Credits 8

Biology Courses

Select 9 credits of approved science electives chosen from CHEM or BIOL courses numbered 302-499

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), and electives. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- Without concentration: 49 credits
- Environmental concentration: 33-35 credits
- Analytical concentration: 43 credits
- Biochemistry concentration: 48 credits

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to
consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Exploration Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Integration Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.

**Honors**

**Honors in the Major**

Chemistry majors who have completed prerequisites for CHEM 455 Honors Research in Chemistry and CHEM 456 Honors Research in Chemistry and have maintained an overall GPA of at least 3.00 in mathematics and science courses are eligible to enter the departmental honors program. To graduate with honors in chemistry, a student is required to maintain a minimum GPA of 3.00 in mathematics and science courses and successfully complete the two semesters of CHEM 455 Honors Research in Chemistry and CHEM 456 Honors Research in Chemistry with a minimum GPA of 3.50.

In order to apply for Chemistry Honors, please complete the application (https://cos.gmu.edu/chemistry/wp-content/uploads/sites/7/2015/08/form-honors-program-application-2016.pdf) and submit it to the undergraduate coordinator.

**Accelerated Master’s**

**Chemistry, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Chemistry concentration) Overview**

Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain a BA (p. 662) or BS in Chemistry (p. 667) (degree without concentration) and an MEd in Curriculum and instruction (p. 170) (concentration in secondary education chemistry) in an accelerated time frame after completion of 149 credits. See AP6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of Chemistry and Biochemistry (p. 661) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

**Accelerated Option Requirements**

Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

**Chemistry, BS/Chemistry, Accelerated MS Overview**

This bachelor’s/accelerated master’s degree program allows academically strong undergraduates with a commitment to research to obtain both the Chemistry, BS (p. 667) and the Chemistry, MS (p. 672) degrees within an accelerated timeframe. Upon completion of this 144 credit program, students will be exceptionally well prepared for entry into a professional school or a PhD program in chemistry or a related discipline. Students are eligible to enter this program and enroll in graduate courses after successfully completing 90 undergraduate credits, inclusive of prerequisites, toward the Chemistry, BS (p. 667) degree. This flexibility makes it possible for students to complete graduate coursework during their final year.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).
Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Application information for this accelerated master’s program can be found here (https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters).

Successful applicants will have an overall undergraduate GPA of at least 3.00. Additionally, they will have completed 36 credits of CHEM courses with a GPA of at least 3.00.

Accelerated Option Requirements
At the beginning of the student’s final undergraduate semester, students must submit a bachelor's/accelerated master's transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science’s Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master’s program in the semester immediately following conferral of the bachelor's degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals within the chemistry and biochemistry concentrations.

Reserve Graduate Credit
While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

Chemistry Minor
Banner Code: CHEM

Academic Advising
Phone: 703-993-1071
Email: sslayden@gmu.edu
Website: cos.gmu.edu/chemistry/undergraduate-programs/

This minor provides a firm foundation in chemical science. It is designed to be as flexible as possible so students can choose courses to complement their interests in areas such as biochemistry or environmental chemistry.

Requirements

Minor Requirements
Total credits: 16

Students should refer to the Admissions & Policies (p. 672) tab for specific policies related to this program.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 16 credits of CHEM courses at the 300-level or above</td>
<td>16</td>
</tr>
</tbody>
</table>

Total Credits 16

Chemistry, MS
Banner Code: SC-MS-CHEM

Academic Advising
Email: chemistry@gmu.edu
Website: cbgrad.gmu.edu/aboutthems.pdf

This master’s degree provides advanced training for recent college graduates, professionals in teaching, and technical workers in research organizations who have an interest in chemistry or biochemistry. With a Thesis Option Master’s in Chemistry, the serious student will perform original research and write an M.S. thesis under the direction of a faculty member. This option is for students planning to continue with a Ph.D., or to work in industry, academia, or a national laboratory. The Non thesis Option is often used by those going on to a professional degree, or to teach chemistry at the secondary school level.

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

To be considered for admission to degree status, students must have a bachelor’s degree in chemistry, biochemistry, or a related field from a regionally accredited institution and must meet general admission requirements for graduate study as specified in Graduate Admission Policies (p. 68). Admission is based on a departmental evaluation of the applicant’s background as evidenced by transcripts, résumés, and letters of recommendation. GRE scores are not required for admission into this program.

Policies
CHEM 500 Selected Topics in Modern Chemistry may not be applied toward the MS degree.

CHEM courses numbered 502 through 510 may be applied toward the degree only with prior written approval of the department.
For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

Requirements

Degree Requirements

Total credits: 30

Students should refer to the Admissions & Policies (p. 672) tab for specific policies related to this program.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three of the following core courses. Courses must be selected from three different core areas shown below: ¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analytical:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 624</td>
<td>Principles of Chemical Separation</td>
<td></td>
</tr>
<tr>
<td>Biochemistry:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 660</td>
<td>Protein Biochemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 662</td>
<td>Modern Methods of Drug Discovery</td>
<td></td>
</tr>
<tr>
<td>Environmental:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 651</td>
<td>Environmental Chemistry of Organic Substances</td>
<td></td>
</tr>
<tr>
<td>Inorganic:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 641</td>
<td>Solid State Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 646</td>
<td>Bioinorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>Organic:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 613</td>
<td>Modern Polymer Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 614</td>
<td>Physical Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

¹ These listed courses may also be taken as electives beyond the stated credit requirement for each option.

MS without Concentration

General chemistry students who do not wish to pursue a concentration complete the core courses above, the following requirements, and choose either the Thesis Option or the Non Thesis Option:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select the Thesis Option or the Non Thesis Option:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Core Course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CHEM 633</td>
<td>Chemical Thermodynamics and Kinetics</td>
<td></td>
</tr>
<tr>
<td>Chemistry Electives</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 credits of CHEM designated courses (p. 1367)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select 6 credits of courses in chemistry or related fields, approved by the graduate committee prior to registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seminar</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CHEM 790</td>
<td>Graduate Seminar</td>
<td></td>
</tr>
<tr>
<td>Thesis or Non Thesis</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Select the Thesis Option or the Non Thesis Option</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

Thesis Option

The Thesis Option is designed for students planning to pursue a doctoral degree or a career involving research in the chemical, biochemical, environmental, or pharmaceutical industries.

Students must choose a research laboratory advisor during their first semester in the program and begin working on their thesis project no later than the second semester. The thesis is based on research that must be preapproved by the thesis or advisory committee, which is appointed prior to the first semester of registration in CHEM 799 Master’s Thesis. Students must complete CHEM 799 Master’s Thesis and present a seminar, followed by an oral defense.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis Option</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>CHEM 799</td>
<td>Master’s Thesis</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Non Thesis Option

The Non Thesis Option is designed for those seeking to go on to professional school, teach chemistry in secondary schools, or pursue other careers in which advanced work in chemistry is necessary or advantageous.

Students selecting this option are not required to complete a laboratory-based thesis. Instead, they must complete a research project or gain teaching experience in undergraduate chemistry labs, as described below.

Any combination of CHEM 670 Teaching Practicum and CHEM 796 Directed Reading and Research may be used to fulfill this requirement. However, CHEM 796 Directed Reading and Research may only be used to fulfill this requirement with prior written approval of the department and must be used to complete a laboratory or library-based research project, or must otherwise enhance the student’s teaching skills.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Thesis Option</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select 3 credits of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 670</td>
<td>Teaching Practicum</td>
<td></td>
</tr>
<tr>
<td>CHEM 796</td>
<td>Directed Reading and Research</td>
<td></td>
</tr>
<tr>
<td>Additional Chemistry Electives</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select 3 credits of CHEM designated courses (p. 1367)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

MS with Concentration in Biochemistry (BC)

Students who wish to pursue an optional concentration in biochemistry complete the core courses above, the following requirements, and choose either Thesis Option or the Non Thesis Option:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis or Non Thesis</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Select the Thesis Option or the Non Thesis Option</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Core Course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CHEM 633</td>
<td>Chemical Thermodynamics and Kinetics</td>
<td></td>
</tr>
<tr>
<td>Chemistry Electives</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select 3 credits of CHEM designated courses (p. 1367)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seminar</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CHEM 790</td>
<td>Graduate Seminar</td>
<td></td>
</tr>
<tr>
<td>Thesis or Non Thesis</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>
Select the Thesis Option or the Non Thesis Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Thesis Option</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Thesis Option is designed for students planning to pursue a doctoral degree or a career involving research in the chemical, biochemical, environmental, or pharmaceutical industries.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Students must choose a research laboratory advisor during their first semester in the program and begin working on their thesis project no later than the second semester. The thesis is based on research that must be preapproved by the thesis or advisory committee, which is appointed prior to the first semester of registration in CHEM 799 Master’s Thesis. Students must complete CHEM 799 Master’s Thesis and present a seminar, followed by an oral defense.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Non Thesis Option</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Non Thesis Option is designed for those seeking to go on to professional school, teach chemistry in secondary schools, or pursue other careers in which advanced work in chemistry is necessary or advantageous. Students selecting this option are not required to complete a laboratory-based thesis. Instead, they must complete a research project or gain teaching experience in undergraduate chemistry labs, as described below.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any combination of CHEM 670 Teaching Practicum and CHEM 796 Directed Reading and Research may be used to fulfill this requirement. However, CHEM 796 Directed Reading and Research may only be used to fulfill this requirement with prior written approval of the department and must be used to complete a laboratory or library-based research project, or must otherwise enhance the student's teaching skills.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Biochemistry Electives</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select 6 credits of electives in biochemistry or related fields with approval from the department</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Thesis</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 799 Master’s Thesis</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Non Thesis Option</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select 3 credits of the following:</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CHEM 670 Teaching Practicum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 796 Directed Reading and Research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biochemistry Electives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electives in biochemistry or related fields with approval from the department</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

### Accelerated Option Requirements

At the beginning of the student’s final undergraduate semester, students must submit a bachelor’s/accelerated master’s transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science’s Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master’s program in the semester immediately following conferral of the bachelor’s degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals within the chemistry and biochemistry concentrations.

### Reserve Graduate Credit

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

### Chemistry and Biochemistry, PhD

**Banner Code:** SC-PHD-CBCM

**Academic Advising**

- Email: chemistry@gmu.edu
- Website: cbgrad.gmu.edu/aboutthephd.pdf

The program is intended to prepare students for advanced work in the chemical sciences and related areas. Graduates with the PhD in this field can seek employment in research and development, process control, or higher education. In addition to these traditional science career paths, graduates are also positioned to pursue careers in non-traditional areas such as the intellectual property and regulatory fields. The program is designed to provide students with a firm foundation in advanced coursework, which is followed by an independent research project...
completed under the guidance of a faculty advisor. The culmination of the program is a dissertation representing original research that is publishable in a peer-reviewed scientific journal.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

The program is intended for students who have completed an undergraduate program of study in chemistry, biochemistry, or a related field. Applicants are expected to have a BS degree with a minimum GPA of 3.00, and acceptable GRE and TOEFL scores (if applicable). The GRE requirement is waived for students with a master's degree from a regionally accredited US institution.

Applicants with a BS degree in other fields of study who have at least three years of chemistry or biochemistry coursework may be accepted provisionally and may be required to successfully complete selected remedial courses, some of which may not be applicable toward the PhD requirements. Interested students should submit a completed application, three letters of reference, official reports of GRE and TOEFL scores, and a personal/goals statement outlining their general research interests and career plans.

**Policies**

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

**Academic Advising**

Upon acceptance into the Chemistry and Biochemistry, PhD, a student will be assigned an academic advisor. Prior to registering for classes, students are required to meet with their academic advisor who will provide guidance in selecting courses that are consistent with the student's area of interest. Once a student has selected a research/dissertation advisor, that person then assumes the role of providing academic advisement to the student.

**Reduction of Credits**

For students entering the doctoral program with a master's degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the associate dean for student affairs. See AP6.5.2 Reduction of Credits (p. 91) for more information.

**Requirements**

**Degree Requirements**

Total credits: 72

Students should refer to the Admissions & Policies (p. 675) tab for specific policies related to this program.

**Doctoral Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 817</td>
<td>Organic Structural Spectroscopy</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 833</td>
<td>Physical Chemistry and Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>Seminar</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CHEM 790</td>
<td>Graduate Seminar (taken three times)</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

Select 39 credits of approved elective courses in consultation with the student's advisor

Total Credits 48

**Dissertation Committee and Supervisor**

By the end of the first year, a student in the program is expected to have selected a dissertation/research supervisor and to have formed the dissertation committee. This committee will consist of at least four graduate faculty members (including the dissertation supervisor), with at least two members from the Department of Chemistry and Biochemistry. At least one member must be from outside the department. Qualified individuals who are not members of the graduate faculty, including faculty at other universities or government laboratories, may serve on the committee with the approval of the department chair and the college's associate dean.

**Candidacy Examinations**

The student must successfully complete separate written and oral candidacy examinations prepared and administered by the dissertation committee. All six sections (analytical, biochemistry, environmental, inorganic, organic, and physical chemistry) of the written candidacy examinations will be offered twice a year, typically during the week prior to the start of the fall and spring semesters. A student, in consultation with the approval of the research director, will schedule exams at least 30 days prior to the examination date. Grades of “High Pass”, “Pass”, or “Unsatisfactory” will be awarded for each of the exams. If a student receives a grade of “Unsatisfactory” in a given section of the exam, he/she will be allowed to retake that section of the exam during the next exam cycle. A student must satisfactorily pass all sections of the exam by the end of the third year from the date of enrollment in the PhD program.

**Dissertation Proposal and Advancement to Candidacy**

Prior to completing the sixth semester in the program, a student is expected to have advanced to candidacy. The student’s committee will determine whether a candidate is ready to begin preparation of the research proposal and approve enrollment in CHEM 998 Doctoral Dissertation Proposal based upon their familiarity with the student’s progress.

In order to advance to candidacy, a student is required to fulfill the following requirements:

- The student will prepare and submit a research proposal (based on the thesis research) for approval by the dissertation committee.
- The student must pass a written qualifying exam prepared by the dissertation committee. The exam can be based on the student’s research and/or completed coursework, with the composition of the exam being determined by the student’s dissertation committee.
• The final stage is an oral defense of the student’s research proposal. Questions at the proposal defense may also be drawn from material covered in the written qualifying exam.

Dissertation Research

No more than 24 combined credits from CHEM 998 Doctoral Dissertation Proposal and CHEM 999 Doctoral Dissertation Research may be applied toward satisfying doctoral degree requirements, with no more than 12 credits of CHEM 998 Doctoral Dissertation Proposal.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 998</td>
<td>Doctoral Dissertation Proposal (maximum of 12 credits)</td>
<td>12</td>
</tr>
<tr>
<td>CHEM 999</td>
<td>Doctoral Dissertation Research</td>
<td>12</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Exit Seminar

Each PhD candidate presents his or her research in a seminar in the Department of Chemistry and Biochemistry (a departmental seminar), which takes place in the same semester as the final defense of the dissertation (below).

Dissertation Research and Defense

With the approval of the dissertation committee, the student will enroll in CHEM 998 Doctoral Dissertation Proposal and CHEM 999 Doctoral Dissertation Research. The dissertation research should represent a significant contribution to the appropriate scientific field(s), and it should be deemed to represent a body of work that is publishable in a refereed scientific journal. The dissertation must be presented and defended in a public forum consisting of the dissertation committee and other interested members of the George Mason University community.

Department of Computational and Data Sciences

Karen Underwood, Academic Programs Administrator

Phone: 703-993-9298
Email: cds@gmu.edu
Website: cds.gmu.edu

Administration

• Jason Kinser, Chair
• Eduardo Lopez, Graduate Coordinator CSI, COMP, Data Science Certificate
• Andrew Crooks, Graduate Coordinator CSS
• Joseph Marr, Undergraduate Coordinator

The mission of the Department of Computational and Data Sciences (CDS) is comprised of two objectives:

The first is the systematic development and application of computational techniques for modeling and simulation of scientific and social phenomena or social processes.

The second objective is the systematic development and application of techniques for mining, managing, and analyzing large sets of data.

The resulting interdisciplinary approach leads to understanding, interpretation, and prediction of phenomena that traditional theory or experiment cannot provide alone. CDS’s mission aims toward excellence in faculty and graduate student state-of-the-art research activities, as well as providing modern approaches to student education at both the graduate and undergraduate levels. The educational and research directions pursued in CDS are focused to reflect the interests of neighboring federal laboratories, scientific institutions, and high-technology firms to provide the students opportunities for continued or new employment. Graduate courses are also designed to accommodate part-time students, with most courses meeting once a week in the late afternoon or early evening.

The research and teaching activities associated with CDS’s programs are a reflection of the present central role of computation in the arenas of “big data” and of modeling and simulation.

Undergraduate Programs

This department offers the Computational and Data Sciences, BS (p. 684) and the Computational and Data Sciences Minor (p. 686). An accelerated master’s option is also available for undergraduate students interested in the Computational Science, MS (p. 677).

Many opportunities exist for undergraduate students to get involved with research. Students should consult with faculty working on research topics of interest to them based on their exploration of the departmental website.

Graduate Programs

This department offers the Data Science Graduate Certificate (p. 686), the Computational Social Science Graduate Certificate (p. 681), the Computational Science, MS (p. 677), the Computational Sciences and Informatics, PhD (p. 679), and the Computational Social Science, PhD (p. 682). An accelerated master’s option is also available for undergraduate students interested in the Computational Science, MS (p. 677). The department also supports the Computational Social Science Concentration in the Interdisciplinary Studies, MAIS (p. 542). These graduate programs are strongly supported by the extensive research activities of the faculty, including their collaborations with scientists and engineers at regional government laboratories.

Faculty

Department Faculty

Professors
Blaisten-Barojas, Cioffi-Revilla

Associate Professors
Crooks, Kennedy, Kinser, Marr

Assistant Professors
Eagle, Glasbrenner, Lopez, Lyver, Tian

Affiliated Faculty
Dade, Griva, Klimov, Tryfona

Emeritus Professor
Papconstantopoulos
Adjunct Faculty
Ken Comer, Kevin Comer, Cruz, Miller, Patrick, Romanelli, Scott, Shaheen, Sponseller, Verma, Watson

Programs

• Computational Science, MS
• Computational Sciences and Informatics, PhD
• Computational Social Science Graduate Certificate
• Computational Social Science, PhD
• Computational and Data Sciences Minor
• Computational and Data Sciences, BS
• Data Science Graduate Certificate
• Government Analytics Minor (COS)

The Department of Computational and Data Sciences also supports the Computational Social Science Concentration in the Interdisciplinary Studies, MAIS (p. 542).

Computational Science, MS
Banner Code: SC-MS-COMP

Eduardo Lopez, Graduate Coordinator
221 Research Hall
Fairfax Campus
Phone: 703-993-5916
Email: elopez22@gmu.edu
Website: cos.gmu.edu/cds/ms-in-computational-science/

The Master of Science in Computational Science addresses the growing demand for trained computational scientists and engineers, and data scientists. It combines a solid foundation in computational science skills with courses in a variety of scientific and engineering computer-intensive areas where modeling and simulation, data analysis, and high performance computing play a central role.

Working with an advisor, a student may choose to pursue an area of emphasis. The areas of emphasis are:

• Computer Modeling and Simulation: Intended for students who wish to learn computational solution techniques for modeling and simulation of scientific and engineering phenomena.
• Data Science: Intended for students who wish to learn computational methods for acquiring, extracting, and analyzing large-scale data obtained by observations, experiments, modeling, and database searches.

Students may also combine areas of emphasis to create their own customized curriculum under the guidance of the graduate coordinator.

Most of the courses are offered in the late afternoon or early evening to accommodate students with full-time employment outside of the university.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admissions Policies (p. 68) section of this catalog. Applicants to the Computational Science, MS should have academic backgrounds in the following appropriate fields: physical or biological sciences, engineering, mathematics, or computer science. They should have an undergraduate degree from a regionally accredited institution with a GPA of at least 3.00 in their last 60 credits of study. In addition, applicants should have taken at least one course in differential equations and have facility in using a high-level computer programming language.

Application Requirements

To apply, prospective students should complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), supply two copies of official transcripts from each university attended, a current résumé, and an expanded goals statement. Applicants should also provide two letters of recommendation and an official report of scores on the GRE-GEN. The GRE-SUB is recommended if it is given in the student’s undergraduate major. The GRE requirement will be waived if the student holds a bachelor’s or a master’s degree from a regionally accredited U.S. institution in the appropriate fields listed above. Acceptable TOEFL scores (as determined by university policy) are required of all international applicants; for more information visit Admission of International Students (p. 71). The ETS code for Mason is 5827.

Policies

For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Requirements

Degree Requirements

Total credits: 30

Students should refer to the Admissions & Policies (p. 677) tab for specific policies related to this program.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 690</td>
<td>Numerical Methods</td>
<td></td>
</tr>
<tr>
<td>CSI 695</td>
<td>Scientific Databases</td>
<td></td>
</tr>
<tr>
<td>CSI 702</td>
<td>High-Performance Computing</td>
<td></td>
</tr>
</tbody>
</table>
CSI 703  Scientific and Statistical Visualization

Total Credits  6

### Computational Extended Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS (p. 1453)</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>CSI (p. 1436)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSS (p. 1449)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits  15

1 Not including the following research courses: CSI 796 Directed Reading and Research, CSI 798 Research Project, CSI 799 Master's Thesis, CDS 998 Research Colloquium in Computational Sciences and Informatics, CDS 899 Colloquium in Computational and Data Sciences, CSI 991 Seminar in Scientific Computing, CSI 996 Doctoral Reading and Research, or from courses previously taken.

### Electives

Select 9 credits of electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS</td>
<td>Modeling and Simulation I</td>
<td>3</td>
</tr>
<tr>
<td>CDS 205</td>
<td>Introduction to Agent-based Modeling and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>CDS 251</td>
<td>Introduction to Scientific Programming</td>
<td></td>
</tr>
<tr>
<td>CDS 301</td>
<td>Scientific Information and Data Visualization</td>
<td>3</td>
</tr>
<tr>
<td>CDS 302</td>
<td>Scientific Data and Databases</td>
<td>3</td>
</tr>
<tr>
<td>CDS 303</td>
<td>Scientific Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>CDS 411</td>
<td>Modeling and Simulation II</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CDS 461</td>
<td>Molecular Dynamics and Monte Carlo Simulations</td>
<td></td>
</tr>
<tr>
<td>CDS 490</td>
<td>Directed Study and Research</td>
<td></td>
</tr>
<tr>
<td>CSI 500</td>
<td>Computational Science Tools</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits  21

1 Typically chosen from computational sciences and informatics (p. 1436), chemistry (p. 1367), mathematics (p. 1923), physics (p. 2055), engineering (p. 1016), information technology (p. 1850), and statistics courses (p. 2220).

2 Students should create a curriculum plan for an area of emphasis or combined areas of emphases in consultation with their academic advisor.

3 No more than 6 credits may be chosen from areas outside of CSI.

Elective credits may also include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 796</td>
<td>Directed Reading and Research</td>
<td>1-6</td>
</tr>
<tr>
<td>CSI 798</td>
<td>Research Project</td>
<td>1-3</td>
</tr>
<tr>
<td>CSI 799</td>
<td>Master's Thesis</td>
<td>1-6</td>
</tr>
</tbody>
</table>

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

### Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Application information for this Accelerated Master's program can be found on the Department of Computational and Data Sciences (http://cos.gmu.edu/cds-academic-programs) website. Applicants must have an overall undergraduate GPA of at least 3.00 and have completed at least 90 credits. Additionally, applicants will have completed the following courses with a GPA of 3.00 or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 230</td>
<td>Modeling and Simulation I</td>
<td>3</td>
</tr>
<tr>
<td>CDS 205</td>
<td>Introduction to Agent-based Modeling and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>CDS 251</td>
<td>Introduction to Scientific Programming</td>
<td></td>
</tr>
<tr>
<td>CDS 301</td>
<td>Scientific Information and Data Visualization</td>
<td>3</td>
</tr>
<tr>
<td>CDS 302</td>
<td>Scientific Data and Databases</td>
<td>3</td>
</tr>
<tr>
<td>CDS 303</td>
<td>Scientific Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>CDS 411</td>
<td>Modeling and Simulation II</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CDS 461</td>
<td>Molecular Dynamics and Monte Carlo Simulations</td>
<td></td>
</tr>
<tr>
<td>CDS 490</td>
<td>Directed Study and Research</td>
<td></td>
</tr>
<tr>
<td>CSI 500</td>
<td>Computational Science Tools</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits  21

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals within the modeling and simulation or data science emphases of the Computational Science, MS (p. 677).

Gre-general scores are waived for graduates of BS degrees from any program in the College of Science or the Volgenau School of Engineering at George Mason University.

### Reserve Graduate Credit

While in undergraduate status, a student may take a maximum of six graduate credits as reserve graduate credits and apply those credits to a master's program. Reserve graduate credits are not counted toward the 120 credits required in the undergraduate degree.

### Mechanical Engineering, BS/

Computational Science, Accelerated MS

**Overview**

This option enables enthusiastic, highly qualified, undergraduates to obtain the Mechanical Engineering, BS (https://catalog.gmu.edu/colleges-schools/engineering/mechanical/mechanical-engineering-bs) and the Computational Science, MS (p. 677) within the accelerated time frame of five years. The program requires 144 credits total, allowing students to undertake graduate coursework during their final year in the bachelor's degree. Upon completion of this 144 credit BS/MS combined program, students are exceptionally well prepared for undertaking doctoral studies or entering the professional workforce.
program, students are exceptionally well prepared for undertaking doctoral studies or entering the professional workforce.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Application information for this Accelerated Master’s program can be found on the Department of Computational and Data Sciences (http://cos.gmu.edu/cds/academic-programs) website. Applicants must have an overall undergraduate GPA of at least 3.00 and have completed at least 90 credits. Additionally, applicants will have completed the following courses with a GPA of 3.00 or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>ME 212</td>
<td>Solid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 231</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 313</td>
<td>Material Science</td>
<td>3</td>
</tr>
<tr>
<td>ME 322</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 323</td>
<td>Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 351</td>
<td>Analytical Methods in Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals within the modeling and simulation or data science emphases of the Computational Science, MS (p. 677).

GRE-general scores are waived for graduates of BS degrees from any program in the College of Science or the Volgenau School of Engineering at George Mason University.

Reserve Graduate Credit
While in undergraduate status, a student may take a maximum of six graduate credits as reserve graduate credits and apply those credits to a master’s program. Reserve graduate credits are not counted toward the 120 credits required in the undergraduate degree.

Computational Sciences and Informatics, PhD
Banner Code: SC-PHD-CSI

Eduardo Lopez
221 Research Hall
Fairfax Campus
Phone: 703-993-5916
Email: elope22@gmu.edu
Website: cos.gmu.edu/cds/phd-in-computational-sciences-and-informatics/

Founded in 1992, the program addresses the role of computation in science, mathematics, and engineering, and is designed around the emphases of Computer Modeling and Simulation and of Data Science. Computational science, focused on modeling and simulation, is defined as the systematic development and application of computing systems and computational solution techniques for modeling and simulation of scientific and engineering phenomena. Informatics, focused on data science, is defined as the systematic development and application of computing systems and computational solution techniques for analyzing data obtained through experiments, modeling, database searches, and instrumentation. The resulting interdisciplinary approach leads to an understanding that traditional theory or experimentation alone cannot provide. The close relationship of the PhD to the research and development activities in federal laboratories, scientific institutions, and high-technology firms affords students opportunities for continued or new employment. Scheduled courses and sequences accommodate part-time students, with most courses meeting once a week in the late afternoon or early evening. The research and teaching activities associated with the program reflect the recognized role of computation and data analysis as part of a triad with theory and experiment, leading to a better understanding of nature. The program is designed to be completed in four to five years.

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility
Students interested in applying for admission should have a bachelor’s degree in computational science, any natural science, mathematics, engineering, or computer science with a minimum GPA of 3.00 in their last 60 credits of study. Applicants to the PhD program should have a mathematics background up to and including differential equations and should also have knowledge of a computer programming language such as C, C++, Fortran, Python, etc.

Application Requirements
The GRE is required, unless the applicant holds a master’s degree from a regionally-accredited school in the United States. An acceptable TOEFL score (as determined by the university) is required for international students; for more information visit the Admission of International Students (https://catalog.gmu.edu/admissions/international-students) section of the catalog. The ETS code for Mason is 5827.

Students should submit a completed George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now) along with three letters of recommendation, an expanded goals statement, and application fee in addition to the items listed above.

Application deadlines can be found on the Office of Admissions website (https://admissions.gmu.edu/grad/application-deadlines-and-requirements/?academicUnit=SC&ga=1.13682175.956654242.1443444993). Applications requesting financial support must be received by February 1.
for the fall semester. Applications from local applicants may be accepted after these general deadlines.

For additional information, please contact the CSI graduate coordinator.

Policies
For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Reduction of Credit
For students entering the doctoral program with a master's degree in a related field from a regionally accredited institution, the required coursework may be reduced up to 24 credits, subject to approval of the graduate coordinator and the college's associate dean. Research-based courses and seminar courses are not eligible for reduction.

Transfer of Credit
Students who have prior graduate coursework that has not been applied to any degree may request to have a maximum of 30 of those graduate credits transferred, with approval of the graduate coordinator, the college's associate dean, and in accord with university policy. Research-based courses and seminar courses are not eligible for transfer.

Requirements

Degree Requirements
Total: 72 credits

Students should refer to the Admissions & Policies (p. 679) tab for specific policies related to this program.

General Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two courses (6 credits) from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSI 690</td>
<td>Numerical Methods</td>
<td></td>
</tr>
<tr>
<td>CSI 695</td>
<td>Scientific Databases</td>
<td></td>
</tr>
<tr>
<td>CSI 702</td>
<td>High-Performance Computing</td>
<td></td>
</tr>
<tr>
<td>CSI 703</td>
<td>Scientific and Statistical Visualization</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Areas of Emphasis Courses
From the list below, students are advised to select six courses that correspond to areas of emphasis in:

- **Computer Modeling and Simulation:** Including applications to the natural sciences
- **Data Science:** Including computational learning, statistics, and data analytics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select six courses (18 credits) from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSI 500</td>
<td>Computational Science Tools</td>
<td></td>
</tr>
<tr>
<td>CSI 501</td>
<td>Introduction to Scientific Programming</td>
<td></td>
</tr>
<tr>
<td>CSI 672</td>
<td>Statistical Inference</td>
<td></td>
</tr>
<tr>
<td>CSI 674</td>
<td>Bayesian Inference and Decision Theory</td>
<td></td>
</tr>
<tr>
<td>CSI 676</td>
<td>Regression Analysis</td>
<td></td>
</tr>
<tr>
<td>CSI 678</td>
<td>Times Series Analysis and Forecasting</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

1 When choosing courses, avoid courses previously taken to fulfill the 'General Core Courses' requirement and only choose one 500-level course.

Colloquium/Seminar
The department offers weekly colloquia and seminar series to ensure that students are exposed to the latest developments at area research institutions. One credit may be chosen from:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 898</td>
<td>Research Colloquium in Computational Sciences and Informatics</td>
<td>1</td>
</tr>
<tr>
<td>or CSI 991</td>
<td>Seminar in Scientific Computing</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Electives
Electives should be chosen to bring the total number of credits to 72. Courses must be approved by the student’s advisor and the graduate coordinator. Additionally:

- A maximum of 2 credits of CSI 898 Research Colloquium in Computational Sciences and Informatics and/or CSI 991 Seminar in Scientific Computing may be applied as electives.
- A maximum of two 500-level courses may be applied between both the ‘Areas of Emphasis Courses’ requirement and the ‘Electives’ requirement.
- CSI 796 Directed Reading and Research and CSI 996 Doctoral Reading and Research are the only allowable research-based courses that can be used as electives.
- The following courses may not be used as electives: CSI 798 Research Project, CSI 799 Master’s Thesis, CSI 998 Doctoral Dissertation Proposal, and CSI 999 Doctoral Dissertation.
- Students may pursue interdisciplinary research that supplements the ‘Areas of Emphasis Courses’ and ‘Electives’ requirements with each other and also with bioinformatics, climate dynamics, computational chemistry, computational social science, geoinformation sciences, and several other autonomous PhD program areas within the College of Science.

Doctoral Research
No more than 24 combined credits from CSI 998 Doctoral Dissertation Proposal and CSI 999 Doctoral Dissertation may be applied toward satisfying doctoral degree requirements, with a minimum of 6 credits of CSI 999 Doctoral Dissertation.

Students become eligible to register for CSI 998 Doctoral Dissertation Proposal upon having an approved dissertation committee. Upon advancement to candidacy, students will be eligible to register for CSI 999 Doctoral Dissertation.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select</td>
<td>24 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>CSI 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>24</td>
</tr>
<tr>
<td>CSI 999</td>
<td>Doctoral Dissertation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 24

Candidacy Examination
The student must successfully complete separate written, computational, and oral candidacy examinations prepared and administered by the student’s dissertation committee.

Dissertation Proposal and Advancement to Candidacy
Students advance to doctoral candidacy by fulfilling the following requirements:

- The student must successfully complete all coursework and candidacy examinations as stated above.
- The student prepares a dissertation proposal describing in detail the planned dissertation research. The proposal must be approved by the dissertation committee.
- Following successful completion of the research proposal and candidacy exams, the committee will recommend the student for advancement to doctoral candidacy to the graduate coordinator and the college’s associate dean.

Dissertation Research and Defense
After advancing to candidacy, the student will work on a doctoral dissertation while enrolled in CSI 999 Doctoral Dissertation. The dissertation is a written piece of original contribution that demonstrates a doctoral candidate’s mastery of the subject matter. A student is expected to produce new and original research worthy of publication in peer-reviewed journals. After the dissertation is completed, the committee will review the dissertation and examine the student in a public oral dissertation defense.

Computational Social Science Graduate Certificate
Banner Code: SC-CERG-CSS
Karen Underwood, Academic Programs Administrator
373 Research Hall
Fairfax Campus
Phone: 703-993-9298
Email: cssgrad@gmu.edu
Website: cos.gmu.edu/cds/graduate-certificate-in-computational-social-science/

This program is designed for students who seek training in computer simulation and related computational methods for analyzing social systems and processes. The program is open to all students with graduate standing at George Mason University and all students who hold a bachelor’s degree from a regionally accredited university. The Computational Social Science (CSS) certificate allows students with social science or computational backgrounds to acquire new knowledge and modeling skills to improve their qualifications and attractiveness to employers in government, academia, or industry. The core courses provide a common foundation; additional elective courses allow for a variety of student interests across diverse social domains.

This graduate certificate may be pursued on a part-time or full-time basis.

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants should have an undergraduate degree from a regionally accredited institution with a GPA of at least 3.00. To apply, prospective students should forward a completed George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), one copy of official transcripts from each college and graduate institution attended, and a current résumé. TOEFL scores are required of all international applicants. International applicants should see information regarding the admission of international students (p. 71).

Students intending to obtain the CSS certificate must apply to the CSS certificate program before beginning any CSS coursework intended...
to satisfy requirements. They must also have their coursework plan approved by the director.

**Policies**

For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Requirements**

**Certificate Requirements**

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Students should refer to the Admissions & Policies (p. 681) tab for specific policies related to this program.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS 600</td>
<td>Introduction to Computational Social Science</td>
<td>3</td>
</tr>
<tr>
<td>CSS 610</td>
<td>Agent-based Modeling and Simulation</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nine credits of electives, selected from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSS 605</td>
<td>Object-Oriented Modeling in Social Science</td>
<td>1</td>
</tr>
<tr>
<td>CSS 620</td>
<td>Origins of Social Complexity</td>
<td>1</td>
</tr>
<tr>
<td>CSS 692</td>
<td>Social Network Analysis</td>
<td>1</td>
</tr>
<tr>
<td>Other graduate courses in the fields of computational social science, social science, computer science, statistics, and other quantitative methods such as data visualization, information technology, and geographic information science.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

1 These courses should be selected in conjunction with, and approved by, the student’s advisor. Students may include a maximum of 3 credits of programming courses to meet the elective requirements. Procedural, object-oriented languages, or other approved programming approaches may be used with permission of the director. Some courses on computational techniques, modeling, or statistics, such as visualization, graphics, and statistical and database packages may also be used to meet the requirements with prior approval of the director.

**Computational Social Science, PhD**

**Banner Code:** SC-PHD-CSS

Karen Underwood, Academic Programs Administrator

373 Research Hall
Fairfax Campus

Phone: 703-993-9298
Email: cssgrad@gmu.edu

Website: cos.gmu.edu/cds/phd-in-computational-social-science/

The core objective of the program is to train graduate students to be professional computational social scientists in academia, government, or business. The program offers a unique and innovative interdisciplinary academic environment for systematically exploring, discovering, and developing skills to successfully follow careers in one of the areas of computational social science.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Eligibility**

Applicants should have as background a bachelor’s degree in one of the social sciences; computer science, engineering, or a relevant discipline; and undergraduate courses in these and related areas. Bachelor’s degrees in the physical or biological sciences are also eligible, but applicants may be advised to take additional courses in social science or computer science as prerequisites to admission. Minimal requirements also include one undergraduate course in calculus and knowledge of a computer programming language, preferably object-based.

**Application Requirements**

Applicants should have an undergraduate degree from a regionally-accredited institution, with a GPA of at least 3.25. To apply, prospective students should complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), copies of official transcripts from each college and graduate institution attended, a current résumé, an expanded goals statement not to exceed 2,000 words, and the names of two Mason faculty members who may be suitable advisors. Applicants should also include three letters of recommendation from faculty members or individuals with direct knowledge of the student’s academic or professional capabilities. The letters must arrive directly from the senders. Applicants should also submit an official report of scores obtained on the GRE-GEN. TOEFL scores are required for all international applicants.

**Policies**

For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Reduction of Credit**

Students entering the doctoral program with a master’s degree in a related discipline may request that the required credits for the doctoral degree be reduced by a maximum of 30 credits with approval of the director of graduate studies and the associate dean and in accordance with university policy. More information can be found in AP 6.5.2 Reduction of Credits (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-5-2).
Transfer of Credit
Students who have prior graduate coursework that has not been applied to another degree may request to have a maximum of 24 of these graduate credits transferred, with approval of the director of graduate studies and the associate dean and in accord with university policy. More information can be found in AP 6.5.3 Transfer of Credit (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-5-3).

Academic Advising
During the first year, each student will form a graduate studies committee, called the first-year committee, consisting of the student’s advisor plus two or three appropriately qualified individuals. The committee assists the student in designing a specific plan of study and evaluating the student’s progress by the end of the first year. During the second year, the student forms a doctoral committee, with membership approved by the CSS program director. The committee will advise the student on preparing for the doctoral candidacy exams and preparing, developing, and defending the doctoral dissertation.

Requirements

Degree Requirements
Total credits: 72
Students should refer to the Admissions & Policies (p. 682) tab for specific policies related to this program.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS 600</td>
<td>Introduction to Computational Social Science</td>
<td>3</td>
</tr>
<tr>
<td>CSS 605</td>
<td>Object-Oriented Modeling in Social Science</td>
<td>3</td>
</tr>
<tr>
<td>CSS 610</td>
<td>Agent-based Modeling and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>CSS 620</td>
<td>Origins of Social Complexity</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Extended Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
 Select 6 credits from the following: 6
| CSS 625 | Complexity Theory in the Social Sciences |         |
| CSS 645 | Spatial Agent-Based Models of Human-Environment Interactions | |
| CSS 692 | Social Network Analysis                  |         |

Total Credits 6

Discipline-based Courses

Select 15 credits of discipline-based social science courses in a specific area such as anthropology, economics, geography, history, linguistics, political science, or sociology, as approved by the student’s advisor, to provide domain-specific knowledge.

Total Credits 15

Electives

Select 15 credits of electives or independent research, as approved by the student’s advisor, to provide further substantive or methodological specialization as needed.

Total Credits 15

Students with a strong background in computing, for example, a prior MS in computer science, but weaker social science training will be required to use all or most of these electives in a substantive social science. Conversely, students with a strong background in social science, for example, a BS in economics, will be required to use most or all of these electives in computing courses.

Candidacy Examination
The candidacy exam is taken after students have completed all core requirements and a majority of additional coursework (18 plus 15 credits), which typically corresponds to the fifth semester in the program. The purpose of the candidacy exam is to assess the student’s substantive and methodological knowledge in CSS as a whole and in the chosen focus area, the ability to integrate materials from different courses, and the potential for a successful dissertation. The exam consists of written and oral parts.

Dissertation Proposal
Upon passing the candidacy examination, each student shall prepare and, within a year, defend a dissertation proposal, written in the form of an extramural research grant proposal. The student shall develop the dissertation proposal in consultation with the dissertation committee. With successful defense of the proposal, a student becomes a PhD candidate.

Dissertation Research
Dissertation research credits are required in order to demonstrate doctoral-level originality and research excellence:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
 Select 24 credits from the following: 24
| CSS 998 | Doctoral Dissertation Proposal  |         |
| CSS 999 | Doctoral Dissertation                  |         |

Total Credits 24

Example Dissertation Areas
Areas for dissertation research include, but are not limited to, the following:

- Agent-based computational economics: trade, finance, decision making under risk
-Computational political economy: voting, institutions, norms, inequality
-Computational linguistics: generative grammars, parsing, classifiers, inference
-Social network analysis: connectivity, structure, evolution of the Internet, social media, cyber warfare
-Computational anthropology: emergence of hierarchy, settlement patterns
-Computational political science: systems of government, conflict and war, cooperation
-Computational sociology: segregation, collective action, leadership, trust
• Complexity theory: power laws, potential theory, criticality, bifurcation
• Computational methodology: multiagent systems, evolutionary computation
• Agent-based computational geography: land use change, humanitarian assistance, urban modeling

**Doctoral Dissertation Defense**
The PhD dissertation is the detailed written report of an original and significant research contribution to computational social science. It is defended before the dissertation committee in a forum open to fellow students and interested faculty and staff. The dissertation committee recommends that the graduate faculty of George Mason University accept the student candidate for the PhD degree upon a successful defense and completion of any final revisions.

**Computational and Data Sciences, BS**

**Banner Code:** SC-BS-CDS

**Joseph Marr, Undergraduate Coordinator**

225 Research Hall
Fairfax Campus

Phone: 703-993-5017
Email: jmarr2@gmu.edu
Website: cos.gmu.edu/cds/bs-in-computational-and-data-sciences/

The aim of this degree is to provide students with technical skills and knowledge for rigorously investigating physical and social phenomena. The BS is a transformative approach that integrates science at George Mason University based on the combination of real-world computer science skills, data acquisition and analysis, scientific modeling, applied mathematics, and simulation. As an interdisciplinary STEM-designated program, this degree addresses the current central role of computation in the areas of "big data," modeling, and simulation. Graduates of the program will possess the computational, scientific, and mathematical skills necessary for participating effectively as members of the scientific simulation and data analysis groups that are of increasing importance in the federal and public sectors, and in high technology firms. Additionally, graduates of the program will be well prepared to pursue graduate studies.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

Students must fulfill all Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142).

The university’s writing intensive requirement for the major will be met upon successful completion of CDS 302 Scientific Data and Databases.

For policies governing all undergraduate programs, see AP 5 Undergraduate Policies (p. 87).

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 684) tab for specific policies related to this program.

**Core Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CDS 151</td>
<td>Data Ethics in an Information Society (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CDS 230</td>
<td>Modeling and Simulation I</td>
<td>3</td>
</tr>
<tr>
<td>CDS 301</td>
<td>Scientific Information and Data Visualization</td>
<td>3</td>
</tr>
<tr>
<td>CDS 302</td>
<td>Scientific Data and Databases</td>
<td>3</td>
</tr>
<tr>
<td>CDS 303</td>
<td>Scientific Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 16

1. Fulfills the writing intensive requirement.

**Extended Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 18 credits from the following:</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>CDS 101 &amp; CDS 102</td>
<td>Introduction to Computational and Data Sciences (Mason Core) (p. 142) and Introduction to Computational and Data Sciences Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CDS 201</td>
<td>Introduction to Computational Social Science</td>
<td></td>
</tr>
<tr>
<td>CDS 205</td>
<td>Introduction to Agent-based Modeling and Simulation</td>
<td></td>
</tr>
<tr>
<td>CDS 251</td>
<td>Introduction to Scientific Programming</td>
<td></td>
</tr>
<tr>
<td>CDS 290</td>
<td>Topics in Computational and Data Sciences</td>
<td></td>
</tr>
<tr>
<td>CDS 292</td>
<td>Introduction to Social Network Analysis (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CDS 403</td>
<td>Machine Learning Applications in Science</td>
<td></td>
</tr>
<tr>
<td>CDS 411</td>
<td>Modeling and Simulation II</td>
<td></td>
</tr>
<tr>
<td>CDS 486</td>
<td>Topics in Computational and Data Sciences</td>
<td></td>
</tr>
<tr>
<td>CSI 500</td>
<td>Computational Science Tools</td>
<td></td>
</tr>
<tr>
<td>CSI 501</td>
<td>Introduction to Scientific Programming</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 18

**Mathematics Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 10-11 credits from the following:</td>
<td></td>
<td>10-11</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>
MATH 114 Analytic Geometry and Calculus II  
MATH 125 Discrete Mathematics I (Mason Core) (p. 142)  
MATH 203 Linear Algebra  
MATH 446 Numerical Analysis I  

Total Credits 10-11

Statistics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits from the following:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>STAT 350</td>
<td>Introductory Statistics II</td>
<td></td>
</tr>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td></td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Science and Engineering Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits from either one of the following:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Additional Mason Core: Natural Science or Mason Core: Information Technology courses. (p. 143)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any course offered by the College of Science or the Volgenau School of Engineering.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires an additional 63-64 credits, which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

Elective Course Suggestions

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 410</td>
<td>Numerical Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 447</td>
<td>Numerical Analysis II</td>
<td></td>
</tr>
<tr>
<td>CDS 421</td>
<td>Computational Data Science</td>
<td>3</td>
</tr>
<tr>
<td>CDS 461</td>
<td>Molecular Dynamics and Monte Carlo Simulations</td>
<td>3</td>
</tr>
<tr>
<td>CDS 487</td>
<td>Electronic Structure Computations</td>
<td>3</td>
</tr>
<tr>
<td>CDS 490</td>
<td>Directed Study and Research</td>
<td>1-3</td>
</tr>
<tr>
<td>CDS 491</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>CDS 492</td>
<td>Capstone in Data Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Oral Communication (p. 142) 3  
Quantitative Reasoning (p. 143) 3  
Information Technology and Computing (p. 143) 3  

Exploration Requirements

Arts (p. 144) 3  
Global Understanding (p. 146) 3  
Literature (p. 147) 3  
Natural Science (p. 148) 7  
Social and Behavioral Sciences (p. 150) 3  
Western Civilization/World History (p. 151) 3  

Integration Requirements

Written Communications (ENGH 302) (p. 142) 3  
Writing-Intensive (p. 151) 3  
Synthesis/Capstone (p. 153) 3  

Total Credits 40

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2. Minimum 3 credits required.

Accelerated Master’s

Computational and Data Sciences, BS/Computational Science, Accelerated MS

Overview

This option enables enthusiastic, highly qualified, undergraduates to obtain the Computational and Data Sciences, BS (p. 684) and the Computational Science, MS (p. 677) within the accelerated time frame of five years. The program requires 144 credits total, allowing students to undertake graduate coursework during their final year in the bachelor's degree. Upon completion of this 144 credit BS/MS combined program, students are exceptionally well prepared for undertaking doctoral studies or entering the professional workforce.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Application information for this Accelerated Master’s program can be found on the Department of Computational and Data Sciences (http://cos.gmu.edu/cds/academic-programs) website.

Applicants must have an overall undergraduate GPA of at least 3.00 and have completed at least 90 credits. Additionally, applicants will have completed the following courses with a GPA of 3.00 or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 230</td>
<td>Modeling and Simulation I</td>
<td>3</td>
</tr>
<tr>
<td>CDS 205</td>
<td>Introduction to Agent-based Modeling and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>or CDS 251</td>
<td>Introduction to Scientific Programming</td>
<td></td>
</tr>
</tbody>
</table>
Computational and Data Sciences Minor

CDS 301 Scientific Information and Data Visualization 3
CDS 302 Scientific Data and Databases 3
CDS 303 Scientific Data Mining 3
CDS 411 Modeling and Simulation II 3
Select one from the following: 3
- CDS 461 Molecular Dynamics and Monte Carlo Simulations
- CDS 490 Directed Study and Research
- CSI 500 Computational Science Tools

Total Credits 21

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals within the modeling and simulation or data science emphases of the Computational Science, MS (p. 677).

Reserve Graduate Credit
While in undergraduate status, a student may take a maximum of six graduate credits as reserve graduate credits and apply those credits to a master’s program. Reserve graduate credits are not counted toward the 120 credits required in the undergraduate degree.

Admissions & Policies

Policies
At least 8 credits must be unique to this minor and may not be used to fulfill requirements of the student’s major, concentration, or another minor or undergraduate certificate. Students must complete at least 6 credits in their minor at George Mason and achieve a minimum GPA of 2.00 in courses applied to the minor.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15

Students should refer to the Admissions & Policies (p. 686) tab for specific policies related to this program.

Students should note that many of the required courses have prerequisites. Nonetheless, this minor is within efficient reach of most students majoring in science, mathematics, engineering, or computer science. It is very likely that students with these backgrounds will already have the prerequisites completed.

CDS Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 101</td>
<td>Introduction to Computational and Data Sciences (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

CDS or CSI Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 9 credits from any CDS or CSI courses</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

CDS (p. 1453)

CSI (p. 1436)

Total Credits 9

Upper-level Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 3 credits from any College of Science or Volgenau School of Engineering course at the 300 level or above</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

1 Other discipline-based courses may be permitted with permission of the undergraduate program director.

Data Science Graduate Certificate

Banner Code: SC-CERG-DSCI

Eduardo Lopez, Graduate Coordinator
221 Research Hall
Fairfax Campus
Phone: 703-993-5916

The minor provides an attractive option for students majoring in science, technology, engineering, or mathematics (STEM) who wish to augment their major degree program with additional courses in modeling, simulation, data science, and scientific computing. The combination of computer science, numerical methods, science, and computational and data sciences (CDS) synthesis courses will significantly enhance the practical knowledge and computational skills of the students when compared with the major field alone. Students will acquire the knowledge, skills, and techniques commonly used across scientific disciplines, which will allow them to apply their George Mason University education in a practical way in industrial, government, and academic settings. Computational and data sciences skills are highly sought after in today’s marketplace.

For additional information, please contact the CDS undergraduate coordinator/advisor.

1 GRE-general scores are waived for graduates of BS degrees from any program in the College of Science or the Volgenau School of Engineering at George Mason University.
This certificate program focuses on mastering a variety of basic computational skills to manage and analyze data. The certificate is designed primarily for professionals in technical fields who seek to upgrade their expertise in data science. This program is also available as an option for prospective or currently enrolled master’s degree students.

The coursework in this program provides an accelerated introduction to concepts in the modern analysis of data. Topics include computer packages, graphics, databases, data analytics, and their applications.

This certificate may be pursued on a part-time basis or full-time basis.

### Admissions & Policies

#### Admissions

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Applicants to this certificate should have an academic background in science, engineering, mathematics, or computer science. They should have an undergraduate degree from a regionally accredited institution, with a GPA of at least 3.00 in their last 60 credits of study. In addition, applicants should have facility in using a high-level computer programming language.

To apply, prospective students should complete the George Mason University Admissions Application, supply two copies of official transcripts from each college and graduate institution attended, and a current résumé. TOEFL scores are required for all international applicants.

#### Policies

For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

#### Requirements

### Certificate Requirements

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Students should refer to the Admissions & Policies (p. 687) tab for specific policies related to this program.

### Tools Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 500</td>
<td>Computational Science Tools</td>
<td>3</td>
</tr>
<tr>
<td>CSI 501</td>
<td>Introduction to Scientific Programming</td>
<td>3</td>
</tr>
<tr>
<td>CDS 501</td>
<td>Scientific Information and Data Visualization</td>
<td>3</td>
</tr>
<tr>
<td>CDS 502</td>
<td>Introduction to Scientific Data and Databases</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

### Applications Courses

The applications courses provide content from a specific scientific domain and demonstrate the utilization of techniques within its context.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 695</td>
<td>Scientific Databases</td>
<td>3</td>
</tr>
<tr>
<td>CSI 777</td>
<td>Principles of Knowledge Mining</td>
<td></td>
</tr>
<tr>
<td>CSS 692</td>
<td>Social Network Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

### Department of Environmental Science and Policy

Susan Cheselka

Phone: 703-993-1043
Email: scheselk@gmu.edu
Website: esp.gmu.edu

#### Administration

- A. Alonso Aguirre, Chair
- R. Chris Jones, Interim Graduate Director
- Joris L. van der Ham, Undergraduate and Graduate Coordinator

The research and development of multiple disciplines have contributed to remarkable gains in human and animal health, conservation and sustainability. However, dense human populations, unstable governments, habitat loss and fragmentation, over-exploitation of wild aquatic and terrestrial animals and plants, human-wildlife conflict, invasive species, biodiversity loss, emerging infectious diseases, environmental contaminants, and climate change have produced interacting challenges that call for broader-based and more integrated teaching, research and intervention. The Department of Environmental Science and Policy (ESP) at George Mason University believes that addressing these challenges requires diverse knowledge and expertise in natural science, social science, and public policy. Our faculty and programs reflect the need for a transdisciplinary approach to environmental science, policy and conservation.

In addition to faculty who are involved in cutting edge research, ESP has one of the largest graduate programs in the university conducting groundbreaking studies in the environmental field. The department also has increasing number of undergraduates conducting their own individual research projects or gaining experience by helping with established studies.

The proximity of George Mason to Washington, DC, gives ESP the unique opportunity to partner with governmental agencies, environmental and conservation groups and environmental-focused companies. Students can even be involved in practical study and training at the Smithsonian-Mason School of Conservation (http://smconservation.gmu.edu) (SMSC) and the Potomac Environmental Research Education Center (https://cos.gmu.edu/perec) (PEREC).

Research conducted in ESP ranges from terrestrial and marine mammal conservation to molecular and microbial ecology; from corporate
environmental management and policy to the environmental perceptions and practices of indigenous peoples.

**Faculty**

**Department Faculty**

**Professors**
Aguirre (chair), Ahn, Crate, D. Sklarew, Jones, Lovejoy, Talbot

**Associate Professors**
Kim, Largen, Peters, Smith

**Assistant Professors**
de Mutsert, Fowler, Gallo, Glaberman, Kennedy, Salerno, Valderrama, van der Ham

**Research Assistant Professors**
Ren, Spooner, Wensing

**Instructors**
Perilla

**Adjuncts**
Allen, Hartl, Prasad, Sample, J. Sklarew

**Emeritus Professors**
Bradley, Ernst, Jonas, Kelso, Shaffer, Skog, Torzilli

**Other Environmental Program Faculty**

**Professors**
Adelman, Chandhoke, Conant, Conlan, Cook, Dukes, Foster, Gerber, Gifford, Gillevet, Gusterson, Haack, Hart, Houck, Jacobsen, Lawrey, Maibach, Maxwell, Metcalf, Olds, Pawlowski, Peters, Posner, Qu, Regan, Rockwood, Rosenberger, Rowan, Seto, Storr, Stough, Taylor, Willett, Wingfield, Wong

**Associate Professors**

**Assistant Professors**
Akerlof, Forkner, Frankenfeld, Kysar-Mattietti, Lessard-Pilon, Luther, McNeil, Rice, Schoeny, Srikanthia, von Fricken

**Affiliate Faculty**

**Programs**

- Conservation Biology Minor
- Conservation Studies Minor (COS)
- Environmental Policy Minor
- Environmental Science Minor
- Environmental Science and Policy, MS
- Environmental Science and Public Policy, PhD
- Environmental Science, BS
- Environmental and Sustainability Management Graduate Certificate (pending SCHEV approval)
- Environmental and Sustainability Studies, BA (COS)
- Sustainability Studies Minor
- Sustainable Enterprise Minor

**Note:**
Department of Environmental Science and Policy also works closely with and provides administrative input to the Biology, BS (p. 648) Environmental and Conservation Biology Concentration (ESCB).

**Conservation Biology Minor**

**Banner Code:** CBIO

**Joris L. van der Ham, Undergraduate Advisor**

Email: jvanderh@gmu.edu
Website: esp.gmu.edu

This minor is intended for non-biology majors with an interest in wildlife and habitat conservation issues. The minor may particularly suit Environmental Science, BS (p. 690), Environmental and Sustainability Studies, BA (p. 706), and Earth Science, BS (p. 627) majors, as well as School of Integrative Studies (p. 574) students wishing to increase their understanding and qualifications in the field of conservation biology. The minor may also be of interest to non-science majors, for example, students taking leisure studies classes with an interest in ecotourism.

**Admissions & Policies**

**Policies**
Eight credits of coursework must be unique to the minor and not counted toward the student's major. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

For policies governing all undergraduate programs, see AP 5 Undergraduate Policies (p. 87).

**Requirements**

**Minor Requirements**

Total credits: 19

Students should refer to the Admissions & Policies (p. 688) tab for specific policies related to this program.

Students must complete the following courses with a minimum GPA of 2.00.

Many courses below have prerequisites that need to be met; see advisor for details.
Core Biology Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 310 &amp; BIOL 330</td>
<td>Biodiversity and Biodiversity Lab and Recitation</td>
<td>5</td>
</tr>
</tbody>
</table>

Select one from the following:

- EVPP 318 Conservation Biology
- BIOL 318 Conservation Biology
- INTS 401 Conservation Biology (Mason Core) (p. 142)

Total Credits: 3-6

3 of 6 credits count toward the minor Core Biology requirement. The remaining 3 credits may apply toward minor electives.

Electives

Select at least 6 credits from the following:

- EVPP 336 Human Dimensions of the Environment
- EVPP 361 Introduction to Environmental Policy
- EVPP 377 Applied Ecology
- EVPP 419 Marine Mammal Biology and Conservation
- EVPP 420 Marine Mammal Biology and Conservation Field Course
- EVPP 421 Marine Conservation
- EVPP 440 Field Environmental Science
- EVPP 490 Special Topics in Environmental Science and Policy
- INTS 401 Conservation Biology (Mason Core) (p. 142)

Total Credits: 3-6

Admissions & Policies

Admissions

The minor is available only to students who enroll in any of the Smithsonian Mason Semesters (https://smconservation.gmu.edu), semester-long residential programs held at the Smithsonian Conservation Biology Institute (https://nationalzoo.si.edu/conservation) in Front Royal, VA. The semesters are offered jointly by the College of Humanities and Social Sciences and the College of Science under the auspices of the Smithsonian-Mason School of Conservation (http://smconservation.gmu.edu).

This is a Green Leaf program (p. 107).

Policies

Eight credits of coursework must be unique to the minor and students pursuing this minor must complete one of the options with a minimum grade of 2.00 in each course. For policies governing all minors, see AP .5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 15-16

This is a Green Leaf program.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies tab.

Conservation, Biodiversity and Society Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 320</td>
<td>Conservation in Practice</td>
<td>3</td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td>3</td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td>4</td>
</tr>
<tr>
<td>CONS 410</td>
<td>Human Dimensions in Conservation (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONS 490</td>
<td>RS: Integrated Conservation Strategies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 16

Wildlife Ecology and Conservation Option (fall semester only)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 404</td>
<td>Biodiversity Monitoring</td>
<td>4</td>
</tr>
<tr>
<td>CONS 405</td>
<td>Landscape and Macrosystems Ecology</td>
<td>4</td>
</tr>
</tbody>
</table>
Environmental Policy Minor

Banner Code: EVP

Joris L. van der Ham, Undergraduate Coordinator

Email: jvanderh@gmu.edu
Website: esp.gmu.edu

Students pursuing the Environmental Policy Minor will study aspects of human interactions with the natural world. This minor will provide students with a broad overview of ecology, the environmental consequences of human action, and conceptual and practical sustainability efforts. This includes relationships between social and biological sciences and environmental law. The minor complements majors in natural science but is also suitable for non-science majors.

This is a Green Leaf program (p. 107).

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

For policies governing all undergraduate programs, see AP 5 Undergraduate Policies (p. 87).

Requirements

Minor Requirements

Total credits: 21

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 690) tab for specific policies related to this program.

Students must successfully complete the following courses with a minimum 2.00 GPA.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 336</td>
<td>Human Dimensions of the Environment</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 361</td>
<td>Introduction to Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 377</td>
<td>Applied Ecology</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 343</td>
<td>Topics in Environmental Philosophy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 12

Additional Courses

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 318</td>
<td>Conservation Biology</td>
<td></td>
</tr>
<tr>
<td>EVPP 337</td>
<td>Environmental Policy Making in Developing Countries</td>
<td></td>
</tr>
<tr>
<td>EVPP 338</td>
<td>Economics of Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 419</td>
<td>Marine Mammal Biology and Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 421</td>
<td>Marine Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 440</td>
<td>Field Environmental Science</td>
<td></td>
</tr>
<tr>
<td>EVPP 490</td>
<td>Special Topics in Environmental Science and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 505</td>
<td>Selected Topics in Environmental Science</td>
<td></td>
</tr>
<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>ANTH 370</td>
<td>Environment and Culture</td>
<td></td>
</tr>
<tr>
<td>ANTH 399</td>
<td>Issues in Anthropology</td>
<td></td>
</tr>
<tr>
<td>PRLS 300</td>
<td>People with Nature</td>
<td></td>
</tr>
<tr>
<td>PRLS 402</td>
<td>Human Behavior in Natural Environments</td>
<td></td>
</tr>
<tr>
<td>PRLS 526</td>
<td>Environmental Education and Resource Interpretation</td>
<td></td>
</tr>
<tr>
<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>SOCI 332</td>
<td>The Urban World (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>TOUR 340</td>
<td>Sustainable Tourism</td>
<td></td>
</tr>
<tr>
<td>TOUR 362</td>
<td>Cultural and Environmental Interpretation</td>
<td></td>
</tr>
<tr>
<td>TOUR 540</td>
<td>Sustainable Tourism Management</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

1 Other appropriate courses may be approved by the coordinator of the minor.

2 Relevant topics only.
The Environmental Science, BS provides students with rigorous training in the fundamental science of the environment and in the application of key scientific principles to the analysis of environmental processes and problems. Subsequently, the program introduces students to the development of practical responses to those problems. The program covers ecological systems, environmental policy, fundamental techniques of environmental science and engineering, protection and improvement of environmental quality, and public and private decision-making processes. Graduates of the program are prepared to undertake careers in a variety of environmental science fields, and are also qualified to pursue advanced scientific/professional education.

This is a Green Leaf program (p. 107).

Concentrations
Students select a concentration in:

- Conservation
- Ecological Science
- Environmental Health
- Human and Ecosystem Response to Climate Change
- Marine, Estuarine and Freshwater Ecology
- Wildlife

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies
Students must fulfill all Requirements for Bachelor's Degrees (p. 89), including the Mason Core (p. 142).

Students can fulfill the writing intensive requirement for this major by taking EVPP 337 Environmental Policy Making in Developing Countries.

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements
Total credits: minimum 120

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 691) tab for specific policies related to this program.

Please note that all CONS courses are offered through the Smithsonian-Mason Semester (https://catalog.gmu.edu/colleges-schools/humanities-social-sciences/smithsonian-mason-conservation/#text).

Core Requirements

All students complete the following core courses:

Environmental Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
<td>4</td>
</tr>
<tr>
<td>EVPP 301</td>
<td>Environmental Science: Biological Diversity and Ecosystems</td>
<td>4</td>
</tr>
<tr>
<td>EVPP 302</td>
<td>Environmental Science: Biomes and Human Dimensions</td>
<td>4</td>
</tr>
<tr>
<td>EVPP 305</td>
<td>Environmental Microbiology Essentials</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 306</td>
<td>Environmental Microbiology Essentials Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>EVPP 337</td>
<td>Environmental Policy Making in Developing Countries</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 361</td>
<td>Introduction to Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 377</td>
<td>Applied Ecology</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 430</td>
<td>Fundamentals of Environmental Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one from the following: 3

- EVPP 336 Human Dimensions of the Environment
- EVPP 338 Economics of Environmental Policy
- EVPP 362 Intermediate Environmental Policy
- EVPP 475 Global Biodiversity Governance

Select one from the following: 3-4

- EVPP 378 RS: Ecological Sustainability (Mason Core) (p. 142)
- EVPP 401 Integrated Environmental Assessment
- EVPP 480 Sustainability in Action (Mason Core) (p. 142)
- CONS 490 RS: Integrated Conservation Strategies (Mason Core) (p. 142)

Total Credits 38-39

1 Fulfills the writing intensive requirement.

Chemistry

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>General Chemistry Laboratory II (Mason Core) (p. 142)</td>
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</tbody>
</table>

Total Credits 8

Mathematics

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core) (p. 142)</td>
<td>7-8</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>7-8</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>7-8</td>
</tr>
</tbody>
</table>

### Geology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 4

### Information Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

### Experiential Learning

Select at least one from the following: 1-6

- EVPP 395 Undergraduate Research in Environmental Science and Policy
- EVPP 494 Internship
- CONS 496 Research in Conservation (Mason Core) (p. 142)
- CONS 498 Internship

Total Credits: 1-6

### Concentration in Conservation (CNSV)

Select at least 21 credits from the following: 21

- EVPP 318 Conservation Biology
- EVPP 378 RS: Ecological Sustainability (Mason Core) (p. 142)
- EVPP 395 Undergraduate Research in Environmental Science and Policy
- EVPP 396 Directed Topic in Environmental Science and Policy 1
- EVPP 419 Marine Mammal Biology and Conservation
- EVPP 420 Marine Mammal Biology and Conservation Field Course
- EVPP 421 Marine Conservation
- EVPP 427 Disease Ecology and Conservation
- EVPP 440 Field Environmental Science 1
- EVPP 475 Global Biodiversity Governance
- EVPP 490 Special Topics in Environmental Science and Policy 1
- EVPP 494 Internship
- BIOL 300 BioDiversity
- BIOL 435 Selected Topics in Biology 1
- GGS 303 Geography of Resource Conservation (Mason Core) (p. 142)
- GGS 307 Geographic Approaches on Sustainable Development
- CONS 320 Conservation in Practice
- CONS 400 Conservation Seminar

- CONS 401 Conservation Theory
- CONS 402 Applied Conservation
- CONS 404 Biodiversity Monitoring
- CONS 405 Landscape and Macrosystems Ecology
- CONS 406 Small Population Management
- CONS 410 Human Dimensions in Conservation (Mason Core) (p. 142)
- CONS 490 RS: Integrated Conservation Strategies (Mason Core) (p. 142) (Synthesis course)
- CONS 491 RS: Conservation Management Planning (Mason Core) (p. 142)
- CONS 497 Special Topics in Conservation
- CONS 499 Independent Study/Research
- INTS 311 The Mysteries of Migration: Consequences for Conservation (Mason Core) (p. 142)
- PRLS 300 People with Nature
- PRLS 402 Human Behavior in Natural Environments

Alternative courses may be taken as approved by the program coordinator.

Total Credits: 21

1 In a relevant topic.

### Concentration in Ecological Science (ECSI)

Select at least 21 credits from the following: 21

- EVPP 309 Introduction to Oceanography
- EVPP 350 Freshwater Ecosystems
- EVPP 355 Ecological Engineering and Ecosystem Restoration
- EVPP 378 RS: Ecological Sustainability (Mason Core) (p. 142)
- EVPP 395 Undergraduate Research in Environmental Science and Policy
- EVPP 396 Directed Topic in Environmental Science and Policy 1
- EVPP 408 Mushrooms, Molds and Society
- EVPP 427 Disease Ecology and Conservation
- EVPP 440 Field Environmental Science 1
- EVPP 449 Marine Ecology
- EVPP 490 Special Topics in Environmental Science and Policy 1
- EVPP 494 Internship
- BIOL 300 BioDiversity
- BIOL 345 Plant Ecology
- BIOL 435 Selected Topics in Biology 1
- BIOL 459 Fungi and Ecosystems
- GEOL 305 Environmental Geology
- GEOL 306 Soil Science
- GGS 307 Geographic Approaches on Sustainable Development
Alternative courses may be taken as approved by the program coordinator.

Total Credits 21

1 In a relevant topic.

**Concentration in Environmental Health (EVHL)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 427</td>
<td>Disease Ecology and Conservation</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 445</td>
<td>Principles of Environmental Toxicology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Course Options**

Select at least 15 credits from the following 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 395</td>
<td>Undergraduate Research in Environmental Science and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 396</td>
<td>Directed Topic in Environmental Science and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 409</td>
<td>Medical Mycology</td>
<td></td>
</tr>
<tr>
<td>EVPP 440</td>
<td>Field Environmental Science</td>
<td></td>
</tr>
<tr>
<td>EVPP 490</td>
<td>Special Topics in Environmental Science and Policy</td>
<td>1</td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>EVPP 515</td>
<td>Molecular Environmental Biology I</td>
<td></td>
</tr>
<tr>
<td>BIOL 305 &amp; BIOL 306</td>
<td>Biology of Microorganisms and Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOL 402</td>
<td>Applied and Industrial Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 404</td>
<td>Medical Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 465</td>
<td>Histology</td>
<td></td>
</tr>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>GGS 319</td>
<td>Air Pollution</td>
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</tr>
<tr>
<td>GGS 322</td>
<td>Issues in Global Change</td>
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</tr>
<tr>
<td>GCH 205</td>
<td>Global Health (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>GCH 360</td>
<td>Health and Environment</td>
<td></td>
</tr>
<tr>
<td>GCH 560</td>
<td>Environmental Health</td>
<td></td>
</tr>
</tbody>
</table>

Alternative courses may be taken as approved by the program coordinator.

Total Credits 21

1 In a relevant topic.

**Concentration in Human and Ecosystem Response to Climate Change (HERC)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EVPP 336</td>
<td>Human Dimensions of the Environment</td>
<td>3</td>
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</tbody>
</table>

**Course Options**

Select at least 18 credits from the following: 18

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 309</td>
<td>Introduction to Oceanography</td>
<td></td>
</tr>
<tr>
<td>EVPP 355</td>
<td>Ecological Engineering and Ecosystem Restoration</td>
<td></td>
</tr>
</tbody>
</table>

Alternative courses may be taken as approved by the program coordinator.

Total Credits 21

1 In a relevant topic.
Concentration in Marine, Estuarine and Freshwater Ecology (MEFC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 350</td>
<td>Freshwater Ecosystems</td>
<td>4</td>
</tr>
<tr>
<td>EVPP 421</td>
<td>Marine Conservation</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 449</td>
<td>Marine Ecology</td>
<td>3</td>
</tr>
</tbody>
</table>

Course Options

Select at least 8 credits from the following: 8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 318</td>
<td>Conservation Biology</td>
<td></td>
</tr>
<tr>
<td>EVPP 363</td>
<td>Coastal Morphology and Processes</td>
<td></td>
</tr>
<tr>
<td>EVPP 395</td>
<td>Undergraduate Research in Environmental Science and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 396</td>
<td>Directed Topic in Environmental Science and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 419</td>
<td>Marine Mammal Biology and Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 420</td>
<td>Marine Mammal Biology and Conservation Field Course</td>
<td></td>
</tr>
<tr>
<td>EVPP 427</td>
<td>Disease Ecology and Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 440</td>
<td>Field Environmental Science</td>
<td></td>
</tr>
<tr>
<td>EVPP 490</td>
<td>Special Topics in Environmental Science and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>BIOL 331</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
<tr>
<td>BIOL 480</td>
<td>The Diversity of Fishes</td>
<td></td>
</tr>
<tr>
<td>GEOL 364</td>
<td>Marine Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 458</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>CLIM 412</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>INTS 318</td>
<td>Exploring Virginia’s Watersheds</td>
<td></td>
</tr>
</tbody>
</table>

Alternative courses may be taken as approved by the program coordinator.

Total Credits 21

1 In a relevant topic.

Concentration in Wildlife (WILD)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 318</td>
<td>Conservation Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 460</td>
<td>Infectious Diseases Wildlife</td>
<td>3</td>
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</table>

Choose one course from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 395</td>
<td>Undergraduate Research in Environmental Science and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 396</td>
<td>Directed Topic in Environmental Science and Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 419</td>
<td>Marine Mammal Biology and Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>BIOL 437</td>
<td>Ornithology</td>
<td></td>
</tr>
<tr>
<td>BIOL 438</td>
<td>Mammalogy</td>
<td></td>
</tr>
</tbody>
</table>

BIOL 439 | Herpetology                          |         |

Zoology Courses

Choose one course from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>EVPP 395</td>
<td>Undergraduate Research in Environmental Science and Policy</td>
<td>2</td>
</tr>
<tr>
<td>EVPP 396</td>
<td>Directed Topic in Environmental Science and Policy</td>
<td>2</td>
</tr>
<tr>
<td>EVPP 427</td>
<td>Disease Ecology and Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td>2</td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 331</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
<tr>
<td>BIOL 332</td>
<td>Insect Biology</td>
<td></td>
</tr>
</tbody>
</table>

Botany Courses

Choose from the following courses: 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 395</td>
<td>Undergraduate Research in Environmental Science and Policy</td>
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<tr>
<td>EVPP 396</td>
<td>Directed Topic in Environmental Science and Policy</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 140</td>
<td>Plants and People (Mason Core)</td>
<td>3-4</td>
</tr>
<tr>
<td>BIOL 304</td>
<td>Plant Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 344</td>
<td>Plant Diversity and Evolution</td>
<td></td>
</tr>
<tr>
<td>BIOL 345</td>
<td>Plant Ecology</td>
<td></td>
</tr>
<tr>
<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 21-23

1 In a topic relevant to wildlife.
2 In a topic relevant to zoology.
3 In a topic relevant to botany.

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- CNSV Concentration: 31-38 credits
- ESCI Concentration: 31-38 credits
- EVHL Concentration: 31-38 credits
- HERC Concentration: 31-38 credits
- MECF Concentration: 31-38 credits
- WILD Concentration: 29-38 credits

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Written Communication</td>
<td>3</td>
</tr>
<tr>
<td>p. 142</td>
<td>Oral Communication</td>
<td>3</td>
</tr>
</tbody>
</table>
Quantitative Reasoning (p. 143) 3
Information Technology and Computing (p. 143) 3

**Exploration Requirements**

Arts (p. 144) 3
Global Understanding (p. 146) 3
Literature (p. 147) 3
Natural Science (p. 148) 7
Social and Behavioral Sciences (p. 150) 3
Western Civilization/World History (p. 151) 3

**Integration Requirements**

Written Communications (ENGH 302) (p. 142) 3
Writing-Intensive (p. 151) 1 3
Synthesis/Capstone (p. 153) 2 3

Total Credits 40

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2 Minimum 3 credits required.

---

**Accelerated Master’s**

**Bachelor’s Degree (selected)/Environmental Science and Policy, Accelerated MS**

**Overview**

This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy, MS (p. 696) in less time than if they had first graduated with an environmentally-focused Green Leaf-designated (p. 107) BA or BS degree and then applied to the MS program sequentially.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated (p. 107) major or minor may apply for provisional acceptance into this accelerated master’s program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 212 General Chemistry II (Mason Core) (p. 142) and three semesters of biology, including a course in ecology, or the equivalent, for example:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td></td>
</tr>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
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Select one of the following options: 13

**Option 1:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
</tr>
</tbody>
</table>

**Option 2:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
</tr>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
</tr>
</tbody>
</table>

By the beginning of the undergraduate’s senior year, they should first submit a Graduate Application for Accelerated Master’s Program form (obtained from the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Secondly, in their senior year accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application with a minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. Upon completion and conferral of the undergraduate degree in a Green Leaf-designated (p. 107) program, in the semester indicated in the application, they must additionally submit the Bachelor’s/Accelerated Master’s Transition form (found on the Office of the University Registrar website (http://registrar.gmu.edu/forms)) and will subsequently be admitted into graduate status.

By at least the beginning of their senior year, they should seek out a faculty member in the Department of Environmental Science and Policy (p. 688) who is willing to serve as their advisor. This advisor will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies. Admission into a research-oriented master’s concentration is dependent upon securing the agreement of a faculty advisor. Faculty from a variety of departments and colleges at George Mason (called “program faculty”) can serve as master’s advisors. Potential students are encouraged to speak with the graduate program coordinator in the department to obtain guidance on this issue.

**Application Requirements**

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog, excluding the GRE exam requirement (which is not required for those enrolled in the accelerated program). This includes three letters of recommendation (at least one from a former professor or someone with a PhD), a recent resume, a statement of interest/research goals and interests (including information on the candidate’s proposed MS research), and a letter from their advisor stating that the advisor agrees to take on the candidate as an MS student, how the candidate would be a good fit for them and why candidate’s research topic would be suitable.

For information specific to the accelerated Environmental Science and Policy, MS (p. 696), see Graduate Admissions on the department’s website (http://esp.gmu.edu/academic-programs/graduate/admissions).

**Reserve Graduate Credits**

Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate environmentally-focused graduate coursework may be used in partial satisfaction of the requirements for the undergraduate degree. If students...
Environmental Science Minor

Banner Code: EVSC

Joris L. van der Ham, Undergraduate Coordinator
Email: jvanderh@gmu.edu
Website: esp.gmu.edu

Students pursuing the Environmental Science Minor will identify and study the interactions between organic and inorganic elements in a wide variety of ecosystems. This insight will provide students with a broad overview of the workings of the natural world and develop an increased awareness of major environmental issues affecting modern society.

The minor complements majors in natural science but is also suitable for non-science majors. This minor is not intended to be taken in conjunction with majors that focus on environmental science, including the Earth Science, BS (p. 627) (concentration in Environmental Geoscience) or the Environmental Science, BS (p. 690).

Admissions & Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

Requirements

Minor Requirements
Total credits: 19-23

Students should refer to the Admissions & Policies (p. 696) tab for specific policies related to this program.

EVPP or BIOL Sequence

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 110 &amp; EVPP 111</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142) and The Ecosphere: An Introduction to Environmental Science II (Mason Core) (p. 142)</td>
<td>8-12</td>
</tr>
<tr>
<td>BIOL 103 &amp; BIOL 106 &amp; BIOL 107 &amp; GEOL 101</td>
<td>Introductory Biology I (Mason Core) (p. 142) and Introductory Biology II Laboratory (Mason Core) (p. 142) and Intro Biology II Lecture (Mason Core) (p. 142) and Introductory Geology I (Mason Core) (p. 142)</td>
<td>8-12</td>
</tr>
</tbody>
</table>

Total Credits 8-12

Applied Ecology Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 377 or BIOL 377</td>
<td>Applied Ecology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select a minimum of 8 credits of EVPP electives, of which 4 credits must be upper level courses (p. 1668)</td>
<td>8</td>
</tr>
</tbody>
</table>

Total Credits 8

Environmental Science and Policy, MS

Banner Code: SC-MS-EVSP

Joris van der Ham
Email: jvanderh@gmu.edu
Website: esp.gmu.edu

This master’s program meets the increasing need for trained environmental professionals who can address the problems of land and water management, land use and urbanization, wetland loss, microbial ecology, bioremediation, conservation biology, and ecosystem preservation. These professionals will also contribute to the analysis and resolution of global problems, such as deforestation, insufficient world food supplies, acid deposition, population growth and public health, global climate change/warming, and depletion of the stratospheric ozone. Areas of specific departmental focus include ecosystems; conservation; environmental biocomplexity; molecular ecology; sustainability science; environmental policy and management; and human/environmental interactions.

Environmental problems are defined in the real world and do not necessarily conform to traditional academic disciplines. As such, solutions require creative combinations of diverse interests and subjects. Effective training requires rigorous, problem-focused interdisciplinary
action in a setting in which research is an essential element supporting instruction.

This has been designated a Green Leaf program (p. 107).

**Concentrations**
The following concentrations are available in the master's program:

- Aquatic Ecology (AQEC)
- Conservation Science and Policy (COSP)
- Earth Surface Processes and Environmental Geochemistry (ESEG)
- Environmental Biocomplexity (EVBC)
- Environmental Science and Policy (EVSP)
- Environmental Science Communication (ESCM)
- Environment and Management (EVM)

**Admissions & Policies**

**Admissions**
University-wide admissions policies can be found in Graduate Admissions Policies (p. 68). Additionally, information on the admission of international students can be found in Admission of International Students (p. 71).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Eligibility**
Applicants should hold a bachelor's degree from a regionally-accredited institution with a GPA of 3.00 in natural or Earth sciences, engineering, resource planning, environmental studies, or a field that leads to an environmental focus.

Applicants should have taken at least two semesters of chemistry and three semesters of biology, including a course in ecology. Applicants who lack this coursework should contact the graduate coordinator's office for advice. Successful completion of a two-semester sequence of introductory graduate-level environmental chemistry and biology courses can be used to satisfy the biology and chemistry prerequisites for admission. These introductory courses would be in addition to the requirements for the degree.

**Application Requirements**
Applicants should submit the following:

- Completed George Mason University George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).
- Three letters of recommendation, including at least one from a former professor or, if not available, from someone with a PhD.
- The GRE is required. Successful applicants usually have achieved a minimum score of 235/336 (70%) for verbal and quantitative combined.
- Statement of interest indicating: desired concentration, potential areas of environmental focus/research interest, interactions with potential faculty advisors, and career goals.
- Contact a potential George Mason faculty advisor (appropriate for research interests). An endorsement letter from the potential advisor must be sent to the Department of Environmental Science and Policy (p. 687)'s graduate office; the availability of an advisor in the student's area of interest is a prerequisite for admission.

**Policies**
For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

**Course Selections**
Some program requirements may be fulfilled by completing courses from a variety of academic units at Mason. A student's course selections should reflect a coherent individual program focus, which is stated and briefly described in the program of study. Course selections should also support the research component of the student's degree program (if applicable) and should be developed in close consultation with the supervisory committee. The supervisory committee approves a coursework program (the program of study) individually for each student.

In special cases, the graduate program director may permit the substitution of an alternative course in place of a required one.

**Supervisory Committee**
Students must form a supervisory committee and submit a program of study to the graduate coordinator for approval within the first 9 credits of coursework or by the end of the second semester, whichever comes first.

The supervisory committee consists of the advisor and at least two other members, chosen in consultation with the advisor, and must conform to AP6.9 Requirements for Master's Degrees (p. 94).

**Requirements**

**Degree Requirements**
Total credits: 33

This is a Green Leaf program.

Students should refer to Admissions & Policies (p. 697) for specific policies related to this program.

Students in all of the concentrations will complete the concentration's requirements, the research requirement, the seminar requirement, and electives as outlined below (for a total of 33 credits).

**Aquatic Ecology Concentration (AQEC)**
This concentration will provide students with a well-grounded master's in the study of aquatic environments such as lakes, streams, watersheds, and estuaries. Emphasis is placed on food webs, biogeochemical cycles, water quality, habitat characteristics, and life histories of aquatic organisms. Students will become proficient with research tools including literature review, field and laboratory methods, and analytical tools as well as applications to management issues.

**Aquatic Science**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 550</td>
<td>Waterscape Ecology and Management</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 581</td>
<td>Estuarine and Coastal Ecology</td>
<td>3</td>
</tr>
<tr>
<td>Select 6 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVPP 505</td>
<td>Selected Topics in Environmental Science</td>
<td>6</td>
</tr>
<tr>
<td>EVPP 519</td>
<td>Marine Mammal Biology and Conservation</td>
<td></td>
</tr>
</tbody>
</table>

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).
EVPP 521 Marine Conservation
EVPP 536 The Diversity of Fishes
EVPP 563 Coastal Morphology and Processes
EVPP 641 Environmental Science and Public Policy
EVPP 643 Microbial Ecology
EVPP 645 Freshwater Ecology
EVPP 646 Wetland Ecology and Management
EVPP 648 Population Ecology
EVPP 652 The Hydrosphere
EVPP 741 Advanced Topics in Environmental Science and Public Policy
EVPP 745 Environmental Toxicology
CLIM 512 Physical Oceanography

Total Credits 12

Public Policy
Select from courses in environmental law, human ecology, environmental ethics, environmental conflict resolution, environmental planning, or public affairs.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 505</td>
<td>Selected Topics in Environmental Science</td>
<td>6</td>
</tr>
<tr>
<td>EVPP 521</td>
<td>Marine Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 608</td>
<td>Introduction to Environmental Social Science</td>
<td></td>
</tr>
<tr>
<td>EVPP 619</td>
<td>The Challenge of Biodiversity</td>
<td></td>
</tr>
<tr>
<td>EVPP 623</td>
<td>Translating Environmental Policy into Action</td>
<td></td>
</tr>
<tr>
<td>EVPP 635</td>
<td>Environment and Society</td>
<td></td>
</tr>
<tr>
<td>EVPP 642</td>
<td>Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 670</td>
<td>Environmental Law</td>
<td></td>
</tr>
<tr>
<td>EVPP 675</td>
<td>Environmental Planning and Administration</td>
<td></td>
</tr>
<tr>
<td>EVPP 741</td>
<td>Advanced Topics in Environmental Science and Public Policy</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

1 Required for those with limited coursework in the social sciences. Can be included within the 6 credits.

Aquatic Methods
Select from statistics, research design, multivariate data analysis, geographic information systems, lab and field classes.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 555</td>
<td>Lab in Waterscape Ecology</td>
<td>6</td>
</tr>
<tr>
<td>EVPP 582</td>
<td>Estuarine and Coastal Ecology Laboratory</td>
<td></td>
</tr>
<tr>
<td>EVPP 615</td>
<td>Molecular Environmental Biology II</td>
<td></td>
</tr>
<tr>
<td>EVPP 647</td>
<td>Wetland Ecology Lab and Field</td>
<td></td>
</tr>
<tr>
<td>EVPP 650</td>
<td>Ecosystem Analysis and Modeling</td>
<td></td>
</tr>
<tr>
<td>EVPP 651</td>
<td>Multivariate Data Analysis for Ecology and Environmental Science</td>
<td></td>
</tr>
<tr>
<td>CLIM 512</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
</tbody>
</table>

CSS 600 Introduction to Computational Social Science
CSS 645 Spatial Agent-Based Models of Human-Environment Interactions
GGS 653 Geographic Information Analysis
SOCI 636 Statistical Reasoning

Total Credits 6

Additional Requirements
See the Additional Requirements section below for details on the research requirement, the seminar requirement, and elective.

Conservation Science and Policy Concentration (COSP)
This concentration is designed to foster an interdisciplinary, research-oriented degree focusing on the conservation of threatened species and habitats, integrating biological sciences and the human dimensions of conservation practice.

Students may take courses offered by the Department of Environmental Science and Policy (p. 687) and other departments, including CONS courses which are offered through the Smithsonian Mason School of Conservation (p. 610). This unique partnership with the Smithsonian-Mason School of Conservation (SMSC) in Front Royal, Virginia offers students hands-on education in cutting-edge conservation science and human dimensions through residential, intensive classes. SMSC is renowned for its conservation research and training of conservation practitioners around the world and instructors for these classes are drawn from SMSC's conservation scientists and other experts from around the world.

Conservation Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EVPP 518</td>
<td>Conservation Biology</td>
<td>6</td>
</tr>
<tr>
<td>EVPP 519</td>
<td>Marine Mammal Biology and Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 520</td>
<td>Marine Mammal Biology and Conservation Field Course</td>
<td></td>
</tr>
<tr>
<td>EVPP 543</td>
<td>Tropical Ecosystems</td>
<td></td>
</tr>
<tr>
<td>EVPP 550</td>
<td>Waterscape Ecology and Management</td>
<td></td>
</tr>
<tr>
<td>EVPP 607</td>
<td>Fundamentals of Ecology</td>
<td></td>
</tr>
<tr>
<td>EVPP 621</td>
<td>Overview of Biodiversity Conservation</td>
<td></td>
</tr>
<tr>
<td>CONS 630</td>
<td>Species Monitoring Conservation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

1 Required for those without previous coursework in ecology. Can be included within the 6 credits.

2 Variable topics, may be taken more than once if the topic is different.

Conservation Policy and Human Dimensions of Conservation
Select from the following courses in conservation policy or social science courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 521</td>
<td>Marine Conservation</td>
<td>6</td>
</tr>
<tr>
<td>EVPP 575</td>
<td>Global Biodiversity Governance</td>
<td></td>
</tr>
</tbody>
</table>

Conservation Policy

Select from the courses in conservation policy or social science courses.
**Conservation Methods**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 555</td>
<td>Lab in Waterscape Ecology</td>
<td>6</td>
</tr>
<tr>
<td>CONS 625</td>
<td>Statistics for Ecology and Conservation Biology</td>
<td>6</td>
</tr>
</tbody>
</table>

**Additional Requirements**

See the Additional Requirements section below for details on the research requirement, the seminar requirement, and electives.

**Earth Surface Processes and Environmental Geochemistry Concentration (ESEG)**

This concentration offers a specific research focus in the Earth science area and is designed for students desiring a master’s with an Earth science geology theme.

**Natural Sciences**

Of the required 16 credits, select at least one course from each of the following areas: soils science, hydrogeology, and geochemistry (totaling 10 of the 16 required credits).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 503</td>
<td>Field Mapping Techniques</td>
<td>16</td>
</tr>
<tr>
<td>EVPP 505</td>
<td>Selected Topics in Environmental Science</td>
<td></td>
</tr>
<tr>
<td>EVPP 543</td>
<td>Tropical Ecosystems</td>
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<tr>
<td>EVPP 550</td>
<td>Waterscape Ecology and Management</td>
<td></td>
</tr>
<tr>
<td>EVPP 563</td>
<td>Coastal Morphology and Processes</td>
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</tr>
<tr>
<td>EVPP 577</td>
<td>Biogeochemistry: A Global Perspective</td>
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<tr>
<td>EVPP 607</td>
<td>Fundamentals of Ecology ¹</td>
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<tr>
<td>EVPP 610</td>
<td>Bioremediation: Theory and Applications</td>
<td></td>
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<tr>
<td>EVPP 643</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>EVPP 745</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>CHEM 633</td>
<td>Chemical Thermodynamics and Kinetics</td>
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<tr>
<td>CHEM 651</td>
<td>Environmental Chemistry of Organic Substances</td>
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<tr>
<td>CHEM 728</td>
<td>Introduction to Solid Surfaces</td>
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<td>GEOL 500</td>
<td>Selected Topics in Modern Geology</td>
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<tr>
<td>GEOL 501</td>
<td>Selected Topics in Modern Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 601</td>
<td>The Lithosphere</td>
<td></td>
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</tbody>
</table>

**Methods**

Select from the following courses in remote sensing, GIS, statistics, instrumentation, or modeling.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 503</td>
<td>Field Mapping Techniques</td>
<td>16</td>
</tr>
<tr>
<td>EVPP 531</td>
<td>Land-use Modeling Techniques and Applications</td>
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</tr>
<tr>
<td>EVPP 615</td>
<td>Molecular Environmental Biology II</td>
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</tr>
<tr>
<td>EVPP 631</td>
<td>Spatial Agent-based Models of Human-Environment Interactions</td>
<td></td>
</tr>
<tr>
<td>EVPP 632</td>
<td>Qualitative Research Methods for Environmental Scientists</td>
<td></td>
</tr>
<tr>
<td>EVPP 650</td>
<td>Ecosystem Analysis and Modeling</td>
<td></td>
</tr>
<tr>
<td>EVPP 651</td>
<td>Multivariate Analysis for Ecology and Environmental Science</td>
<td></td>
</tr>
<tr>
<td>GGS 531</td>
<td>Land-Use Modeling Techniques and Applications</td>
<td></td>
</tr>
<tr>
<td>GGS 550</td>
<td>Geospatial Science Fundamentals</td>
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<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td></td>
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<tr>
<td>GGS 560</td>
<td>Quantitative Methods</td>
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<tr>
<td>GGS 563</td>
<td>Advanced Geographic Information Systems</td>
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<tr>
<td>GGS 579</td>
<td>Remote Sensing</td>
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</tr>
<tr>
<td>GGS 653</td>
<td>Geographic Information Analysis</td>
<td></td>
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</tbody>
</table>

**Additional Requirements**

See the Additional Requirements section below for details on the research requirement, the seminar requirement, and electives.
Environmental Biocomplexity Concentration (EVBC)

This concentration is designed for students desiring a master’s with an environmental biocomplexity theme encompassing the disciplines of population genetics, microbial ecology, and/or molecular systematics.

Students are encouraged to complete at least 1 credit of directed studies (EVPP 693 Directed Studies in Environmental Science and Public Policy) as a laboratory rotation to enhance their mastery of experimental techniques.

Natural Sciences

Select from the following courses with topics that can be drawn from offerings in ecology, biogeochemistry, biochemistry, population genetics, molecular biology, molecular systematics, molecular evolution, microbial ecology, microbial diversity, quantitative genetics, and population biology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 505</td>
<td>Selected Topics in Environmental Science</td>
<td>6</td>
</tr>
<tr>
<td>EVPP 515</td>
<td>Molecular Environmental Biology I</td>
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</tr>
<tr>
<td>EVPP 518</td>
<td>Conservation Biology</td>
<td></td>
</tr>
<tr>
<td>EVPP 519</td>
<td>Marine Mammal Biology and Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 520</td>
<td>Marine Mammal Biology and Conservation Field Course</td>
<td></td>
</tr>
<tr>
<td>EVPP 521</td>
<td>Marine Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 536</td>
<td>The Diversity of Fishes</td>
<td></td>
</tr>
<tr>
<td>EVPP 550</td>
<td>Waterscape Ecology and Management</td>
<td></td>
</tr>
<tr>
<td>EVPP 551</td>
<td>Fungi and Ecosystems</td>
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</tr>
<tr>
<td>EVPP 563</td>
<td>Coastal Morphology and Processes</td>
<td></td>
</tr>
<tr>
<td>EVPP 581</td>
<td>Estuarine and Coastal Ecology</td>
<td></td>
</tr>
<tr>
<td>EVPP 607</td>
<td>Fundamentals of Ecology ¹</td>
<td></td>
</tr>
<tr>
<td>EVPP 615</td>
<td>Molecular Environmental Biology II</td>
<td></td>
</tr>
<tr>
<td>EVPP 641</td>
<td>Environmental Science and Public Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 643</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>EVPP 646</td>
<td>Wetland Ecology and Management</td>
<td></td>
</tr>
<tr>
<td>EVPP 745</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

¹ Required for those without previous coursework in ecology. Can be included within the 6 credits.

Methods and Statistics

Select from the following courses in statistics, bioinformatics, information systems, instrumental analysis, microbiological techniques, molecular methods, or phylogenetic methods.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 615</td>
<td>Molecular Environmental Biology II</td>
<td>9</td>
</tr>
<tr>
<td>EVPP 632</td>
<td>Qualitative Research Methods for Environmental Scientists</td>
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</tr>
<tr>
<td>EVPP 650</td>
<td>Ecosystem Analysis and Modeling</td>
<td></td>
</tr>
<tr>
<td>EVPP 651</td>
<td>Multivariate Data Analysis for Ecology and Environmental Science</td>
<td></td>
</tr>
<tr>
<td>EVPP 745</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GGS 563</td>
<td>Advanced Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GGS 653</td>
<td>Geographic Information Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Additional Requirements

See the Additional Requirements section below for details on the research requirement, the seminar requirement, and electives.

Environmental Science and Policy Concentration (EVSP)

The Environmental Science and Policy concentration is the largest within the master’s and serves as a home for a broad array of research foci. It encourages an independent and creative approach to the development of curricula that reside in the general field of environmental science and policy.

The concentration’s requirements may be fulfilled by completing courses from a variety of academic units at Mason as outlined below.

Natural Sciences

Select from the following courses in biology, geology, geography, chemistry, or environmental engineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 505</td>
<td>Selected Topics in Environmental Science</td>
<td>6</td>
</tr>
<tr>
<td>EVPP 520</td>
<td>Marine Mammal Biology and Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 521</td>
<td>Marine Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 524</td>
<td>Introduction to Environmental and Resource Economics</td>
<td></td>
</tr>
<tr>
<td>EVPP 608</td>
<td>Introduction to Environmental Social Science ¹</td>
<td></td>
</tr>
<tr>
<td>EVPP 619</td>
<td>The Challenge of Biodiversity</td>
<td></td>
</tr>
<tr>
<td>EVPP 620</td>
<td>Development of U.S. Environmental Policies</td>
<td></td>
</tr>
<tr>
<td>EVPP 621</td>
<td>Overview of Biodiversity Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 623</td>
<td>Translating Environmental Policy into Action</td>
<td></td>
</tr>
<tr>
<td>EVPP 635</td>
<td>Environment and Society</td>
<td></td>
</tr>
<tr>
<td>EVPP 642</td>
<td>Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 643</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>EVPP 670</td>
<td>Environmental Law</td>
<td></td>
</tr>
<tr>
<td>EVPP 741</td>
<td>Advanced Topics in Environmental Science and Public Policy</td>
<td></td>
</tr>
</tbody>
</table>

¹ Required for those with limited coursework in the social sciences. Can be included within the 6 credits.
EVPP 520  Marine Mammal Biology and Conservation Field Course  
EVPP 543  Tropical Ecosystems  
EVPP 550  Waterscape Ecology and Management  
EVPP 551  Fungi and Ecosystems  
EVPP 581  Estuarine and Coastal Ecology  
EVPP 607  Fundamentals of Ecology  
EVPP 622  Management of Wild Living Resources  
EVPP 641  Environmental Science and Public Policy  
EVPP 643  Microbial Ecology  
EVPP 648  Population Ecology  
EVPP 677  Applied Ecology and Ecosystem Management  
EVPP 745  Environmental Toxicology  

Total Credits 6

1 Required for those without previous coursework in ecology. Can be included within the 6 credits.

Public Policy
Select from the following courses in environmental law, human ecology, environmental ethics, planning, or public affairs.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 505</td>
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<tr>
<td>EVPP 519</td>
<td>Marine Mammal Biology and Conservation</td>
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<tr>
<td>EVPP 520</td>
<td>Marine Mammal Biology and Conservation Field Course</td>
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<tr>
<td>EVPP 521</td>
<td>Marine Conservation</td>
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<tr>
<td>EVPP 608</td>
<td>Introduction to Environmental Social Science</td>
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<tr>
<td>EVPP 619</td>
<td>The Challenge of Biodiversity</td>
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<tr>
<td>EVPP 621</td>
<td>Overview of Biodiversity Conservation</td>
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<tr>
<td>EVPP 622</td>
<td>Management of Wild Living Resources</td>
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<tr>
<td>EVPP 623</td>
<td>Translating Environmental Policy into Action</td>
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</tr>
<tr>
<td>EVPP 635</td>
<td>Environment and Society</td>
<td></td>
</tr>
<tr>
<td>EVPP 642</td>
<td>Environmental Policy</td>
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<tr>
<td>EVPP 643</td>
<td>Microbial Ecology</td>
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<tr>
<td>EVPP 670</td>
<td>Environmental Law</td>
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</tbody>
</table>

1 Required for those with limited coursework in the social sciences. Can be included within the 6 credits.

Methods and Statistics
Select from the following courses in statistics, remote sensing, information systems, instrumental analysis, or modeling. A course in statistics is highly recommended.

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>EVPP 503</td>
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<td>EVPP 531  Land-use Modeling Techniques and Applications</td>
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<td>EVPP 615  Molecular Environmental Biology II</td>
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<td></td>
<td>EVPP 632  Qualitative Research Methods for Environmental Scientists</td>
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<td></td>
<td>EVPP 650  Ecosystem Analysis and Modeling</td>
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<td>EVPP 651  Multivariate Data Analysis for Ecology and Environmental Science</td>
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<td>EVPP 745  Environmental Toxicology</td>
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<td></td>
<td>GGS 560  Quantitative Methods</td>
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<td>GGS 653  Geographic Information Analysis</td>
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<td>GGS 756  Physical Principles of Remote Sensing</td>
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<td></td>
<td>SOCI 631  Survey Research</td>
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Additional Requirements
See the Additional Requirements section below for details on the research requirement, the seminar requirement, and electives.

Environmental Science Communication Concentration (ESCM)
A key to environmental action and behavior change is an ability to communicate environmental science and policy. This concentration is for students desiring a master's degree with an interdisciplinary approach to communicating environmental issues and solutions.

Environmental Science
Select 6 credits from EVPP graduate courses, suggestions include:

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<td>Marine Conservation</td>
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<td>Tropical Ecosystems</td>
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<tr>
<td>EVPP 607</td>
<td>Fundamentals of Ecology 1</td>
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<td>EVPP 621</td>
<td>Overview of Biodiversity Conservation</td>
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Total Credits 6

1 Required for those without previous coursework in ecology. Can be included within the 6 credits.

Science Communication
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<td>EVPP 529</td>
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<td>Science Communication</td>
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<td>EVPP 503  Field Mapping Techniques</td>
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<td></td>
<td>EVPP 524  Introduction to Environmental and Resource Economics</td>
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<td></td>
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<td>EVPP 521</td>
<td>Marine Conservation</td>
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<td>EVPP 543</td>
<td>Tropical Ecosystems</td>
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<td>EVPP 607</td>
<td>Fundamentals of Ecology 1</td>
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<tr>
<td>EVPP 621</td>
<td>Overview of Biodiversity Conservation</td>
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<td>EVPP 641</td>
<td>Environmental Science and Public Policy</td>
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<tr>
<td>EVPP 677</td>
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Total Credits 6

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<td>COMM 639</td>
<td>Science Communication</td>
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<td>EVPP 503  Field Mapping Techniques</td>
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<td>EVPP 505  Selected Topics in Environmental Science</td>
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<td></td>
<td>SOCI 631  Survey Research</td>
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</table>

1 Required for those without previous coursework in ecology. Can be included within the 6 credits.
Environmental Science and Policy, MS

**COMM 735**  Crisis Communication

Total Credits  12

**Research Methods**

<table>
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<tbody>
<tr>
<td>EVPP 631</td>
<td>Spatial Agent-based Models of Human-Environment Interactions</td>
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<td>EVPP 683</td>
<td>Environmental Conflict Resolution: Situation Assessment, Process Design and Best Practices</td>
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<tr>
<td>COMM 725</td>
<td>Qualitative Methods</td>
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<td>COMM 775</td>
<td>Media Content Analysis</td>
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<td>PUAD 613</td>
<td>Economic Analysis in Public Administration</td>
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<td>SOCI 620</td>
<td>Methods and Logic of Social Inquiry</td>
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<td>SOCI 634</td>
<td>Qualitative Research Methods</td>
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<tr>
<td>SOCI 636</td>
<td>Statistical Reasoning Methods</td>
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Total Credits  6

**Public Policy**

Select at least 12 credits from the following:

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<td>EVPP 638</td>
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<td>EVPP 641</td>
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<td>EVPP 642</td>
<td>Environmental Policy</td>
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<td>EVPP 670</td>
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<td>CEIE 556</td>
<td>Environmental Law</td>
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<tr>
<td>PRLS 501</td>
<td>Introduction to Natural Resources Law</td>
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<td>PUAD 502</td>
<td>Administration in Public and Nonprofit Organizations</td>
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<td>PUAD 540</td>
<td>Public Policy Process</td>
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Total Credits  12

**Methods and Statistics**

Select at least 6 credits from the following:

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<th>Code</th>
<th>Title</th>
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<td>EVPP 515</td>
<td>Molecular Environmental Biology I</td>
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<td>EVPP 518</td>
<td>Conservation Biology</td>
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<td>EVPP 519</td>
<td>Marine Mammal Biology and Conservation</td>
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<td>EVPP 520</td>
<td>Marine Mammal Biology and Conservation Field Course</td>
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<tr>
<td>EVPP 543</td>
<td>Tropical Ecosystems</td>
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<tr>
<td>EVPP 550</td>
<td>Waterscape Ecology and Management</td>
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<td>EVPP 555</td>
<td>Lab in Waterscape Ecology</td>
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<td>Estuarine and Coastal Ecology</td>
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<td>Fundamentals of Ecology 1</td>
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<td>EVPP 646</td>
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<td>EVPP 647</td>
<td>Wetland Ecology Lab and Field</td>
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<td>EVPP 648</td>
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Total Credits  6

**Additional Requirements**

See the Additional Requirements section below for details on the research requirement, the seminar requirement, and electives.

**Environment and Management Concentration (EVM)**

This concentration combines the managerial and administrative skills developed in a traditional master of public administration degree program with the scientific knowledge and understanding normally found in a master of science degree. It is especially meant for individuals working in or aspiring to work as managers in the environmental field in government or private industry.

**Natural Science**

Select at least 6 credits from the following:

<table>
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<th>Code</th>
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</thead>
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<td>EVPP 518</td>
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<td>Marine Mammal Biology and Conservation Field Course</td>
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<tr>
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<td>EVPP 555</td>
<td>Lab in Waterscape Ecology</td>
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<td>Estuarine and Coastal Ecology</td>
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<tr>
<td>EVPP 648</td>
<td>Population Ecology</td>
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<tr>
<td>EVPP 582</td>
<td>Estuarine and Coastal Ecology Laboratory</td>
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<tr>
<td>EVPP 650</td>
<td>Ecosystem Analysis and Modeling</td>
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<td>GGS 550</td>
<td>Geospatial Science Fundamentals</td>
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<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
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<td>GGS 579</td>
<td>Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>SOCI 636</td>
<td>Statistical Reasoning Methods</td>
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</table>

Total Credits  6

**Additional Requirements for all Concentrations:**

**Research Requirement**

The research requirement may be satisfied in one of two ways: a research project or a formal thesis.

The depth and sophistication of the research differs between the two options. The thesis normally involves original research with independent acquisition and interpretation of data, with the goal of peer-reviewed publication. Projects are generally less extensive and can include a broader range of activities.

**Project Option**

Students fulfilling the research requirement with the project option register for EVPP 798 Master’s Research Project in Environmental Science and Public Policy and are required to take a comprehensive examination covering knowledge mastered throughout the program of study. This examination includes both a written and an oral component and is administered by the student’s supervisory committee.
Thesis Option

Students fulfilling the research requirement with the thesis option register for EVPP 799 Master’s Thesis in Environmental Science and Public Policy, present their results in a public seminar, and defend their thesis before their supervisory committee. Students will be graded "Satisfactory/No Credit" on the research requirement.

Seminar Requirement

An appropriate course topic must be taken in order to fulfill this requirement.

Electives

If necessary, students take additional electives to bring the degree total to 33 credits. These courses must be approved by the student's supervisory committee and outlined on the student's program of study.

Accelerated Master's

Bachelor's Degree (selected)/Environmental Science and Policy, Accelerated MS

Overview

This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy MS (p. 696) in less time than if they had first graduated with an environmentally-focused Green Leaf-designated (p. 107) BA or BS degree and then applied to the MS program sequentially.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated (p. 107) major or minor may apply for provisional acceptance into this accelerated master’s program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 212 General Chemistry II (Mason Core) (p. 142) and three semesters of biology, including a course in ecology, or the equivalent, for example:

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>Option 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td></td>
</tr>
<tr>
<td>Option 2:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
<td></td>
</tr>
<tr>
<td>EVPP 301</td>
<td>Environmental Science: Biological Diversity and Ecosystems</td>
<td></td>
</tr>
<tr>
<td>EVPP 302</td>
<td>Environmental Science: Biomes and Human Dimensions</td>
<td></td>
</tr>
<tr>
<td>EVPP 305</td>
<td>Environmental Microbiology Essentials Laboratory</td>
<td></td>
</tr>
<tr>
<td>EVPP 306</td>
<td>Environmental Microbiology Essentials Laboratory</td>
<td></td>
</tr>
<tr>
<td>Option 3:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td></td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td></td>
</tr>
</tbody>
</table>

6 credits of BIOL or CONS electives

By the beginning of the undergraduate's senior year, they should first submit a Graduate Application for Accelerated Master's Program form (obtained from the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us)). Secondly, in their senior year accelerated master's students must complete the two graduate courses indicated on their Accelerated Master's Program Application with a minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. Upon completion and conferral of the undergraduate degree in a Green Leaf-designated (p. 107) program, in the semester indicated in the application, they must additionally submit the Bachelor's/Accelerated Master's Transition form (found on the Office of the University Registrar website (http://registrar.gmu.edu/forms)) and will subsequently be admitted into graduate status.

By at least the beginning of their senior year, they should seek out a faculty member in the Department of Environmental Science and Policy (p. 688) who is willing to serve as their advisor. This advisor will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies. Admission into a research-oriented master's concentration is dependent upon securing the agreement of a faculty advisor. Faculty from a variety of departments and colleges at George Mason (called "program faculty") can serve as master’s advisors. Potential students are encouraged to speak with the graduate program coordinator in the department to obtain guidance on this issue.

Application Requirements

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog, excluding the GRE exam requirement (which is not required for those enrolled in the accelerated program). This includes three letters of recommendation (at least one from a former professor or someone with a PhD), a recent resume, a statement of interest/research goals and interests (including information on the candidate's proposed MS research), and a letter from their advisor stating that the advisor agrees
to take on the candidate as an MS student, how the candidate would be a good fit for them and why candidate's research topic would be suitable.

For information specific to the accelerated Environmental Science and Policy, MS (p. 696), see Graduate Admissions on the department's website (http://esp.gmu.edu/academic-programs/graduate/admissions).

**Reserve Graduate Credits**

Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate environmentally-focused graduate coursework may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master's program and must then complete an additional 27 credits to receive the master's degree.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition form found on the Office of the University Registrar website (http://registrar.gmu.edu/forms) (as noted above).

Students may take up to 6 additional environmentally-focused graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, an MS could be completed with 21 post-bachelor’s credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department.

### Environmental Science and Public Policy, PhD

**Banner Code:** SC-PHD-EVPP

**Joris van der Ham**

Email: jvanderh@gmu.edu  
Website: esp.gmu.edu

Our graduates contribute to the solution of complex environmental problems, which require the development of knowledge and skills in the collection, analysis, and interpretation of scientific data, as well as in the integration of scientific understanding into the public policy process. This interdisciplinary program draws on faculty and expertise from the Department of Environmental Science and Policy’s core faculty, as well as faculty from across the university. This includes the Department of Biology (p. 641), the Department of Atmospheric, Oceanic and Earth Sciences (p. 620), the School of Systems Biology (p. 786), the Department of Chemistry and Biochemistry (p. 661), the Department of Economics (p. 345), the Department of Geography and Geoinformation Science (p. 715), and the Department of Sociology and Anthropology (p. 496), as well as the Schar School of Policy and Government (p. 961), the School of Integrative Studies (p. 574), the Volgenau School of Engineering (p. 1011), and the College of Education and Human Development (p. 161) in addition to others.

This has been designated a Green Leaf program (p. 107).

**Admissions & Policies**

### Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog. Additionally, information on the admission of international students can be found in the Admission of International Students (p. 71) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Eligibility and Application Requirements**

Applicants should have a bachelor’s degree with an overall GPA of at least 3.00. They should have taken at least two semesters of chemistry and three semesters of biology, including a course in ecology.

Applicants to the PhD program should have an advanced degree (e.g. MA, MS, veterinary, or law) in a relevant field or exceptional undergraduate academic and research accomplishments.

Applicants should submit the following:

- Scores on the verbal and quantitative sections of the GRE for applicants that do not hold an advanced degree (e.g. MA, MS, veterinary, or law) or higher from a regionally accredited institution in the USA.
- Three letters of recommendation, with at least two from individuals with doctorates.
- Current résumé.
- Substantial statement of interest that includes a description of the specific area of proposed dissertation research, the potential focus (environmental science or environmental public policy), contacts that have been made with potential faculty advisors, and an explanation of career and research goals.
- Letter of endorsement from a prospective advisor to include how your research interests coincide with that of your advisor.

All students must obtain the consent of a faculty member willing to serve as an advisor prior to being fully admitted to the program. Admission decisions are based on the student’s qualifications and the availability of a faculty advisor. An advisor may be changed by mutual consent of student and advisor, or by petition to the graduate program director and the associate dean for student affairs in the College of Science (p. 613). Applicants with questions should contact the ESP Graduate Programs Office (703-993-3187).

### Science, Ecology, and Social Science Background

**Science Background**

Applicants who lack college-level coursework in biology and chemistry (two semesters of each) will be expected to complete a two semester sequence of introductory graduate-level environmental chemistry and biology courses as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 506</td>
<td>Science of the Environment I</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 507</td>
<td>Science of the Environment II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Admissions & Policies**

### Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog. Additionally, information on the admission of international students can be found in the Admission of International Students (p. 71) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Eligibility and Application Requirements**

Applicants should have a bachelor’s degree with an overall GPA of at least 3.00. They should have taken at least two semesters of chemistry and three semesters of biology, including a course in ecology.

Applicants to the PhD program should have an advanced degree (e.g. MA, MS, veterinary, or law) in a relevant field or exceptional undergraduate academic and research accomplishments.

Applicants should submit the following:

- Scores on the verbal and quantitative sections of the GRE for applicants that do not hold an advanced degree (e.g. MA, MS, veterinary, or law) or higher from a regionally accredited institution in the USA.
- Three letters of recommendation, with at least two from individuals with doctorates.
- Current résumé.
- Substantial statement of interest that includes a description of the specific area of proposed dissertation research, the potential focus (environmental science or environmental public policy), contacts that have been made with potential faculty advisors, and an explanation of career and research goals.
- Letter of endorsement from a prospective advisor to include how your research interests coincide with that of your advisor.

All students must obtain the consent of a faculty member willing to serve as an advisor prior to being fully admitted to the program. Admission decisions are based on the student’s qualifications and the availability of a faculty advisor. An advisor may be changed by mutual consent of student and advisor, or by petition to the graduate program director and the associate dean for student affairs in the College of Science (p. 613). Applicants with questions should contact the ESP Graduate Programs Office (703-993-3187).

### Science, Ecology, and Social Science Background

**Science Background**

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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 506</td>
<td>Science of the Environment I</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 507</td>
<td>Science of the Environment II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>
These introductory courses cannot be added to the graduate program of study; they will be additional credits to the degree's 72 credit total.

**Ecology Background**
Students without previous coursework in general ecology will be required to take the following introductory course, which may be included in the graduate program of study.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 607</td>
<td>Fundamentals of Ecology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Social Science Background**
Students with little previous coursework in the social sciences will be required to take the following introductory course, which may be included in the graduate program of study.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 608</td>
<td>Introduction to Environmental Social Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Policies**
For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

**Reduction of Credits**
For students entering the doctoral program with a master's degree in an academically related field from a regionally-accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the college's associate dean for student affairs. See AP.6.5.2 Reduction of Credits (p. 91) for more information.

**Requirements**

**Degree Requirements**
Total credits: 72

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 704) tab for specific policies related to this program.

**Doctoral Coursework**
Students are required to complete a coursework proposal by the end of their second semester. The coursework proposal must be approved by the student’s advisor and the graduate program director. In keeping with the general philosophy inherent in a PhD degree, students adopt an individual program that focuses on a specific area of research. The student’s coursework must provide the knowledge base from which an original research project in their specific areas of interest can be successfully completed.

**Natural Sciences**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select at least 12 credits in biology, chemistry, environmental science, geology, geography, or environmental engineering</td>
<td>12</td>
</tr>
</tbody>
</table>

**Public Policy**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select at least 12 credits in public affairs, economics, sociology, and/or business. A course in environmental law is also required as part of this category</td>
<td>12</td>
</tr>
</tbody>
</table>

**Research Methods and Technology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select at least 6 credits in statistics, remote sensing, geographic information systems, analytical chemistry, molecular biology, modeling, or information technology</td>
<td>6</td>
</tr>
</tbody>
</table>

**Coursework Focus**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students select a program of study emphasis with one of two focuses.</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Environmental Science</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select 12 credits in natural science coursework</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Public Policy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select 12 credits of public policy coursework</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If necessary after doctoral coursework and dissertation research, students take additional electives to bring the total number of credits to 72.</td>
<td>2-14</td>
</tr>
</tbody>
</table>

**Dissertation Committee**
Before the end of the fourth semester of coursework, in consultation with their advisor, the student forms a dissertation committee of at least four members. Three of the committee members must be from the Mason graduate faculty. The fourth member may be from Mason or may be from outside the university provided that they hold a terminal degree in an
appropriate field. The dissertation committee must be approved by the college’s associate dean for student affairs.

Program of Study
After reviewing the student’s coursework proposal, progress to date, and area of research, the committee makes final recommendations concerning coursework that will be codified in the program of study to be signed by all committee members and the graduate program director. Students are advised to work closely with their advisor and committee to develop the coursework program in order to facilitate the process of course selection. During the duration of graduate study, a student must meet with the full dissertation committee at least once a year.

Qualifying Exams
On completion of all or nearly all coursework, students may request to take the qualifying or candidacy exam. The qualifying exam has both written and oral components. The written portion consists of questions submitted by each member of the dissertation committee. Successful completion of the written exam should be followed by the oral portion within one month. The qualifying exam may be repeated once at the discretion of the student’s committee.

Advancement to Candidacy
Upon approval of the program of study, completion of all or nearly all coursework, successful completion of the qualifying exam, and the approval of the dissertation proposal by the dissertation committee, the student is recommended for advancement to candidacy by the graduate program director. Students must advance to candidacy within five years of admission to the program.

Dissertation Research
Students must complete a dissertation. This may be accomplished by taking EVPP 999 Doctoral Dissertation Research alone, or in combination with EVPP 998 Doctoral Dissertation Proposal. However, at least six of these credits must be taken as EVPP 999 Doctoral Dissertation Research. Students working on dissertation research must register for a minimum of 3 credits of EVPP 999 Doctoral Dissertation Research per semester (excluding summers) until they have completed the minimum number of dissertation research credits. Then, they must register for 1 credit of EVPP 999 Doctoral Dissertation Research until the dissertation is complete and has been officially submitted to the library.

The dissertation is an original written work, demonstrating mastery of subject matter, methodologies, and conceptual foundations on a specific problem in the general field of environmental science and public policy. The dissertation generally involves collection and analysis of original data or the substantially new analysis and reinterpretation of existing data.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>12-24</td>
</tr>
<tr>
<td>EVPP 999</td>
<td>Doctoral Dissertation Research (at least 6 credits)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>12-24</strong></td>
</tr>
</tbody>
</table>

Dissertation Research and Defense
Before students may enroll in EVPP 999 Doctoral Dissertation Research, they must have advanced to candidacy and have a dissertation proposal approved by the dissertation committee, graduate program director, department chairperson, and the dean of the College of Science. Students must present the completed dissertation in a public seminar and defend the work before the dissertation committee and others who wish to attend. Awarding of the degree is contingent on approval of the dissertation by the dissertation committee, graduate program director, department chairperson, and the dean of the College of Science. The dissertation and defense must be completed a total of nine years from the date of first enrollment in the doctoral program.

Environmental and Sustainability Studies, BA (COS)
Banner Code: LA-BA-EVSS

Joris L. van der Ham, Undergraduate Coordinator
Email: jvanderh@gmu.edu
Website: esp.gmu.edu

The BA in Environmental and Sustainability Studies is a joint program between the College of Humanities and Social Sciences (p. 309) and the College of Science (p. 613).

This degree provides students with theoretical and practical knowledge of three aspects of environmental and sustainability studies: people, prosperity, and planet. In addition to required core courses, students develop more in-depth knowledge in their choice of concentration. This degree prepares students for employment and graduate study in fields related to social justice, business and public policy, and environmental protection as they relate to the environment and sustainability.

This is a Green Leaf program (p. 107).

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies
Students pursuing this degree must complete a minimum of 60 credits within the major, with a minimum grade of 2.00 in each course.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements
Total credits: minimum 120

This is a Green Leaf program.

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 577) tab.
Of the credits required for this degree, 14 credits simultaneously fulfill core requirements for the major and Mason Core requirements, and, depending on the concentration and electives chosen, up to 9 credits may simultaneously fulfill Mason Core requirements and college BA requirements.

Core Courses in the Major

Core requirements may satisfy Mason Core requirements in natural science (EVPP 110 The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142), EVPP 111 The Ecosphere: An Introduction to Environmental Science II (Mason Core) (p. 142)) and the college BA requirement for social and behavioral science (GOVT 361 Introduction to Environmental Policy).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 377</td>
<td>Applied Ecology</td>
<td>3</td>
</tr>
</tbody>
</table>

And three courses from one of the following groups: 11-12

- EVPP 110 & EVPP 111 & EVPP 336: The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142) and The Ecosphere: An Introduction to Environmental Science II (Mason Core) (p. 142) and Human Dimensions of the Environment
- EVPP 110 & EVPP 112 & EVPP 113 & EVPP 336: The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142) and Ecosphere: Introduction to Environmental Science II-Lecture and Ecosphere: Introduction to Environmental Science II–Lab and Human Dimensions of the Environment
- EVPP 210 & EVPP 301 & EVPP 302: Environmental Biology: Molecules and Cells and Environmental Science: Biological Diversity and Ecosystems and Environmental Science: Biomes and Human Dimensions

Individual and Group Behavior

- INTS 334: Environmental Justice (Mason Core) (p. 142) 4

Business and Public Policy

- ECON 105: Environmental Economics for the Citizen (Mason Core) (p. 142) 3
- or ECON 100: Economics for the Citizen (Mason Core) (p. 142)
- EVPP 322: Business and Sustainability 3

Statistics

- Select one course from the following: 3-4
  - SOCI 313: Statistics for the Behavioral Sciences (Mason Core) (p. 142)
  - BIOL 214: Biostatistics for Biology Majors
  - STAT 250: Introductory Statistics I (Mason Core) (p. 142)

Integration, Analysis, Innovation

- INTS 210: Sustainable World (Mason Core) (p. 142) 4
- EVPP 480: Sustainability in Action (Mason Core) (p. 142) 4

Select one from the following:

- INTS 390: International Internship (minimum of 3 credits required)
- INTS 490: Internship (minimum of 3 credits required)

Total Credits 41-43

1 Satisfies the college BA requirement for social and behavioral science.

Concentration in the Major

Available Concentrations

- Concentration in Business and Sustainability (BUSU) (p. 707)
- Concentration in Climate Change and Society (CCSO) (p. 708)
- Concentration in Conservation and Sustainability (CSUS) (p. 708)
- Concentration in Environmental Policy and Economics (EVPE) (p. 709)
- Concentration in Equity and Environmental Justice (EQEJ) (p. 709)
- Concentration in Sustainable Food and Agriculture (SFG) (p. 709)

Concentration in Business and Sustainability (BUSU)

The requirements for this concentration, depending on the electives chosen, may satisfy the college BA requirement in philosophy and religious studies (PHIL 243 Global Environmental Ethics (Mason Core) (p. 142), PHIL 305 Business Ethics).

Students who have already taken and received credit for MGMT 303 Principles of Management or OM 303 Operations Management Management shall substitute MGMT 303 Principles of Management for MBUS 301 Managing People and Organizations in a Global Economy and OM 303 Operations Management for MBUS 306 Managing Projects and Operations. Both courses cannot be taken for credit. Students who have taken and received credit for both ACCT 203 Survey of Accounting and FNAN 303 Financial Management shall substitute the combination for MBUS 300 Accounting in a Global Economy. All three courses cannot be taken for credit.

For this concentration, students may substitute OM 211 Honors Statistical Analysis for Management for SOCI 313 Statistics for the Behavioral Sciences (Mason Core) (p. 142) (core requirement for degree). Students cannot receive credit for more than one of these.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBUS 300</td>
<td>Accounting in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 306</td>
<td>Managing Projects and Operations</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Course

Select one course (3 credits) from the following:

- GOVT 353: Social Entrepreneurship
- IT 495: Turning Ideas into Successful Companies
- MBUS 304: Entrepreneurship: Starting and Managing a New Enterprise
**Concentration in Conservation and Sustainability (CSUS)**

Smithsonian-Mason Program

Students complete one of the programs offered through the Smithsonian-Mason School of Conservation in cooperation with the Smithsonian Conservation Biology Institute.

### Conservation, Biodiversity and Society Option (16 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 320</td>
<td>Conservation in Practice</td>
<td>3</td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td>3</td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td>4</td>
</tr>
<tr>
<td>CONS 410</td>
<td>Human Dimensions in Conservation (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONS 490</td>
<td>RS: Integrated Conservation Strategies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 16

### Wildlife, Ecology, and Conservation Option (16 credits)

Offered only in Fall semesters, students complete four required courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 404</td>
<td>Biodiversity Monitoring</td>
<td>4</td>
</tr>
<tr>
<td>CONS 405</td>
<td>Landscape and Macrosystems Ecology</td>
<td>4</td>
</tr>
<tr>
<td>CONS 496</td>
<td>Research in Conservation (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 16

### Endangered Species and Conservation Option (16 credits)

Offered only in Spring semesters, students complete four required courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONS 400</td>
<td>Conservation Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CONS 406</td>
<td>Small Population Management</td>
<td>4</td>
</tr>
<tr>
<td>CONS 491</td>
<td>RS: Conservation Management Planning (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CONS 496</td>
<td>Research in Conservation (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 16

### Three Credits

Select a minimum of 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 472</td>
<td>Introductory Animal Behavior</td>
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<tr>
<td>EVPP 401</td>
<td>Integrated Environmental Assessment</td>
<td></td>
</tr>
<tr>
<td>EVPP 419</td>
<td>Marine Mammal Biology and Conservation</td>
<td></td>
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<tr>
<td>EVPP 421</td>
<td>Marine Conservation</td>
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</tr>
<tr>
<td>EVPP 430</td>
<td>Fundamentals of Environmental Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 211</td>
<td>Introduction to Conservation Studies (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>INTS 311</td>
<td>The Mysteries of Migration: Consequences for Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9
George Mason University

### Concentration in Environmental Policy and Economics (EVPE)
The requirements for this concentration satisfy the Mason Core requirement in social and behavioral science (ECON 104 Contemporary Macroeconomic Principles (Mason Core) (p. 142)) and, depending on the elective chosen, may fulfill the college BA requirement in non-Western culture (ECON 362 African Economic Development (Mason Core) (p. 142)).

#### Required Courses
Completion of these courses will satisfy the Mason Core social and behavioral science requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON 104</td>
<td>Contemporary Macroeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 338</td>
<td>Economics of Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 362</td>
<td>Intermediate Environmental Policy</td>
<td>3</td>
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<tr>
<td>or GOVT 362</td>
<td>Intermediate Environmental Policy</td>
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<tr>
<td>GOVT 351</td>
<td>Administration in the Political System</td>
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</tbody>
</table>

Total Credits 12

#### Six Credits
Select a minimum of six credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CONF 340</td>
<td>Global Conflict Analysis and Resolution (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
<td></td>
</tr>
<tr>
<td>ECON 311</td>
<td>Intermediate Macroeconomics</td>
<td></td>
</tr>
<tr>
<td>ECON 330</td>
<td>Public Finance</td>
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<tr>
<td>ECON 345</td>
<td>Introduction to Econometrics</td>
<td></td>
</tr>
<tr>
<td>ECON 360</td>
<td>Economics of Developing Areas (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ECON 412</td>
<td>Game Theory and Economics of Institutions</td>
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</tr>
<tr>
<td>EVPP 337</td>
<td>Environmental Policy Making in Developing Countries</td>
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<td>EVPP 396</td>
<td>Directed Topic in Environmental Science and Policy</td>
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<tr>
<td>EVPP 401</td>
<td>Integrated Environmental Assessment</td>
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<tr>
<td>EVPP 432</td>
<td>Energy Policy</td>
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<tr>
<td>GEOL 420</td>
<td>Earth Science and Policy (Mason Core) (p. 142)</td>
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<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
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<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
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</tr>
<tr>
<td>GOVT 339</td>
<td>Issues in the Politics of Advanced Industrial Societies</td>
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<tr>
<td>GOVT 343</td>
<td>International Political Economy</td>
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<tr>
<td>GOVT 357</td>
<td>Urban Planning</td>
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</table>

Total Credits 6

### Concentration in Equity and Environmental Justice (EQEJ)

#### Required Courses

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<th>Code</th>
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<tr>
<td>EVPP 362</td>
<td>Intermediate Environmental Policy</td>
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<tr>
<td>EVPP 436</td>
<td>The Human Dimensions of Global Climate Change</td>
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<tr>
<td>INTS 336</td>
<td>Poverty, Wealth and Inequality in the US (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
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</table>

Total Credits 12

#### Six Credits
Select a minimum of six credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>CONF 394</td>
<td>Human Rights and Inequality</td>
<td>6</td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
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<tr>
<td>GOVT 445</td>
<td>Human Rights</td>
<td></td>
</tr>
<tr>
<td>INTS 304</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 331</td>
<td>Animal Rights and Humane Education</td>
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</tr>
<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
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<tr>
<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
<td></td>
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<tr>
<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
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<tr>
<td>Other course work with advisor approval</td>
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</table>

Total Credits 6

### Concentration in Sustainable Food and Agriculture (SFG)

#### Required Courses

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>INTS 370</td>
<td>Sustainable Food Systems</td>
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<tr>
<td>INTS 371</td>
<td>Food Systems and Policy (Mason Core) (p. 142)</td>
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<tr>
<td>INTS 470</td>
<td>Professional Pathways in Sustainable Food Systems</td>
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</table>

Total Credits 10
Eight Credits

Select a minimum of eight credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 366</td>
<td>Food and Human Evolution</td>
<td></td>
</tr>
<tr>
<td>ANTH 376</td>
<td>Food and Culture</td>
<td></td>
</tr>
<tr>
<td>BIOL 344</td>
<td>Plant Diversity and Evolution</td>
<td></td>
</tr>
<tr>
<td>BIOL 345</td>
<td>Plant Ecology</td>
<td></td>
</tr>
<tr>
<td>EVPP 436</td>
<td>The Human Dimensions of Global Climate Change</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 338</td>
<td>Animal Rights and Humane Education</td>
<td></td>
</tr>
<tr>
<td>INTS 402</td>
<td>Plants and People - Sustenance, Ceremony, and Sustainability</td>
<td></td>
</tr>
<tr>
<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core) (p. 142)</td>
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<tr>
<td>NUTR 408</td>
<td>Food Security</td>
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<tr>
<td>Other course work with advisor approval</td>
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</tr>
</tbody>
</table>

Total Credits: 8

Writing-Intensive Requirement

The university requires all students to complete at least one course designated as “writing intensive” in their major at the 300 level or above. Students majoring in environmental and sustainability studies should consult an advisor to learn how to fulfill this requirement.

Upper Level Requirement

Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

Additional Electives

Any remaining credits may be completed with elective courses to bring the degree total to 120.

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL</td>
<td>Select 3 credits from the following: 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHIL (p. 2044)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RELI (p. 2144)</td>
<td></td>
</tr>
</tbody>
</table>

1 Note that the following courses may not be used to fulfill this requirement:

- PHIL 323 Classical Western Political Theory
- PHIL 324 Modern Western Political Theory
- PHIL 327 Contemporary Western Political Theory
- PHIL 393 Humanities College to Career
- PHIL 460 Senior Seminar in Philosophy, Politics, and Economics

Additionally, PHIL 253 Philosophy and Literature (Mason Core) (p. 142) and RELI 235 Religion and Literature (Mason Core) (p. 142) cannot be used to fulfill both the philosophy/religious studies requirement and the Mason Core literature (p. 147) requirement.

Social and Behavioral Sciences

Select 3 credits of social and behavioral sciences from the following (additional to the Mason Core social and behavioral sciences requirement) 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 1212</td>
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</tr>
<tr>
<td>CRIM</td>
<td>(p. 1514)</td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>(p. 1564)</td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td>(p. 1774)</td>
<td></td>
</tr>
<tr>
<td>HIST</td>
<td>(p. 1818)</td>
<td></td>
</tr>
<tr>
<td>LING</td>
<td>(p. 1896)</td>
<td></td>
</tr>
<tr>
<td>PSYC</td>
<td>(p. 2074)</td>
<td></td>
</tr>
<tr>
<td>SOCI</td>
<td>(p. 2167)</td>
<td></td>
</tr>
</tbody>
</table>

Or choose from the following GGS courses:

- GGS 101 Major World Regions (Mason Core) (p. 142)
- GGS 103 Human Geography (Mason Core) (p. 142)
- GGS 110 Introduction to Geoinformation Technologies
- GGS 301 Political Geography
The two courses used to fulfill the combined college and Mason Core requirements must be from different disciplines in the social and behavioral sciences.

HIST 100 History of Western Civilization (Mason Core) (p. 142) and HIST 125 Introduction to World History (Mason Core) (p. 142) may not be used to fulfill this requirement.

Foreign Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Intermediate-level proficiency in one foreign language, fulfilled by:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completing a course in a foreign language numbered 202 (or higher level courses taught in the language) (p. 424)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or achieving a satisfactory score on an approved proficiency test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Or completing the following ASL three course sequence:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDSE 115 American Sign Language (ASL) I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDSE 116 American Sign Language (ASL) II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDSE 219 American Sign Language (ASL) III</td>
<td></td>
</tr>
</tbody>
</table>

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Non-Western Culture

Select 3 credits of an approved course in the study of a non-Western culture (additional to the Mason Core requirement in global understanding)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits (additional to Mason Core Global Understanding requirement)</td>
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<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
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<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
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<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
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<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td>3</td>
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<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
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<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
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<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
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<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
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<td>Arts of China (Mason Core) (p. 142)</td>
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<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
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<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
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<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
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<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
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<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<tr>
<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
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<td>GGS 316</td>
<td>Geography of Latin America</td>
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<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<td>GGS 399</td>
<td>Select Topics in GGS</td>
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</table>
GOVT 328  Global Political Theory 3
GOVT 332  Government and Politics of the Middle East and North Africa 3
GOVT 333  Government and Politics of Asia 3
GOVT 338  Government and Politics of Russia 3
GOVT 340  Central Asian Politics 3
GOVT 341  Chinese Foreign Policy 3
GOVT 345  Islam and Politics 3
GOVT 433  Political Economy of East Asia 3

HIST 251  Survey of East Asian History (Mason Core) (p. 142) 3
HIST 252  Survey of East Asian History (Mason Core) (p. 142) 3
HIST 261  Survey of African History (Mason Core) (p. 142) 3
HIST 262  Survey of African History (Mason Core) (p. 142) 3
HIST 271  Survey of Latin American History (Mason Core) (p. 142) 3
HIST 272  Survey of Latin American History (Mason Core) (p. 142) 3
HIST 281  Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 282  Survey of Middle Eastern Civilization (Mason Core) (p. 142) 3
HIST 326  Stalinism 3
HIST 327  The Soviet Union and Russia Since World War II 3
HIST 328  Rise of Russia (Mason Core) (p. 142) 3
HIST 329  Modern Russia and the Soviet Union (Mason Core) (p. 142) 3
HIST 353  History of Traditional China 3
HIST 354  Modern China (Mason Core) (p. 142) 3
HIST 356  Modern Japan (Mason Core) (p. 142) 3
HIST 357  Postwar Japan (Mason Core) (p. 142) 3
HIST 358  Post-1949 China (Mason Core) (p. 142) 3
HIST 360  History of South Africa (Mason Core) (p. 142) 3
HIST 364  Revolution and Radical Politics in Latin America (Mason Core) (p. 142) 3
HIST 365  Conquest and Colonization in Latin America (Mason Core) (p. 142) 3
HIST 366  Comparative Slavery 3
HIST 367  History, Fiction, and Film in Latin America 3
HIST 387  Topics in Global History (Mason Core) (p. 142) 3-6
HIST 426  The Russian Revolution 3
HIST 460  Modern Iran (Mason Core) (p. 142) 3
HIST 461  Arab-Israeli Conflict 3
HIST 462  Women in Islamic Society (Mason Core) (p. 142) 3
HIST 465  The Middle East in the 20th Century 3
JAPA 310  Japanese Culture in a Global World (Mason Core) (p. 142) 3
JAPA 340  Topics in Japanese Literature (Mason Core) (p. 142) 3
KORE 320  Korean Popular Culture in a Global World 3
MUSI 103  Musics of the World (Mason Core) (p. 142) 3
RELI 211  Religions of the West (Mason Core) (p. 142) 3
RELI 212  Religions of Asia (Mason Core) (p. 142) 3
RELI 240  Death and the Afterlife in World Religions 3
RELI 272  Islam 3
RELI 313  Hinduism (Mason Core) (p. 142) 3
RELI 314  Chinese Philosophies and Religious Traditions 3
RELI 315  Buddhism (Mason Core) (p. 142) 3
RELI 337  Mysticism: East and West 3
RELI 365  Muhammad: Life and Legacy 3
RELI 374  Islamic Thought (Mason Core) (p. 142) 3
RELI 375  Qur’an and Hadith 3
RELI 379  Islamic Law, Society, and Ethics 3
RELI 387  Islam, Democracy, and Human Rights 3
RELI 490  Comparative Study of Religions (Mason Core) (p. 142) 3
RUSS 353  Russian Civilization (Mason Core) (p. 142) 3
RUSS 354  Contemporary Post-Soviet Life (Mason Core) (p. 142) 3

1 A course used to fulfill the Mason Core global understanding requirement may not be simultaneously used to satisfy this college-level requirement. A course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core requirements, college-level requirements, or requirements for the major). Additional information on waivers can be found at the Office of Undergraduate Academic Affairs (http://chssundergrad.gmu.edu).

Accelerated Master’s

Bachelor’s Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

Overview
Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master’s in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).
Selected Majors
Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/ Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Sustainability Studies Minor
Banner Code: SSTS
Joris L. van der Ham, Undergraduate Coordinator
Email: jvanderh@gmu.edu
Website: esp.gmu.edu

The core principle of sustainability is the desire to meet the basic material needs of the current generation without compromising the ability of future generations to meet their needs. In order to achieve this goal, we must recognize and address the conflicts and trade-offs involved in balancing environmental integrity, social equity, and economic stability. Such complex work necessarily involves contributions from a wide range of disciplines and it also requires a re-examination of the relationship between human value systems, cultural practices, and the associated long-term implications for the ecosystem.

This is a Green Leaf program (p. 107).

Admissions & Policies
Policies
Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87).

Requirements
Minor Requirements
Total credits: 16
This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 713) tab for specific policies related to this program.

Candidates for the minor must complete coursework with a minimum GPA of 2.00.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 480</td>
<td>Sustainability in Action (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>INTS 210</td>
<td>Sustainable World (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>8</td>
</tr>
</tbody>
</table>

Electives
A maximum of two courses from a single department or program can be counted for elective credit. Preapproved courses are listed here and others may be substituted. See the undergraduate coordinator for additional electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 110</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core) (p. 142)</td>
<td>8</td>
</tr>
<tr>
<td>EVPP 201</td>
<td>Environment and You: Issues for the Twenty-First Century (Mason Core) (p. 142)</td>
<td>8</td>
</tr>
<tr>
<td>EVPP 322</td>
<td>Business and Sustainability</td>
<td>8</td>
</tr>
<tr>
<td>EVPP 336</td>
<td>Human Dimensions of the Environment</td>
<td>8</td>
</tr>
<tr>
<td>EVPP 337</td>
<td>Environmental Policy Making in Developing Countries</td>
<td>8</td>
</tr>
<tr>
<td>EVPP 338</td>
<td>Economics of Environmental Policy</td>
<td>8</td>
</tr>
</tbody>
</table>
Sustainable enterprises are businesses that are financially prosperous and seek to benefit the environment and society. They measure success in terms of a "triple bottom line" that focuses on 3 P’s:

• **Prosperity** - Business profitability/value
• **Planet** - Ecological integrity
• **People** - Social equity

Sustainable enterprises balance all 3 P’s simultaneously, and view solutions to environmental and social problems as investments and business opportunities. Therefore, developing sustainable business strategies requires innovation and the identification of solutions that frequently "leapfrog" existing products, technologies, and best management practices.

The minor emphasizes the private sector as a critical player in helping to solve pressing environmental and social problems, while capitalizing on market mechanisms and competitive opportunities. Students who obtain the Sustainable Enterprise Minor will obtain a business understanding of sustainability innovation, ethical foundations, and regulatory framework to pursue private sector triple bottom line strategies.

This is a Green Leaf program (p. 107).

### Admissions & Policies

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).
For policies governing all undergraduate programs, see AP 5 Undergraduate Policies (p. 87).

## Requirements

### Minor Requirements

Total credits: 17-20

This is a Green Leaf program.

Students should refer to the Admissions & Policies (p. 714) tab for specific policies related to this program.

Students must successfully complete the following courses with a minimum GPA of 2.00.

### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 322</td>
<td>Business and Sustainability</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 480</td>
<td>Sustainability in Action (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 7

### Electives

#### Environmental Policy and Economics

Select at least 3 credits from the following: 3

- EVPP 361 Introduction to Environmental Policy
- EVPP 362 Intermediate Environmental Policy
- EVPP 432 Energy Policy
- EVPP 490 Special Topics in Environmental Science and Policy (if the topic is applicable consult an advisor for guidance)
- ECON 335 Environmental Economics

#### Business and Innovation

Select at least 3-4 credits from the following: 3-4

- MBUS 300 Accounting in a Global Economy
- MBUS 301 Managing People and Organizations in a Global Economy
- MBUS 305 Introduction to International Business (Mason Core) (p. 142)
- MBUS 306 Managing Projects and Operations
- PSYC 335 Psychology of Creativity and Innovation

#### Social Responsibility and Ethics

Select 3 credits from the following: 3

- PHIL 305 Business Ethics
- PHIL 343 Topics in Environmental Philosophy (Mason Core) (p. 142) (if the topic is applicable consult an advisor for guidance)

Total Credits: 9-10

---

1. School of Business students should consult with their advisors regarding MBUS coursework.

### Internship

The plan of work for this internship must be approved by the undergraduate coordinator.

Students who are currently employed may request that the internship requirement be waived on the basis of their job experience. Instead of the internship, these students will be required to complete a 3-credit independent study with the minor’s director or another faculty member. This alternative will entail independent research by applying sustainable enterprise principles and practices in an analysis of the student’s work place, and will culminate in a final project.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVPP 395</td>
<td>Undergraduate Research in Environmental Science and Policy</td>
<td>1-3</td>
</tr>
<tr>
<td>or EVPP 494</td>
<td>Internship</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 1-3

### Department of Geography and Geoinformation Science

Phone: 703-993-1210
703-993-1212
Email: ggs@gmu.edu
Website: ggs.gmu.edu

Located in the heart of Fairfax, just a few miles from Washington DC, the Department of Geography and Geoinformation Science (GGS) offers an outstanding environment to study and perform cutting-edge research in remote sensing, geography, geoinformatics, Earth systems science, and their various sub-disciplines.

With a variety of educational offerings, ranging from undergraduate programs to graduate certificates and M.S. and Ph.D. programs, a strong and broad research agenda, and superb name recognition within the leading agencies and companies in our field, our department is a premier choice for academic education.

### Undergraduate Programs

The Department of Geography and Geoinformation Science offers a Geography, BA (p. 726) and a Geography, BS (p. 733). The department also offers accelerated master’s program opportunities for the Geographic and Cartographic Sciences, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms) and the Geoinformatics and Geospatial Intelligence, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geoinformatics-geospatial-intelligence-ms). Additionally, the department offers the GeoManagement Undergraduate Certificate (p. 722).

### Undergraduate Certificates

The GeoManagement Undergraduate Certificate (p. 722) accommodates students who are pursuing a degree in the Department of Geography and Geoinformation Science who also wish to acquire more knowledge on how to manage people and organizations dealing with GIS in a global economy. By understanding marketing terms, financial matters, and also having a good understanding of how to manage people, students will be well prepared to face challenges in multidisciplinary GIS-oriented environments. All courses are available online.
Minors
For students pursuing any major in the university, the department offers a Geography Minor (p. 736) (fully available online), a Geographic Information Systems Minor (p. 723) (research and scholarship intensive), as well as an Urban Informatics Minor (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/urban-informatics-minor).

Graduate Degrees
Graduate programs are distinguished by an emphasis on cutting-edge research and their applications toward solving practical problems in human and environmental realms. Degree options include three master’s degrees and one doctoral program.

Graduate Certificates
For students wishing to pursue graduate-level specialization and skill advancement in specific, focused application areas the department offers the following graduate-level certificates: Data Journalism Graduate Certificate (p. 717), Environmental GIS and Biodiversity Conservation Graduate Certificate (p. 721), Geographic Information Science Graduate Certificate (p. 722), G (p. 722)espatial Intelligence Graduate Certificate (p. 739), and Remote Sensing and Image Processing Graduate Certificate (p. 740). Students may take these as stand-alone certificates or, under certain circumstances, pursue them concurrently with another graduate degree program. Certificate coursework may be applicable toward other graduate degree requirements. In order to gain admission into a graduate certificate program, students must hold a bachelor’s degree from a regionally accredited institution and must apply for and be admitted into the corresponding program.

Master’s Programs
The Earth Systems Science, MS (p. 718) (offered jointly with the Department of Atmospheric, Oceanic and Earth Sciences (p. 620)) provides a global systems approach to the study of the atmosphere, hydrosphere and lithosphere. The degree’s emphasis is on the observation and quantitative analysis of earth systems. The Geographic and Cartographic Sciences, MS (p. 724) focuses on techniques to compile, display and analyze spatial data. The Geoinformatics and Geospatial Intelligence, MS (p. 737) focuses primarily on computational approaches that support the synthesis and analysis of diverse data types in order to identify and monitor complex events and phenomena that manifest themselves over space and time.

Earth Systems and Geoinformation Sciences, PhD
The Earth Systems and Geoinformation Sciences, PhD (p. 719) combines and extends the three scientific avenues mapped by our master’s programs to provide a thorough and interdisciplinary approach to doctoral studies.

Distance Education
While all courses and programs listed are offered in traditional face-to-face on campus teaching, the department offers select programs through fully online modules. These online programs include an online version of our Geography Minor (p. 736), Geography BA (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geography-ba), Geography BS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geography-bs), GeoManagement Undergraduate Certificate (p. 722), and an online version of the Geospatial Intelligence Graduate Certificate (p. 739).

Courses Available Online
Individual courses which are currently available online (in addition to their traditional delivery modes) are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 102</td>
<td>Physical Geography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 121</td>
<td>Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GGS 122</td>
<td>Dynamic Geosphere and Ecosphere</td>
<td>4</td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 312</td>
<td>Physical Climatology</td>
<td>3</td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td>3</td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td>3</td>
</tr>
<tr>
<td>GGS 416</td>
<td>Satellite Image Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 462</td>
<td>Web Mapping</td>
<td>3</td>
</tr>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 650</td>
<td>Introduction to GIS Algorithms and Programming</td>
<td>3</td>
</tr>
<tr>
<td>GGS 680</td>
<td>Earth Image Processing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 692</td>
<td>Web-based Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Faculty

Department Faculty
Professors
Agouris (dean), Di, Haack, Houser, Pfoser (chair), Qu, Stefanidis, Wong, C. Yang

Associate Professors
Croitoru (online coordinator), Fuhrmann, Leslie, Rice, D. Sun, R. Yang (graduate coordinator)

Assistant Professors
Burtch (undergraduate coordinator), Komwa, Rosenfeld, Wessels, Züfle

Research or Contract Professors
Batarseh, Gkountouna, Li, M. Sun

Adjunct Faculty
Dillon, Grymes, Komwa, McGlone, Resmini, Ward

Requirements & Policies

Requirements
Writing-Intensive Requirement
The university requires all students to complete at least one course designated as "writing intensive" in their majors at the 300 level or above.
Students majoring in geography fulfill this requirement by successfully completing GGS 415 Seminar in Geography.

**Policies**

Students are governed by the university’s policies (p. 77).

**GGS Lab Use**

Access to GGS lab space is contingent upon active student status and registration in GGS courses. Labs are key card accessible and only authorized students may use the labs for academic work.

**Non-degree Status**

Applicants who have not been admitted to a specific graduate degree or certificate program and still wish to attend courses may apply for non-degree studies. This is intended for students who do not seek a specific degree. These students must apply for non-degree status and be admitted through a process comparable to the one followed by degree-seeking students.

While it may be possible to transfer some of the credits earned in non-degree status to a degree program, such transfers are not automatic. Non-degree students who intend to transfer their credits to a degree program should discuss this in a timely manner with the appropriate department coordinator. Further information can be found in the Non-degree Enrollment (p. 74) section of this catalog.

**Programs**

- Data Journalism Graduate Certificate
- Earth Systems Science, MS (GGS)
- Earth Systems and Geoinformation Sciences, PhD
- Environmental GIS and Biodiversity Conservation Graduate Certificate
- GeoManagement Undergraduate Certificate
- Geographic Information Science Graduate Certificate
- Geographic Information Systems Minor
- Geographic and Cartographic Sciences, MS
- Geography Minor
- Geography, BA
- Geography, BS
- Geoinformatics and Geospatial Intelligence, MS
- Geospatial Intelligence Graduate Certificate
- Remote Sensing and Image Processing Graduate Certificate
- Urban Informatics Minor

**Data Journalism Graduate Certificate**

Banner Code: SC-CERG-DJNL

**Academic Advising**

4400 University Drive, MSN 6C3
Fairfax, VA 22030

Phone: 703-993-1210
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/graduate-certificate-in-data-journalism/

This certificate is designed for students and professionals wishing to advance their knowledge and careers in the emerging field of Data Journalism. Data-driven journalism is about obtaining, reporting on, curating, and publishing (storifying) data in the public interest. Maps and data infographics are some of the best ways to publish data in order to inform the public and raise awareness.

Principles of journalism, methods and tools for information visualization, social media analysis, and scientific data communication topics are visited in this program.

This certificate may be pursued on a part-time and full-time basis.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog. TOEFL scores are required of all international applicants who do not hold at least a bachelor’s degree from a regionally accredited institution within the U.S. (some exceptions apply).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

**Requirements**

**Certificate Requirements**

Total credits: 15

This certificate may be pursued on a full-or part-time basis.

Students should refer to the Admissions & Policies (p. 717) tab for specific policies related to this program.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 590</td>
<td>Selected Topics in Geography ¹</td>
<td>3</td>
</tr>
<tr>
<td>GGS 692</td>
<td>Web-based Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>COMM 642</td>
<td>Science and the Public</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 655</td>
<td>Theory and Practice of Digital Communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9</td>
</tr>
</tbody>
</table>

¹ Only when the subject is GeoSocial Analysis.

**Electives**

Select two courses from the following list or others in consultation with an advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 501</td>
<td>Scientific Information and Data Visualization</td>
<td></td>
</tr>
<tr>
<td>CSI 672</td>
<td>Statistical Inference</td>
<td></td>
</tr>
</tbody>
</table>
Earth Systems Science, MS (GGS)

Banner Code: SC-MS-ESSC

Academic Advising

4400 University Drive, MSN 6C3
Fairfax, VA 22030
Phone: 703-993-1210
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/ms-in-earth-systems-science/

This is a shared program between the Department of Atmospheric, Oceanic, and Earth Sciences (p. 620) and the Department of Geography and Geoinformation Science (p. 715).

The program addresses the growing demand for trained professionals in the Earth sciences. The degree emphasizes a research-oriented, global systems approach to studying the Earth and its systems—the atmosphere, the hydrosphere, and the lithosphere, including their interrelationships and interactions with the biosphere. Emphasis is on the observation, measurement, and analysis of Earth's systems.

Most student research projects and theses will relate to geologic and geographic topics, however studies of related topics in Earth science are welcome. Students completing the program are qualified to pursue careers that require knowledge of the basics of Earth systems science and the requisite tools, specifically pertaining to the area of Earth science that they choose to investigate. Students are encouraged to undertake a master's thesis but may choose a research project. In the latter case, students must pass a comprehensive exam.

Admissions & Policies

Admissions

University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility

Applicants should have earned a BS degree in atmospheric, Earth, environmental, geological, geographical, ocean, or physical science. Previous coursework should include two semesters each of calculus, chemistry, and physics, and one semester of statistics. Applicants should have a minimum GPA of 3.00 in their undergraduate degree.

Application Requirements

Official transcripts from each college and graduate institution attended, a current résumé, and a goals statement are required. Applicants also need three letters of recommendation and an official report of scores obtained on the GRE-GEN. The GRE requirement for admission may be waived if the student holds a master's degree from a regionally accredited U.S. institution. TOEFL scores are required of all international applicants.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Requirements

Total credits: 30

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Candidates must complete 10 credits of GGS courses and 10 credits of GEOL/CLIM courses toward their requirements. ("Culminating Experience" credits do not count towards this requirement).

Earth Science Core

Select one course from each of the following groups:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMOSPHERE:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLIM 710</td>
<td>Introduction to Atmosphere and Weather</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 714</td>
<td>Physical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 532</td>
<td>Paleoclimatology</td>
<td>3</td>
</tr>
<tr>
<td>GGS 670</td>
<td>Earth Image Processing</td>
<td>3</td>
</tr>
</tbody>
</table>

| HYDROSphere:                                        |         |
| CLIM 512   | Physical Oceanography                       | 3       |
| CLIM 513   | Physical and Dynamical Oceanography         | 3       |
| GEOL 506   | Soil Science                                | 3       |
| GGS 657    | The Lithosphere                             | 3       |
| or GEOL 601| The Lithosphere                             | 3       |

Total Credits 9

Techniques

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 560</td>
<td>Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>GGS 579</td>
<td>Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 680</td>
<td>Earth Image Processing</td>
<td>3</td>
</tr>
</tbody>
</table>
Earth Systems and Geoinformation Sciences, PhD

Banner Code: SC-PHD-ESGS

Academic Advising
4400 University Drive, MSN 6C3
Fairfax, VA 22030
Phone: 703-993-1210
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/phd-esgs-2/

The Earth Systems and Geoinformation Sciences (ESGS) doctoral program is based upon the integration of the scientific disciplines in geosystems, geography, geosciences, and geoinformatics. Students receive broad-based training in systematic geosciences and geography, as well as technical courses in computation and geoinformation sciences. The ESGS doctoral program represents a gateway to an academic career for some students; for others, it facilitates career advancement in the public sector or private industry. Graduates are equipped to participate in interdisciplinary research, which is the norm in today's research arena.

Admissions & Policies

Admissions

University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility

This program is intended for graduates who hold a MS or MA degree in atmospheric science, climatology, meteorology, Earth science, geology, environmental science, remote sensing, hydrology, oceanography, geography, or a related field. Highly-qualified students with a BS or BA in applicable fields are also encouraged to apply. Knowledge of mathematics through calculus is preferred. Interested applicants should contact the program degree coordinator or the GGS director of academic programs for more specific advice.

Application Requirements

To apply, prospective students should complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now). Official transcripts from each college and graduate institution attended, a current résumé, and an expanded goals statement will be required.

Applicants will also need three letters of recommendation and an official report of scores obtained on the GRE-GEN. The GRE requirement for admission to the doctoral program may be waived if the student holds a master's degree from a regionally accredited U.S. institution. TOEFL scores are required of all international applicants. GRE-GEN scores are required of students wishing to be considered for the Office of the Provost's Presidential Scholarship. A minimum combined math and
verbal GRE score of 270/340 are needed to qualify for the Presidential Scholarship.

**Policies**

For policies governing all graduate programs, see AP 6.6 Graduate Policies (p. 90).

**Reduction of Credits**

For students entering the doctoral program with a master’s degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the associate dean for student affairs. See AP 6.5.2 Reduction of Credits (p. 91) for more information.

**Secondary Program Options**

Students enrolled in this doctoral program have the option of adding a secondary graduate certificate or master’s program (p. 717). Depending upon the secondary program chosen, many courses may be applicable to both programs. Before adding a secondary program, students are advised to carefully review AP 6.8 Requirements for Graduate Certificate (p. 94) or AP 6.9 Requirements for Master’s Degrees (p. 94) and AP 6.10 Requirements for Doctoral Degrees (p. 96). Faculty advisors should be contacted for further guidance and for secondary program suggestions.

**Requirements**

**Degree Requirements**

Total credits: 72

Students should refer to the Admissions & Policies (p. 719) tab for specific policies related to this program.

**Core Courses**

Students are required to choose from the following courses in the core areas below. Of the cores, students must complete at least one course in five of the cores and two courses in at least three of those five cores.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The core areas from which to choose these credits are:</td>
<td>24</td>
</tr>
<tr>
<td>GGS 560</td>
<td>Quantitative Methods</td>
<td></td>
</tr>
<tr>
<td>GGS 754</td>
<td>Earth Science Data and Advanced Data Analysis</td>
<td></td>
</tr>
<tr>
<td>GGS 791</td>
<td>Advanced Spatial Statistics</td>
<td></td>
</tr>
<tr>
<td>GGS 650</td>
<td>Introduction to GIS Algorithms and Programming</td>
<td></td>
</tr>
<tr>
<td>GGS 664</td>
<td>Spatial Data Structures</td>
<td></td>
</tr>
<tr>
<td>GGS 675</td>
<td>Location Science</td>
<td></td>
</tr>
<tr>
<td>GGS 692</td>
<td>Web-based Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GGS 787</td>
<td>Scientific Data Mining for Geoinformatics</td>
<td></td>
</tr>
<tr>
<td>GGS 656</td>
<td>The Hydrosphere</td>
<td></td>
</tr>
<tr>
<td>GGS 657</td>
<td>The Lithosphere</td>
<td></td>
</tr>
<tr>
<td>GGS 670</td>
<td>Introduction to Atmosphere and Weather</td>
<td></td>
</tr>
</tbody>
</table>

**Research Synthesis and Colloquium**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research Synthesis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 684</td>
<td>Selected Topics in Geospatial Intelligence</td>
<td></td>
</tr>
<tr>
<td>GGS 689</td>
<td>Seminar in Geographic Thought and Methodology</td>
<td></td>
</tr>
<tr>
<td>GGS 795</td>
<td>Seminar in Regional Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Colloquium</td>
<td>2</td>
</tr>
<tr>
<td>GGS 900</td>
<td>Geography and Geoinformation Science Colloquium (complete twice)</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

In consultation with the advisor, students select credits necessary to reach 72 total credits

At least half of the elective credits taken at Mason must be from GGS courses.

**Dissertation Research**

Students take 12-24 credits, with at least 6 credits in GGS 999 Dissertation. After reaching candidacy, students must stay continuously enrolled GGS 999 Dissertation until defending their dissertation.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 12-24 credits from the following:</td>
<td>12-24</td>
</tr>
<tr>
<td>GGS 998</td>
<td>Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>GGS 999</td>
<td>Dissertation</td>
<td></td>
</tr>
</tbody>
</table>

**Dissertation Committee**

All students will be assigned a temporary academic advisor when they first enroll in the program. No later than the end of the second year,
each student should identify a dissertation advisor and form a doctoral committee. The committee will be chaired by a GGS tenure or tenure-track professor and be composed of at least four members. GGS tenure or tenure-track faculty should be at least 50% and have larger committee membership than any other Mason department/academic unit or external organization. At least one member should be a tenure or tenure-track faculty member from another Mason department or program outside of GGS. All members of the committee must be Mason Graduate Faculty and approved by the department’s chair.

**Candidacy Examination**

After completing all required courses, each student must take a candidacy exam administered by the dissertation committee. The exam will have written and oral components. Its purpose is to determine whether the student has acquired adequate general knowledge in the selected subject area, as well as much more detailed knowledge of the specific research topic planned for the dissertation.

**Dissertation Proposal and Advancement to Candidacy**

After students have completed all required courses and passed the candidacy exam, they should prepare an acceptable dissertation proposal. After the dissertation proposal is approved and the appropriate paperwork is completed, the student will be advanced to candidacy.

**Doctoral Dissertation**

The degree will be awarded upon completion of the required coursework and successful defense of a PhD dissertation that makes an original and significant contribution to the field.

**Environmental GIS and Biodiversity Conservation Graduate Certificate**

Banner Code: SC-CERG-EGBC

Nathan R. Burtch, Undergraduate Coordinator

2413 Exploratory Hall

Fairfax Campus

Phone: 703-993-1207

Email: sfuhrman@gmu.edu

Website: cos.gmu.edu/ggs/academic-programs/graduate-certificate-in-environmental-gis-and-biodiversity-conservation/

As biodiversity is the life support system of our planet, it is important to prepare students for careers that require knowledge of both ecology and public policy. This certificate focuses in the fields of conservation biology, land use policy, conservation planning, and modern tools and approaches used in GIS to prepare students to tackle complex environmental challenges in a changing world.

This certificate is suitable for traditional students as well as for student-professionals (such as environmental scientists, managers, practitioners in government, and experts in non-governmental organizations) who wish to acquire further knowledge to advance their careers.

This certificate may be pursued on a part-time or full-time basis.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants for this certificate should hold a BA or BS in a related discipline from a regionally accredited institution.

**Policies**

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

**Requirements**

**Certificate Requirements**

Total credits: 18

This certificate may be pursued on a full- or part-time basis.

Refer to the Admissions & Policies (p. 721) for policies specific to this program.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geospatial Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 692</td>
<td>Web-based Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td><strong>Remote Sensing Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GGS 579</td>
<td>Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 680</td>
<td>Earth Image Processing</td>
<td></td>
</tr>
<tr>
<td><strong>Conservation Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVPP 518</td>
<td>Conservation Biology ¹</td>
<td>3</td>
</tr>
<tr>
<td><strong>Statistics Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GGS 560</td>
<td>Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>or CONS 625</td>
<td>Statistics for Ecology and Conservation Biology</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

¹ This course may be substituted with advisor approval.

**Practice-oriented Conservation Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONS 630</td>
<td>Species Monitoring Conservation</td>
<td>6</td>
</tr>
<tr>
<td>CONS 645</td>
<td>Estimating Animal Abundance and Occupancy</td>
<td></td>
</tr>
<tr>
<td>CONS 697</td>
<td>Special Topics in Conservation</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
GeoManagement Undergraduate Certificate

Banner Code: SC-CERB-GEOM

Nathan R. Burtch, Undergraduate Coordinator
2413 Exploratory Hall
Fairfax Campus
Phone: 703-993-1207
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/undergraduate-certificate-in-geomanagement/

Considering our global environment, professionals working on large-scale GIS projects often find it only natural to couple management and marketing topics with geography. This certificate accommodates students who are pursuing a degree in the Department of Geography and Geoinformation Science (p. 715) who also wish to acquire more knowledge on how to manage people and organizations dealing with GIS in a global economy. By understanding marketing terms, financial matters, and also having a good understanding of how to manage people, students will be well prepared to face challenges in multidisciplinary GIS-oriented environments.

All courses are available online; further information can be found with Mason Online (http://masononline.gmu.edu).

This certificate may be pursued on a full-time or part-time basis.

Admissions

Admissions

University-wide admissions policies can be found in Undergraduate Admissions Policies (p. 65).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

Requirements

Certificate Requirements

Total credits: 24-25

This certificate may be pursued on a full-or part-time basis.

Students should refer to the Admissions & Policies (p. 722) tab for specific policies related to this program.

Management

Students in this certificate can take the following MBUS courses for certificate credit without sophomore standing (listed as a course prerequisite):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBUS 300</td>
<td>Accounting in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>MBUS 302</td>
<td>Managing Information in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>MBUS 303</td>
<td>Marketing in a Global Economy</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Geoinformation Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 102</td>
<td>Physical Geography (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>or GGS 121</td>
<td>Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 312</td>
<td>Physical Climatology</td>
<td>3</td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td>3</td>
</tr>
<tr>
<td>GGS 380</td>
<td>Geography of Virginia</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18-19

Geographic Information Science Graduate Certificate

Banner Code: SC-CERG-GISC

Academic Advising

4400 University Drive, MSN 6C3
Fairfax, VA 22030
Phone: 703-993-1210
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/graduate-certificate-in-geographic-information-sciences/

This graduate certificate prepares students for employment in federal, state, and local government positions that require GIS skills. The certificate has been found suitable for the needs of business and industry, including those corporations that serve as contractors to governments in the United States and overseas.

The Geographic Information Science Graduate Certificate may be pursued on a part-time or full-time basis.
Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants to this certificate program must submit a current résumé. GRE scores and letters of recommendation are not required but will strengthen an application, if available. TOEFL scores are required of all international applicants.

All applicants should have a working knowledge of, or prior education or training in, computer technology. Knowledge of GIS, remote sensing technology, and cartography are preferred. Students from any discipline are welcome to apply.

Policies

For policies governing all graduate programs, see AP 6 Graduate Policies (p. 90).

Premium Tuition Rate

This professional certificate program charges students at a differential (premium) tuition rate. This rate applies to all students who enroll in this certificate program, regardless of in-state or out-of-state status. The differential tuition will be used to fund continuing improvements in the departmental computational facilities used to support the certificate program.

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a full-or part-time basis.

Students should refer to the Admissions & Policies (p. 723) tab for specific policies related to this program.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 563</td>
<td>Advanced Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 505</td>
<td>Transportation Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 531</td>
<td>Land-Use Modeling Techniques and Applications</td>
<td></td>
</tr>
<tr>
<td>GGS 551</td>
<td>Thematic Cartography</td>
<td></td>
</tr>
<tr>
<td>GGS 560</td>
<td>Quantitative Methods</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits

9

Geographic Information Systems Minor

Banner Code: GIS

Nathan R. Burtch, Undergraduate Coordinator

2413 Exploratory Hall

Fairfax Campus

Phone: 703-993-1207
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/minor-in-geographic-information-systems/

The Geographic Information Systems Minor is designed to prepare students with the basic training necessary to enter the rapidly expanding field of geographic information science. The curriculum in the minor is multidisciplinary in content and interdisciplinary in approach, drawing on a variety of geographic and computational science components. A Geographic Information System (GIS) is an integrative approach to help solving complex spatial problems in most professional fields and at different scales. GIS has irrevocably altered the way we capture, store, analyze, and visualize spatial information. Although it has its roots in cartography and the graphical display of information, its breadth spans from geographic data acquisition, geospatial database construction and management, spatial analysis, and geovisualization. Public and private sector organizations work with an overwhelming amount of spatial data in their day-to-day operations. With so much spatial information, GIS has become essential to the effective operation of both public and private organizations.

Employment opportunities are limitless for students who are proficient in this interdisciplinary field. GIS professionals work in places like government agencies, utility companies, marketing firms, non-profit organizations, and publishing companies. Federal government agencies
such as NGA, FEMA, USGS, DOD, EPA, and NASA routinely recruit individuals with strong GIS backgrounds.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18-20

Students should refer to the Admissions & Policies (p. 724) tab for specific policies related to this program.

All coursework must be completed with a minimum GPA of 2.00.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td>3</td>
</tr>
<tr>
<td>GGS 300</td>
<td>Quantitative Methods for Geographical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 463</td>
<td>RS: Applied Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

Electives

Select 6-8 credits from the following: ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 308</td>
<td>Field Mapping Techniques</td>
<td></td>
</tr>
<tr>
<td>GGS 310</td>
<td>Introduction to Digital Cartography</td>
<td></td>
</tr>
<tr>
<td>GGS 354</td>
<td>Data Analysis and Global Change Detection Techniques</td>
<td></td>
</tr>
<tr>
<td>GGS 379</td>
<td>Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>GGS 410</td>
<td>Introduction to Hyperspectral Imaging</td>
<td></td>
</tr>
<tr>
<td>GGS 411</td>
<td>Advanced Digital Cartography</td>
<td></td>
</tr>
<tr>
<td>GGS 412</td>
<td>Air Photography Interpretation</td>
<td></td>
</tr>
<tr>
<td>GGS 416</td>
<td>Satellite Image Analysis</td>
<td></td>
</tr>
<tr>
<td>GGS 462</td>
<td>Web Mapping</td>
<td></td>
</tr>
<tr>
<td>GGS 470</td>
<td>Special Topics in Geographic Techniques</td>
<td></td>
</tr>
<tr>
<td>GGS 480</td>
<td>GGS Internship</td>
<td></td>
</tr>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6-8</td>
</tr>
</tbody>
</table>

¹ With departmental permission, one course with significant geographic information systems (GIS) content may be used as an elective.

Geographic and Cartographic Sciences, MS

Banner Code: SC-MS-GECA

Academic Advising

4400 University Drive, MSN 6C3
Fairfax, VA 22030

Phone: 703-993-1210
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/ms-in-geographic-and-cartographic-sciences/

The Geographic and Cartographic Sciences, MS (GECA) focuses on the growing demand for scientists and professionals in the field of geographic information science, who use geographical approaches and tools such as geographic information systems (GIS), remote sensing, cartography, and geovisualization to address and solve geographic problems. This expertise is useful to a wide variety of employers in the federal, state, and local government sectors, as well as in business, industry, and non-profit organizations. The degree’s coursework concentrates on the collection, analysis, and display of geographic data, in concert with the use of emerging geospatial technologies to address problems in the human and environmental geographic domains. Students in this program benefit from a large and diverse local employment market, as well as a network of more than 700 program alumni (1978-present) who live and work in the local area.

Research Facilities

The Department of Geography and Geoinformation Science (p. 715) has extensive research and teaching facilities, including several labs equipped with GIS, remote sensing, cartographic, and analytical software from leading industry vendors and open source groups. Specialized instructional space for geographic information science is housed in newly renovated labs in Exploratory Hall on the Fairfax Campus.

Admissions

University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility and Application Requirements

Applicants for this master’s should have a bachelor’s degree in geography, cartography, or a closely related field. Applicants without an undergraduate degree in geography may be required to take one course in each of the following: physical geography, human geography, and cartography. All applicants must have a course in statistics. The program also requires GRE test scores, three letters of recommendation, transcripts of all college coursework, and a statement of interest in
the degree. The GRE requirement will be waived if the student holds a master’s degree from a regionally-accredited U.S. institution. TOEFL scores are required for all foreign applicants. Credit from courses taken at other departments and other universities may be applied to the program with prior approval.

Policies
For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90)

Secondary Program Options
Students enrolled in this master’s program have the option of adding a secondary graduate certificate program (p. 717). Depending upon the secondary program chosen, many courses may be applicable to both the certificate and the master’s. Before adding a secondary program, students are advised to carefully review the Requirements for Graduate Certificates (p. 94) and the Requirements for Master’s Degrees (p. 94) in AP.6 Graduate Policies (p. 90). Faculty advisors should be contacted for further guidance and for graduate certificate program suggestions.

Requirements

Degree Requirements
Total credits: 30 or 37

Students should refer to the Admissions & Policies (p. 724) tab for specific policies related to this program.

Students must complete either 30 graduate credits (with a thesis) or 37 graduate credits (without a thesis). If the non-thesis option is selected, students are required to pass a comprehensive exam.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 560</td>
<td>Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>GGS 579</td>
<td>Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 689</td>
<td>Seminar in Geographic Thought and Methodology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Thesis or Non-thesis Options

Thesis Option
Students selecting the thesis option must complete:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three credits of GGS 799 Thesis</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select 15 credits of electives in 500 to 799-level GGS courses. 1

Total Credits 18

Electives should be selected in consultation with an advisor. With departmental approval, up to 9 credits from closely related disciplines may be applied to the degree.

Non-thesis Option
Students selecting the non-thesis option must complete:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 700</td>
<td>Comprehensive Exam (1 credit)</td>
<td>1</td>
</tr>
<tr>
<td>Select 24 credits of electives in 500 to 799-level GGS courses. 1</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 25

1 Electives should be selected in consultation with an advisor. With departmental approval, up to 9 credits from closely related disciplines may be applied to the degree.

Accelerated Master’s Geography, BA/Geographic and Cartographic Sciences, Accelerated MS Overview
Offered by the Department of Geography and Geoinformation Sciences (GGS) in the College of Science, this bachelor’s/accelerated master’s degree program enables highly qualified undergraduates to obtain the Geography, BA (p. 726) and the Geographic and Cartographic Sciences, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms) degrees within an accelerated timeframe. The program strategy enables students to undertake graduate coursework during their final year in the bachelor’s degree. This 144 credit program (thesis option) or 151 credit program (comprehensive exam option) prepares students for professional careers where geoinformation management, geographic analysis, and geospatial visualization are of importance.

Students in this accelerated degree program must fulfill all university requirements for the Geography, BA (p. 726) and the Geographic and Cartographic Sciences, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms). While the information below is largely comprehensive, students are strongly encouraged to also review AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Application Requirements
Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master’s program after completing at least 90 undergraduate credits. Additionally, they must have completed the following courses with a GPA of 3.0 or better: GGS 102 Physical Geography (Mason Core) (p. 142) or GGS 121 Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142) or GGS 122 Dynamic Geosphere and Ecosphere, GGS 103 Human Geography (Mason Core) (p. 142), GGS 110 Introduction to Geoinformation Technologies, GGS 300 Quantitative Methods for Geographical Analysis, GGS 310 Introduction to Digital Cartography, and GGS 311 Introduction to Geographic Information Systems.

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Admissions section of this catalog. However, this accelerated master’s does not require GRE test scores.

While being undergraduate students, accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application (obtained from the Office of Academic and Student Affairs) with a minimum grade of 3.0 in each course. They must
maintain a minimum GPA of 3.0 in all coursework and in coursework applied to their major.

At the beginning of their final undergraduate semester, they must submit the Bachelor’s/Accelerated Master’s Transition Form (found on the Office of the University Registrar website). Students must begin their master’s program in the semester immediately following the term of undergraduate degree conferral. Students should consult with their faculty advisor in the Department of Geography and Geoinformation Science and the Office of Academic and Student Affairs to obtain further guidance.

Accelerated Option Requirements

Students admitted to this program may start taking graduate courses after completing 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master’s degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master’s program and must then complete 24 (thesis option) or 31 (comprehensive exam option) additional credits to receive the master’s degree. All other master’s degree requirements must be met.

Reserve Graduate Credit

During the bachelor’s degree status, students may take up to 6 graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree, but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, the master’s degree can be completed with 18 (thesis option) or 25 (comprehensive exam option) graduate credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. To apply the reserved credits to the master’s degree, students must request their transfer from the undergraduate degree to the graduate degree via the Bachelor’s/Accelerated Master’s Transition Form found on the Office of the University Registrar website.

Geography, BS/Geographic and Cartographic Sciences, Accelerated MS

Overview

Offered by the Department of Geography and Geoinformation Sciences (GGS) in the College of Science, this bachelor’s/accelerated master’s degree program enables highly qualified undergraduates to obtain the Geography, BS (p. 733) and the Geographic and Cartographic Sciences, MS (p. 724) degrees within an accelerated timeframe. The program strategy enables students to undertake graduate coursework during their final year in the bachelor’s degree. This 144 credit program (thesis option) or 151 credit program (comprehensive exam option) prepares students for professional careers where geoinformation management, geographic analysis, and geospatial visualization are of importance.

Students in this accelerated degree program must fulfill all university requirements for the Geography, BS (p. 733) and the Geographic and Cartographic Sciences, MS (p. 724). While the information below is largely comprehensive, students are strongly encouraged to also review AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Application Requirements

Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master’s program after completing at least 90 undergraduate credits. Additionally, they must have completed the following courses with a GPA of 3.0 or better: GGS 102 Physical

Accelerated Option Requirements

Students admitted to this program may start taking graduate courses after completing 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master’s degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master’s program and must then complete 24 (thesis option) or 31 (comprehensive exam option) additional credits to receive the master’s degree. All other master’s degree requirements must be met.

Reserve Graduate Credit

During the bachelor’s degree status, students may take up to 6 graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree, but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, the master’s degree can be completed with 18 (thesis option) or 25 (comprehensive exam option) graduate credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. To apply the reserved credits to the master’s degree, students must request their transfer from the undergraduate degree to the graduate degree via the Bachelor’s/Accelerated Master’s Transition Form found on the Office of the University Registrar website.
The Geography, BA is designed to offer students the opportunity to study the integrated social and environmental processes that continuously shape and reshape the world we live in. This major provides students with broad training across the core subdisciplines of geography (human, physical, and GIScience), while also offering the requisite flexibility for those students seeking a multidisciplinary educational experience. Students will find numerous opportunities for employment in both the private and public sectors, as well as in academia. Given their interdisciplinary approach and uniquely spatial perspective, geographers are well suited to address important local, regional, and global challenges in today’s world.

The Department of Geography and Geoinformation Science fosters a supportive, active learning environment in which students are encouraged to work closely with both faculty and peers. The curriculum in this major provides students with the synthesis skills and broad base of knowledge that prepares them to be successful in an ever-evolving job market. For students who wish to pursue their interest in geography with a more technical curriculum, the department also offers a Geography, BS.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies

Students must fulfill all Requirements for Bachelor’s Degrees (p. 87) including the Mason Core (p. 142). As outlined in the Requirements tab, students in this bachelor’s program must also complete the additional College Requirements for the BA Degree.

GGS 415 Seminar in Geography fulfills the writing intensive requirement.

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Candidates for a degree in geography must complete the approved GGS geography courses with a minimum GPA of 2.00.

Students must complete the Core, Systematic and Regional Geography, and GGS electives, then select one concentration or an additional program, and lastly complete the College Requirements for the BA Degree and the Mason Core and Elective Credits.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 102</td>
<td>Physical Geography (Mason Core)</td>
<td>3-4</td>
</tr>
<tr>
<td>or GGS 121</td>
<td>Dynamic Atmosphere and Hydrosphere (Mason Core)</td>
<td>3-4</td>
</tr>
<tr>
<td>or GGS 122</td>
<td>Dynamic Geosphere and Ecosphere</td>
<td></td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td>or GGS 210</td>
<td>Introduction to Spatial Computing</td>
<td></td>
</tr>
<tr>
<td>GGS 300</td>
<td>Quantitative Methods for Geographical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 310</td>
<td>Introduction to Digital Cartography</td>
<td>3</td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 415</td>
<td>Seminar in Geography ¹</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21-22

¹ Fulfills writing intensive requirement.

Systematic and Regional Geography

Students must take one systematic course and one regional course from the list below:

Systematic Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one from the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>GGS 309</td>
<td>Meteorology and Climate</td>
<td></td>
</tr>
<tr>
<td>GGS 312</td>
<td>Physical Climatology</td>
<td></td>
</tr>
<tr>
<td>GGS 314</td>
<td>Severe and Extreme Weather</td>
<td></td>
</tr>
<tr>
<td>GGS 319</td>
<td>Air Pollution</td>
<td></td>
</tr>
<tr>
<td>GGS 321</td>
<td>Biogeography</td>
<td></td>
</tr>
<tr>
<td>GGS 322</td>
<td>Issues in Global Change</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 456</td>
<td>Introduction to Atmospheric Radiation</td>
<td></td>
</tr>
</tbody>
</table>

Regional Courses

Select one from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
<td></td>
</tr>
</tbody>
</table>
GGS 316 Geography of Latin America
GGS 317 Geography of China
GGS 320 Geography of Europe
GGS 325 Geography of North Africa and the Middle East
GGS 330 Geography of the Soviet Succession States
GGS 333 Issues in Regional Geography
GGS 380 Geography of Virginia

Total Credits 6

GGS Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 9-10 credits of electives.</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9-10

Two of the three courses must be upper-level GGS courses.

Environmental Geography Concentration (EGEO)

The Environmental Geography concentration for the BA in Geography provides a unique opportunity for majors to take a broader, integrative science approach to studies of the environment. In collaboration with the Department of Environmental Science and Policy (p. 687), BA in Geography majors have the opportunity to focus their studies on geographic approaches to climatology and global changes, environmental issues, policy matters, and sustainability topics.

Some courses may have prerequisite requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 336</td>
<td>Human Dimensions of the Environment or EVPP 337</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Environmental Policy Making in Developing Countries or EVPP 377</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Applied Ecology</td>
<td></td>
</tr>
</tbody>
</table>

Methods Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 354</td>
<td>Data Analysis and Global Change Detection Techniques or GGS 412</td>
<td>3</td>
</tr>
<tr>
<td>GGS 412</td>
<td>Air Photography Interpretation</td>
<td></td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td></td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>GGS 309</td>
<td>Meteorology and Climate</td>
<td></td>
</tr>
<tr>
<td>GGS 312</td>
<td>Physical Climatology</td>
<td></td>
</tr>
<tr>
<td>GGS 314</td>
<td>Severe and Extreme Weather</td>
<td></td>
</tr>
<tr>
<td>GGS 319</td>
<td>Air Pollution</td>
<td></td>
</tr>
<tr>
<td>GGS 322</td>
<td>Issues in Global Change</td>
<td></td>
</tr>
<tr>
<td>GGS 354</td>
<td>Data Analysis and Global Change Detection Techniques 1</td>
<td></td>
</tr>
<tr>
<td>GGS 412</td>
<td>Air Photography Interpretation 1</td>
<td></td>
</tr>
<tr>
<td>EVPP 336</td>
<td>Human Dimensions of the Environment 1</td>
<td></td>
</tr>
<tr>
<td>EVPP 337</td>
<td>Environmental Policy Making in Developing Countries 1</td>
<td></td>
</tr>
<tr>
<td>EVPP 361</td>
<td>Introduction to Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 362</td>
<td>Intermediate Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 377</td>
<td>Applied Ecology 1</td>
<td></td>
</tr>
<tr>
<td>EVPP 421</td>
<td>Marine Conservation</td>
<td></td>
</tr>
<tr>
<td>EVPP 440</td>
<td>Field Environmental Science</td>
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</tr>
<tr>
<td>EVPP 480</td>
<td>Sustainability in Action (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GEOL 305</td>
<td>Environmental Geology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15-16

1 Course cannot be selected if previously selected as a core or methods course.

Health Geography Concentration (HGEO)

The field of Health Geography addresses the role of place, location dynamics and geography in health, well-being, and disease. Public health patterns can vary significantly by physical and social characteristics of places both within and between regions, states, or countries. In collaboration with the Department of Global and Community Health (p. 246), BA in Geography majors get introduced to local and global health issues and develop their skill set in spatial and statistical analysis of diverse health outcomes in populations.

Some courses may have prerequisite requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 340</td>
<td>Health Geography</td>
<td>3</td>
</tr>
<tr>
<td>GCH 300</td>
<td>Introduction to Public Health</td>
<td>3</td>
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</tbody>
</table>

Electives

Select 9 credits from the following courses. Choose at least one GGS elective and at least one GCH elective:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 319</td>
<td>Air Pollution</td>
<td></td>
</tr>
<tr>
<td>GGS 321</td>
<td>Biogeography</td>
<td></td>
</tr>
<tr>
<td>GGS 322</td>
<td>Issues in Global Change</td>
<td></td>
</tr>
<tr>
<td>GGS 354</td>
<td>Data Analysis and Global Change Detection Techniques</td>
<td></td>
</tr>
<tr>
<td>GGS 463</td>
<td>RS: Applied Geographic Information Systems</td>
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<tr>
<td>GCH 205</td>
<td>Global Health (Mason Core) (p. 142)</td>
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<tr>
<td>GCH 332</td>
<td>Health and Disease</td>
<td></td>
</tr>
<tr>
<td>GCH 360</td>
<td>Health and Environment</td>
<td></td>
</tr>
<tr>
<td>GCH 412</td>
<td>Fundamentals of Epidemiology</td>
<td></td>
</tr>
<tr>
<td>GCH 445</td>
<td>Social Determinants of Health</td>
<td></td>
</tr>
<tr>
<td>GCH 450</td>
<td>Culture, Sexuality and the Global AIDS Epidemic</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15
Geoanthropology Concentration (GEA)

Anthropology, a social science, focuses on human activities—past, present, and future. Geography, positioned in the social science and STEM field, studies the physical features of the Earth and its atmosphere, and human activities as they affect and are affected by these, including the distribution of populations and resources, land use, urbanization and other topics. Just as anthropologists use insights from other disciplines to understand humans, geographers cross disciplinary boundaries to collect, store, analyze, model and visualize data. Such broad and inclusive disciplines and definitions yield a large number of possible themes in Geoanthropology. This concentration enables BA in Geography majors, versed in systematic techniques and regional geography, to become better versed in the theoretical constructs of anthropology that situate the environment as part of a global cultural system.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Courses</td>
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<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
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<tr>
<td>Select one core track:</td>
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<td></td>
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<tr>
<td>Cultural Track</td>
<td></td>
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<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
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<tr>
<td>Archaeology Track</td>
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<tr>
<td>ANTH 120</td>
<td>Unearting the Past: Prehistory, Culture and Evolution (Mason Core) (p. 142)</td>
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<tr>
<td>Biological Track</td>
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<tr>
<td>ANTH 135</td>
<td>Introduction to Biological Anthropology (Mason Core) (p. 142)</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Select 9 credits from the following courses. Choose at least one GGS elective and at least one ANTH elective:</td>
<td></td>
<td></td>
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<tr>
<td>GGS 301</td>
<td>Political Geography</td>
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<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
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<tr>
<td>GGS 306</td>
<td>Urban Geography</td>
<td></td>
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<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
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<tr>
<td>GGS 309</td>
<td>Meteorology and Climate</td>
<td></td>
</tr>
<tr>
<td>GGS 319</td>
<td>Air Pollution</td>
<td></td>
</tr>
<tr>
<td>GGS 321</td>
<td>Biogeography</td>
<td></td>
</tr>
<tr>
<td>GGS 322</td>
<td>Issues in Global Change</td>
<td></td>
</tr>
<tr>
<td>GGS 357</td>
<td>Urban Planning</td>
<td></td>
</tr>
<tr>
<td>GGS 315</td>
<td>Geography of the United States</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
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<tr>
<td>GGS 320</td>
<td>Geography of Europe</td>
<td></td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<tr>
<td>GGS 333</td>
<td>Issues in Regional Geography</td>
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<td>GGS 380</td>
<td>Geography of Virginia</td>
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<td>Cultural Track</td>
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<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 376</td>
<td>Food and Culture</td>
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<td>ANTH 381</td>
<td>Medical Anthropology</td>
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<td>ANTH 382</td>
<td>Urban Anthropology (Mason Core) (p. 142)</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142) (Cultural Topic)</td>
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<td>ANTH 499</td>
<td>Independent Research (Cultural Topic)</td>
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<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
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<td>ANTH 325</td>
<td>Field Techniques in Archaeology</td>
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<td>ANTH 357</td>
<td>Bioarchaeology</td>
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<tr>
<td>ANTH 370</td>
<td>Environment and Culture</td>
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<td>ANTH 377</td>
<td>Mortuary Archaeology</td>
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<td>ANTH 379</td>
<td>Andean Archaeology</td>
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<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142) (Archaeological Topic)</td>
<td></td>
</tr>
<tr>
<td>ANTH 499</td>
<td>Independent Research (Archaeological Topic)</td>
<td></td>
</tr>
<tr>
<td>ANTH 355</td>
<td>Human Origins</td>
<td></td>
</tr>
<tr>
<td>ANTH 357</td>
<td>Bioarchaeology</td>
<td></td>
</tr>
<tr>
<td>ANTH 366</td>
<td>Food and Human Evolution</td>
<td></td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142) (Biological Topic)</td>
<td></td>
</tr>
<tr>
<td>ANTH 499</td>
<td>Independent Research (Biological Topic)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

Students must select ANTH electives that are associated with the chosen core course track (Cultural, Archaeology, or Biology).

Additional Program

Students who are not selecting a concentration may choose 15 or more credits consisting of an established minor, concentration, second major, or other coherent selection of courses approved by the advisor and the department chair:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ANTH 355</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ANTH 376</td>
<td>Food and Culture</td>
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<tr>
<td>ANTH 376</td>
<td>Medical Anthropology</td>
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</tr>
<tr>
<td>ANTH 382</td>
<td>Urban Anthropology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142) (Cultural Topic)</td>
<td></td>
</tr>
<tr>
<td>ANTH 499</td>
<td>Independent Research (Cultural Topic)</td>
<td></td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 325</td>
<td>Field Techniques in Archaeology</td>
<td></td>
</tr>
<tr>
<td>ANTH 357</td>
<td>Bioarchaeology</td>
<td></td>
</tr>
<tr>
<td>ANTH 370</td>
<td>Environment and Culture</td>
<td></td>
</tr>
<tr>
<td>ANTH 377</td>
<td>Mortuary Archaeology</td>
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</tr>
<tr>
<td>ANTH 379</td>
<td>Andean Archaeology</td>
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<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142) (Archaeological Topic)</td>
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<td>ANTH 499</td>
<td>Independent Research (Archaeological Topic)</td>
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<td>ANTH 355</td>
<td>Human Origins</td>
<td></td>
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<td>ANTH 357</td>
<td>Bioarchaeology</td>
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<td>ANTH 366</td>
<td>Food and Human Evolution</td>
<td></td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142) (Biological Topic)</td>
<td></td>
</tr>
<tr>
<td>ANTH 499</td>
<td>Independent Research (Biological Topic)</td>
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</tr>
</tbody>
</table>

Total Credits 15

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires an additional 66-69 credits, which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), College Requirements for the BA Degree (outlined below), and electives. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.
Foundation Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
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</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
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</table>

Exploration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
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Integration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Writing-intensive (p. 151) 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Synthesis/Capstone (p. 153) 2</td>
<td>3</td>
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</tbody>
</table>

Total Credits 40

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2. Minimum 3 credits required.

College Requirements for the BA Degree

In addition to the program requirements and the Mason Core (p. 142) requirements, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill this college-level requirement may also be used simultaneously to satisfy other requirements such as Mason Core (p. 142) requirements, other college-level requirements, or requirements for the major. In some cases, the requirements listed below may be superseded by requirements of the degree program and the Mason Core (p. 142).

Philosophy or Religious Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHIL (p. 2044) 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RELI (p. 2144)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

1. PHIL 323 Classical Western Political Theory and PHIL 324 Modern Western Political Theory may not be used to fulfill this requirement.

Social and Behavioral Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 124 Human Anatomy and Physiology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BIOL 125 Human Anatomy and Physiology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GEOL 101 Geology of the Earth</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GEOG 201 Introduction to Geographic Information Systems</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GEOG 202 Introduction to Geographic Analysis</td>
<td>1</td>
<td></td>
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</tbody>
</table>

Natural Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 124 Human Anatomy and Physiology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BIOL 125 Human Anatomy and Physiology</td>
<td>1</td>
<td></td>
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<tr>
<td>CHEM 111 General Chemistry I</td>
<td>1</td>
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</tr>
<tr>
<td>CHEM 112 General Chemistry II</td>
<td>1</td>
<td></td>
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</table>

Foreign Language

Intermediate-level proficiency in one foreign language is required. This requirement may be fulfilled by completing a course in a foreign language numbered 202, 209, or 210 (or higher-level courses taught in the language).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select a foreign language course numbered 202, 209, or 210</td>
<td>0.5 - 3</td>
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</table>

Non-Western Culture

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select an approved Non-Western Culture Requirement 1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

1. Students may be eligible for a waiver of this requirement if they are already proficient in a second language or if they have received a satisfactory score on an approved proficiency test. Additional information on waivers can be found via the college’s Office of Academic and Student Affairs (https://cos.gmu.edu/uaa).

Non-Western Culture

Choose one approved Non-Western Culture Requirement course in addition to the course used to fulfill the Mason Core: Global Understanding (p. 146) requirement. A course used to fulfill the Mason
Core: Global Understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. However, a course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core (p. 142) requirements, college-level requirements, or requirements for the major).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
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<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
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<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
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<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
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<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
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<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td>3</td>
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<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
<td>3</td>
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<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td>3</td>
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<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
<td>3</td>
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<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
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<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 252</td>
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<tr>
<td>HIST 254</td>
<td>Survey of African History (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 271</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 272</td>
<td>Survey of Latin American History (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 281</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 282</td>
<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<td>HIST 326</td>
<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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<tr>
<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
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<td>HIST 353</td>
<td>History of Traditional China</td>
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<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
Cartographic Sciences, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms) degrees within an accelerated timeframe. The program strategy enables students to undertake graduate coursework during their final year in the bachelor's degree. This 144 credit program (thesis option) or 151 credit program (comprehensive exam option) prepares students for professional careers where geoinformation management, geographic analysis, and geospatial visualization are of importance.

Students in this accelerated degree program must fulfill all university requirements for the Geography, BA (p. 726) and the Geographic and Cartographic Sciences, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms). While the information below is largely comprehensive, students are strongly encouraged to also review AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

**Application Requirements**

Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master’s program after completing at least 90 undergraduate credits. Additionally, they must have completed the following courses with a GPA of 3.0 or better: GGS 103 Human Geography (Mason Core) (p. 142) or GGS 110 Geology (Mason Core) (p. 142). Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master's program after completing at least 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master's degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master's program and must maintain a minimum GPA of 3.0 in all coursework and in coursework applied to their major.

At the beginning of their final undergraduate semester, they must submit the Bachelor's/Accelerated Master's Transition Form (found on the Office of the University Registrar website). Students must begin their master's program in the semester immediately following the term of undergraduate degree conferral. Students should consult with their faculty advisor in the Department of Geography and Geoinformation Science and the Office of Academic and Student Affairs to obtain further guidance.

**Accelerated Option Requirements**

Students admitted to this program may start taking graduate courses after completing 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master's degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master's program and must then complete 24 (thesis option) or 31 (comprehensive exam option) additional credits to receive the master's degree. All other master's degree requirements must be met.

---

### Accelerated Master’s

**Geography, BA/Geographic and Cartographic Sciences, Accelerated MS**

**Overview**

Offered by the Department of Geography and Geoinformation Sciences (GGS) in the College of Science, this bachelor's/accelerated master’s degree program enables highly qualified undergraduates to obtain the Geography, BA (p. 726) and the Geographic and Cartographic Sciences, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms) degrees within an accelerated timeframe. The program strategy enables students to undertake graduate coursework during their final year in the bachelor's degree. This 144 credit program (thesis option) or 151 credit program (comprehensive exam option) prepares students for professional careers where geoinformation management, geographic analysis, and geospatial visualization are of importance.

Students in this accelerated degree program must fulfill all university requirements for the Geography, BA (p. 726) and the Geographic and Cartographic Sciences, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms). While the information below is largely comprehensive, students are strongly encouraged to also review AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

**Application Requirements**

Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master’s program after completing at least 90 undergraduate credits. Additionally, they must have completed the following courses with a GPA of 3.0 or better: GGS 103 Human Geography (Mason Core) (p. 142) or GGS 110 Geology (Mason Core) (p. 142). Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master's program after completing at least 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master's degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master's program and must maintain a minimum GPA of 3.0 in all coursework and in coursework applied to their major.

At the beginning of their final undergraduate semester, they must submit the Bachelor's/Accelerated Master's Transition Form (found on the Office of the University Registrar website). Students must begin their master's program in the semester immediately following the term of undergraduate degree conferral. Students should consult with their faculty advisor in the Department of Geography and Geoinformation Science and the Office of Academic and Student Affairs to obtain further guidance.

**Accelerated Option Requirements**

Students admitted to this program may start taking graduate courses after completing 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master's degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master's program and must then complete 24 (thesis option) or 31 (comprehensive exam option) additional credits to receive the master's degree. All other master's degree requirements must be met.
## Reserve Graduate Credit

During the bachelor’s degree status, students may take up to 6 graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree, but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, the master’s degree can be completed with 18 (thesis option) or 25 (comprehensive exam option) graduate credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. To apply the reserved credits to the master’s degree, students must request their transfer from the undergraduate degree to the graduate degree via the Bachelor’s/Accelerated Master’s Transition Form found on the Office of the University Registrar website.

## Geography, BS

**Banner Code: SC-BS-GEOG**

**Nathan R. Burtch, Undergraduate Coordinator**

2413 Exploratory Hall

Fairfax Campus

Phone: 703-993-1207

Email: ggs@gmu.edu

Website: cos.gmu.edu/ggs/academic-programs/bs-in-geography/

The Geography, BS is designed to offer students the opportunity to study the integrated social and environmental processes that continuously shape and reshape the world we live in. This major provides students with broad training across the core subdisciplines of geography (human, physical, and GIScience), emphasizing application and technique-driven coursework, in addition to a rigorous science and mathematics curriculum. Students will find numerous opportunities for employment in both the private and public sectors, as well as in academia. Given their interdisciplinary approach and uniquely spatial perspective, geographers are well suited to address important local, regional, and global challenges in today’s world.

The Department of Geography and Geoinformation Science fosters a supportive, active learning environment in which students are encouraged to work closely with both faculty and peers. The curriculum in this major provides students with the analytical, technical, and practical training that prepares them to be successful in an ever-evolving job market. For students who wish to pursue their interest in geography via a more flexible degree program, the department also offers a Geography, BA (p. 726).

## Admissions & Policies

### Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

### Policies

Students must fulfill all Requirements for Bachelor’s Degrees (p. 87) including the Mason Core (p. 142).

GGS 415 Seminar in Geography fulfills the writing intensive requirement.

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87).

### Requirements

#### Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 733) tab for specific policies related to this program.

#### Geography

Candidates for the Geography, BS degree must complete the following Core, Breadth and Experience, and Geography Elective courses with a minimum GPA of 2.00:

##### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 102 or GGS 121</td>
<td>Physical Geography (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td>3</td>
</tr>
<tr>
<td>GGS 300</td>
<td>Quantitative Methods for Geographical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 310</td>
<td>Introduction to Digital Cartography</td>
<td>3</td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 379</td>
<td>Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 400</td>
<td>Colloquium in Geoinformation Science</td>
<td>1</td>
</tr>
<tr>
<td>GGS 415</td>
<td>Seminar in Geography</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 25-26

1. Fulfills the writing intensive requirement.

#### Breadth and Experience Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Advanced Technique Courses
| GGS 308 | Field Mapping Techniques                               | 9       |
| GGS 354 | Data Analysis and Global Change Detection Techniques  |         |
| GGS 410 | Introduction to Hyperspectral Imaging                  |         |
| GGS 411 | Advanced Digital Cartography                            |         |
| GGS 412 | Air Photography Interpretation                          |         |
| GGS 416 | Satellite Image Analysis                               |         |
| GGS 462 | Web Mapping                                             |         |
### Systematic Courses
Select one from the following: 3

- GGS 301 Political Geography
- GGS 302 Global Environmental Hazards
- GGS 303 Geography of Resource Conservation (Mason Core) (p. 142)
- GGS 304 Population Geography (Mason Core) (p. 142)
- GGS 305 Economic Geography
- GGS 306 Urban Geography
- GGS 307 Geographic Approaches on Sustainable Development
- GGS 309 Meteorology and Climate
- GGS 312 Physical Climatology
- GGS 314 Severe and Extreme Weather
- GGS 319 Air Pollution
- GGS 321 Biogeography
- GGS 322 Issues in Global Change
- GGS 357 Urban Planning
- GGS 398 Selected Topics in Global Change
- GGS 399 Select Topics in GGS

### Regional Courses
Select one from the following: 3

- GGS 315 Geography of the United States
- GGS 316 Geography of Latin America
- GGS 317 Geography of China
- GGS 320 Geography of Europe
- GGS 325 Geography of North Africa and the Middle East
- GGS 330 Geography of the Soviet Succession States
- GGS 333 Issues in Regional Geography
- GGS 380 Geography of Virginia

Total Credits 15

### Geography Electives
Select 3 credits of undergraduate-level GGS courses 3
Select 6 credits of 300 or 400-level GGS courses 6

Total Credits 9

### Outside Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 400</td>
<td>Colloquium in Geoinformation Science</td>
<td>1</td>
</tr>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>3-4</td>
</tr>
<tr>
<td>or IT 207</td>
<td>Applied IT Programming</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 11-12

### Mason Core and Elective Credits
In order to meet a minimum of 120 credits, this degree requires an additional 58-60 credits, which may be applied toward any remaining Mason Core (p. 142) requirements, Requirements for Bachelor’s Degrees (p. 89), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

### Mason Core
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Integration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>40</td>
</tr>
</tbody>
</table>

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2. Minimum 3 credits required.

### Accelerated Master's

#### Geography, BS/Geographic and Cartographic Sciences, Accelerated MS

**Overview**

Offered by the Department of Geography and Geoinformation Sciences (GGS) in the College of Science, this bachelor’s/accelerated master’s degree program enables highly qualified undergraduates to obtain the Geography, BS (p. 733) and the Geographic and Cartographic Sciences, MS (p. 724) degrees within an accelerated timeframe. The program strategy enables students to undertake graduate coursework during their final year in the bachelor's degree. This 144 credit program (thesis option) or 151 credit program (comprehensive exam option) prepares students for professional careers where geoinformation management, geographic analysis, and geospatial visualization are of importance.
Students in this accelerated degree program must fulfill all university requirements for the Geography, BS (p. 733) and the Geographic and Cartographic Sciences, MS (p. 724). While the information below is largely comprehensive, students are strongly encouraged to also review AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

Application Requirements

Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master's program after completing at least 90 undergraduate credits. Additionally, they must have completed the following courses with a GPA of 3.0 or better: GGS 102 Physical Geography (Mason Core) (p. 142) or GGS 121 Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142) or GGS 122 Dynamic Geosphere and Ecosphere, GGS 103 Human Geography (Mason Core) (p. 142), GGS 110 Introduction to Geoinformation Technologies, GGS 300 Quantitative Methods for Geographical Analysis, GGS 310 Introduction to Digital Cartography, GGS 311 Introduction to Geographic Information Systems, GGS 412 Air Photography Interpretation, MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142), and MATH 114 Analytic Geometry and Calculus II or IT 207 Applied IT Programming or STAT 250 Introductory Statistics I (Mason Core) (p. 142).

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Admissions section of this catalog. However, this accelerated master’s does not require GRE test scores.

While being undergraduate students, accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application (obtained from the Office of Academic and Student Affairs) with a minimum grade of 3.0 in each course. They must maintain a minimum GPA of 3.0 in all coursework and in coursework applied to their major.

At the beginning of their final undergraduate semester, they must submit the Bachelor’s/Accelerated Master’s Transition Form (found on the Office of the University Registrar website). Students must begin their master’s program in the semester immediately following the term of undergraduate degree conferral. Students should consult with their faculty advisor in the Department of Geography and Geoinformation Science and the Office of Academic and Student Affairs to obtain further guidance.

Accelerated Option Requirements

Students admitted to this program may start taking graduate courses after completing 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master’s degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master’s program and must then complete 24 (thesis option) or 31 (comprehensive exam option) additional credits to receive the master’s degree. All other master’s degree requirements must be met.

Reserve Graduate Credit

During the bachelor’s degree status, students may take up to 6 graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree, but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, the master’s degree can be completed with 18 (thesis option) or 25 (comprehensive exam option) graduate credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. To apply the reserved credits to the master’s degree, students must request their transfer from the undergraduate degree to the graduate degree via the Bachelor’s/Accelerated Master’s Transition Form found on the Office of the University Registrar website.

Geography, BS/Geoinformatics and Geospatial Intelligence, Accelerated MS

Overview

Offered by the Department of Geography and Geoinformation Sciences (GGS) in the College of Science, this bachelor’s/accelerated master’s degree program enables highly qualified undergraduates to obtain the Geography, BS (p. 733) and the Geoinformatics and Geospatial Intelligence, MS (p. 737) degrees within an accelerated timeframe. The program strategy enables students to undertake graduate coursework during their final year in the bachelor’s degree. This 147 credit program prepares students for professional careers where geoinformation management, geographic analysis, and geointelligence and geovisualization are of importance.

Students in this accelerated degree program must fulfill all university requirements for the Geography, BS (p. 733) and the Geoinformatics and Geospatial Intelligence, MS (p. 737). While the information below is largely comprehensive, students are strongly encouraged to also review AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Application Requirements

Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master’s program after completing at least 90 undergraduate credits. Additionally, they must have completed the following courses with a GPA of 3.0 or better: GGS 102 Physical Geography (Mason Core) (p. 142) or GGS 121 Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142), GGS 110 Introduction to Geoinformation Technologies, GGS 300 Quantitative Methods for Geographical Analysis, GGS 310 Introduction to Digital Cartography, GGS 311 Introduction to Geographic Information Systems, GGS 412 Air Photography Interpretation, MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142), and MATH 114 Analytic Geometry and Calculus II or IT 207 Applied IT Programming or STAT 250 Introductory Statistics I (Mason Core) (p. 142).

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Admissions section of this catalog. However, this accelerated master’s does not require GRE test scores.

While being undergraduate students, accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application (obtained from the Office of Academic and Student Affairs) with a minimum grade of 3.0 in each course. They must maintain a minimum GPA of 3.0 in all coursework and in coursework applied to their major.

At the beginning of their final undergraduate semester, they must submit the Bachelor’s/Accelerated Master’s Transition Form (found on the Office of the University Registrar website). Students must begin their master’s program in the semester immediately following the term of undergraduate degree conferral. Students should consult with their faculty advisor in the Department of Geography and Geoinformation Science and the Office of Academic and Student Affairs to obtain further guidance.
Accelerated Option Requirements

Students admitted to this program may start taking graduate courses after completing 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master's degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master's program and must then complete 27 additional credits to receive the master's degree. All other master's degree requirements must be met.

Reserve Graduate Credit

During the bachelor's degree status, students may take up to 6 graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree, but will reduce the subsequent master's degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, the master's degree can be completed with 21 graduate credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. To apply the reserved credits to the master's degree, students must request their transfer from the undergraduate degree to the graduate degree via the Bachelor's/Accelerated Master's Transition Form found on the Office of the University Registrar website.

Geography Minor

Banner Code: GEOG

Nathan R. Burtch, Undergraduate Coordinator

2413 Exploratory Hall

Phone: 703-993-1207
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/minor-in-geography/

A minor in geography is a natural complement to an array of careers, including engineering, government and international politics, environmental science, transportation, business, marketing, and public health. Any Mason undergraduate student is eligible to earn a minor in geography by completing 18-20 credits as outlined in the Requirements tab above; many qualifying courses also fulfill Mason Core (p. 142) requirements.

If desired, this minor can be pursued fully online; details can be found with Mason Online (http://masononline.gmu.edu).

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Students must complete all coursework with a minimum GPA of 2.00.

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87).

Requirements

Minor Requirements

Total credits: 18-20

Students should refer to the Admissions & Policies (p. 736) tab for specific policies related to this program.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 102</td>
<td>Physical Geography (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>or GGS 121</td>
<td>Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6-7

Systematic and Regional Requirement

Select one course in systematic geography and one course in regional geography:

<table>
<thead>
<tr>
<th>Systematic Geography:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 301</td>
</tr>
<tr>
<td>GGS 302</td>
</tr>
<tr>
<td>GGS 303</td>
</tr>
<tr>
<td>GGS 304</td>
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</tr>
<tr>
<td>GGS 399</td>
</tr>
<tr>
<td>GGS 456</td>
</tr>
</tbody>
</table>

Regional Geography:

| GGS 315 | Geography of the United States |
| GGS 316 | Geography of Latin America |
| GGS 320 | Geography of Europe |
| GGS 325 | Geography of North Africa and the Middle East |
| GGS 330 | Geography of the Soviet Succession States |
| GGS 333 | Issues in Regional Geography |
Geoinformatics and Geospatial Intelligence, MS
Banner Code: SC-MS-GEOI

Academic Advising
4400 University Drive, MSN 6C3
Fairfax, VA 22030
Phone: 703-993-1210
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/ms-in-geoinformatics-and-geospatial-intelligence/

The program addresses the emerging demand for scientists trained in the collection, organization, analysis, and dissemination of information about physical features, man-made structures, moving objects, people, and events that are geo-referenced or geo-located. This program focuses primarily on the computational approaches that support the synthesis and analysis of diverse types of data in order to identify and monitor complex events and phenomena that manifest over space and time. While geospatial intelligence has a strong Department of Defense connotation, the principles behind it have a significant dual use potential, addressing the needs of a broader audience, ranging for example from intelligent navigation in urban spaces to emergency response systems for natural and man-made disasters.

The MS is designed to expose students to fundamental theoretical principles and practical applications involving:

- Geographic Information Science
- Digital image analysis as it applies to geoinformatics and geospatial intelligence
- Computational principles for geoinformatics and intelligence

Admissions & Policies

Admissions
University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility and Application Requirements
Applicants for this master's should hold a BA or BS degree in a discipline related to the program’s theme from a regionally accredited university, with a minimum GPA of 3.00, including courses in differential and integral calculus. A working knowledge of a computer programming language is a plus. When the background of an individual student does not meet the program’s requirements, remedial or preparatory courses tailored to student’s needs may be recommended. To apply, prospective students should complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now). Official transcripts from each college and graduate institution attended, a current résumé, and a goals statement will be required.

Applicants will also need three letters of recommendation and an official report of scores obtained on the GRE-GEN. The GRE requirement for admission may be waived if the student holds a master's degree from a regionally accredited US institution. TOEFL scores are required of all international applicants.

Policies
For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Secondary Program Options
Students enrolled in this master's program have the option of adding a secondary graduate certificate program. Depending upon the secondary program chosen, many courses may be applicable to both the certificate and the master’s. Before adding a secondary program, students are advised to carefully review AP.6.8 Requirements for Graduate Certificates (p. 94) and AP.6.9 Requirements for Master's Degrees (p. 94). Faculty advisors should be contacted for further guidance and for graduate certificate program suggestions.

Requirements

Degree Requirements
Total credits: 33
Students should refer to the Admissions & Policies (p. 737) tab for specific policies related to this program.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>GGS 550</td>
<td>Geospatial Science Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 664</td>
<td>Spatial Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>GGS 684</td>
<td>Selected Topics in Geospatial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>GGS 685</td>
<td>Capstone Course in Geoinformatics</td>
<td>3</td>
</tr>
<tr>
<td>GGS 680</td>
<td>Earth Image Processing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 787</td>
<td>Scientific Data Mining for Geoinformatics</td>
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Total Credits 21

Thesis

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Total Credits 3
Electives

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<td>GGS 562</td>
<td>Photogrammetry</td>
<td>3</td>
</tr>
<tr>
<td>GGS 579</td>
<td>Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 740</td>
<td>Hyperspectral Imaging Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 760</td>
<td>Advanced Topics in Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 840</td>
<td>Hyperspectral Imaging Applications</td>
<td>3</td>
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</table>

**Geographic Information Science:**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GGS 550</td>
<td>Geospatial Science Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>GGS 563</td>
<td>Advanced Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 653</td>
<td>Geographic Information Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 675</td>
<td>Location Science</td>
<td>3</td>
</tr>
<tr>
<td>GGS 772</td>
<td>Cloud Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 791</td>
<td>Advanced Spatial Statistics</td>
<td>3</td>
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</table>

**Computational Geoinformatics:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>GGS 650</td>
<td>Introduction to GIS Algorithms and Programming</td>
<td>3</td>
</tr>
<tr>
<td>GGS 671</td>
<td>Algorithms and Modeling in GIS</td>
<td>3</td>
</tr>
<tr>
<td>GGS 681</td>
<td>Social Media Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 692</td>
<td>Web-based Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 754</td>
<td>Earth Science Data and Advanced Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 773</td>
<td>Interoperability of Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

---

**Application Requirements**

Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master’s program after completing at least 90 undergraduate credits. Additionally, they must have completed the following courses with a GPA of 3.0 or better: GGS 102 Physical Geography (Mason Core) (p. 142), GGS 121 Dynamic Atmosphere and Hydrosphere (Mason Core) (p. 142), GGS 103 Human Geography (Mason Core) (p. 142), GGS 110 Introduction to Geoinformation Technologies, GGS 300 Quantitative Methods for Geographical Analysis, GGS 310 Introduction to Digital Cartography, GGS 311 Introduction to Geographic Information Systems, GGS 412 Air Photography Interpretation, MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142), MATH 114 Analytic Geometry and Calculus II or IT 207 Applied IT Programming or STAT 250 Introductory Statistics I (Mason Core) (p. 142).

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Admissions section of this catalog. However, this accelerated master’s does not require GRE test scores.

While being undergraduate students, accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application (obtained from the Office of Academic and Student Affairs) with a minimum grade of 3.0 in each course. They must maintain a minimum GPA of 3.0 in all coursework and in coursework applied to their major.

At the beginning of their final undergraduate semester, they must submit the Bachelor’s/Accelerated Master’s Transition Form (found on the Office of the University Registrar website). Students must begin their master’s program in the semester immediately following the term of undergraduate degree conferral. Students should consult with their faculty advisor in the Department of Geography and Geoinformation Science and the Office of Academic and Student Affairs to obtain further guidance.

**Accelerated Option Requirements**

Students admitted to this program may start taking graduate courses after completing 90 undergraduate credits. Up to 6 credits of graduate coursework may be applied to both undergraduate degree and the master’s degree. If students earn at least a 3.0 in these classes, they are granted advanced standing in the master’s program and must then complete 27 additional credits to receive the master’s degree. All other master’s degree requirements must be met.

**Reserve Graduate Credit**

During the bachelor’s degree status, students may take up to 6 graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree, but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, the master’s degree can be completed with 21 graduate credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. To apply the reserved credits to the master’s degree, students must request their transfer from the undergraduate degree to the graduate degree via the Bachelor’s/Accelerated Master’s Transition Form found on the Office of the University Registrar website.
Geospatial Intelligence Graduate Certificate

Banner Code: SC-CERG-GI

Academic Advising
4400 University Drive, MSN 6C3
Fairfax, VA 22030
Phone: 703-993-1210
Email: ggs@gmu.edu
Website: https://cos.gmu.edu/ggs/academic-programs/graduate-certificate-in-geospatial-intelligence/

This graduate certificate is for persons employed in geospatial intelligence applications (i.e., federal agency and/or corporate or association personnel) or those interested in entering this field. Our program offers fundamental knowledge on geospatial intelligence and the ability to apply this knowledge to a diverse range of constantly evolving geospatial intelligence situations. This graduate certificate has been accredited by the United States Geospatial Intelligence Foundation.

The majority of courses required for this certificate are also available online. For more information visit Mason Online (http://masononline.gmu.edu).

The graduate certificate in geospatial intelligence may be pursued on a part-time or full-time basis, and qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Geospatial_Intelligence/Gedt.html).

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

Applicants to this graduate certificate program should hold a BA or BS degree in a discipline related to the certificate’s theme from a regionally-accredited university with a minimum GPA of 3.00. To apply, prospective students should complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now). In addition, applicants to this certificate program must submit a current résumé, and GRE scores. Letters of recommendation are not required but will considerably strengthen an application, if available. TOEFL scores are required of all international applicants.

Applicants should have undergraduate backgrounds that include courses in differential and integral calculus, and they should possess working knowledge of a computer programming language. Depending on the background of the individual student, the coordinator may recommend remedial or preparatory courses tailored to the student’s needs.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Premium Tuition Rate

This professional certificate program charges students at a differential (premium) tuition rate. This rate applies to all students who enroll in this certificate program, regardless of in-state or out-of-state status. The differential tuition will be used to fund continuing improvements in the departmental computational facilities used to support the certificate program.

Transfer of Credit

Students may transfer no more than 3 credits into the certificate program with the approval of the academic director.

Requirements

Certificate Requirements

Total credits: 18

This certificate may be pursued on a full-or part-time basis.

Students should refer to the Admissions & Policies (p. 739) tab for specific policies related to this program.

Core Courses

The mandatory core courses reflect the three key science emphases of this program: geospatial image analysis, spatial analysis, and information technology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 680</td>
<td>Earth Image Processing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 684</td>
<td>Selected Topics in Geospatial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>GGS 685</td>
<td>Capstone Course in Geoinformatics</td>
<td>3</td>
</tr>
<tr>
<td>GGS 650</td>
<td>Introduction to GIS Algorithms and Programming</td>
<td>3</td>
</tr>
<tr>
<td>GGS 664</td>
<td>Spatial Data Structures</td>
<td></td>
</tr>
<tr>
<td>GGS 692</td>
<td>Web-based Geographic Information Systems</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

Elective

Select one additional elective course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 563</td>
<td>Advanced Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 579</td>
<td>Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>GGS 631</td>
<td>Spatial Agent-Based Models of Human-Environment Interactions</td>
<td></td>
</tr>
<tr>
<td>GGS 650</td>
<td>Introduction to GIS Algorithms and Programming</td>
<td></td>
</tr>
<tr>
<td>GGS 658</td>
<td>Terrain Mapping</td>
<td></td>
</tr>
<tr>
<td>GGS 664</td>
<td>Spatial Data Structures</td>
<td></td>
</tr>
<tr>
<td>GGS 671</td>
<td>Algorithms and Modeling in GIS</td>
<td></td>
</tr>
<tr>
<td>GGS 675</td>
<td>Location Science</td>
<td></td>
</tr>
<tr>
<td>GGS 681</td>
<td>Social Media Analysis</td>
<td></td>
</tr>
</tbody>
</table>
Remote Sensing and Image Processing Graduate Certificate

Banner Code: SC-CERG-RSIP

Academic Advising

4400 University Drive, MSN 6C3
Fairfax, VA 22030
Phone: 703-993-1210
Email: ggs@gmu.edu
Website: cos.gmu.edu/ggs/academic-programs/graduate-certificate-in-remote-sensing-and-image-processing/

This certificate program focuses on the skills needed to take advantage of the enormous increase in the availability and use of remotely sensed data related to the Earth. Ideal candidates for this certificate are those who have a background in Earth and environmental sciences and are working in or planning to enter into the field of remote sensing, Earth observing, or image processing.

The Remote Sensing and Image Processing Graduate Certificate may be pursued on a part-time or full-time basis.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants to this certificate program must submit a current résumé. TOEFL scores are required of all international applicants who do not hold at least a bachelor’s degree from a regionally-accredited institution within the US (some exceptions apply).

Applicants should hold a BA or BS degree in a discipline related to the science and applications of remote sensing from a regionally accredited university, with a minimum GPA of 3.00. Applicants should have some prior education or training in remote sensing or image processing.

Students with a background in one of the physical sciences (physics, chemistry, atmospheric science, hydrology, or geology), geography, or environmental science will be particularly well-suited to undertake this program. Applicants should have an undergraduate background that includes courses in differential and integral calculus, and they should possess working knowledge of a computer programming language.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Premium Tuition Rate

This professional certificate program charges students at a differential (premium) tuition rate. This rate applies to all students who enroll in this certificate program, regardless of in-state or out-of-state status. The differential tuition will be used to fund continuing improvements in the departmental computational facilities used to support the certificate program.

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a full-or part-time basis.

Students should refer to the Admissions & Policies (p. 740) tab for specific policies related to this program.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 579</td>
<td>Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 680</td>
<td>Earth Image Processing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 740</td>
<td>Hyperspectral Imaging Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9</td>
</tr>
</tbody>
</table>

Electives

Select two electives from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 562</td>
<td>Photogrammetry</td>
<td></td>
</tr>
<tr>
<td>GGS 754</td>
<td>Earth Science Data and Advanced Data Analysis</td>
<td></td>
</tr>
<tr>
<td>GGS 756</td>
<td>Physical Principles of Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>GGS 760</td>
<td>Advanced Topics in Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>GGS 840</td>
<td>Hyperspectral Imaging Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Department of Mathematical Sciences

Phone: 703-993-1460
Email: dwalnut@gmu.edu
Website: math.gmu.edu

Administration

- David Walnut, Chair
- John Kulesza, Associate Chair
- Igor Griva, Undergraduate Coordinator
- Flavia Colonna, Graduate Coordinator
The Department of Mathematical Sciences offers undergraduate and graduate degree programs in mathematics for students with various interests and career goals. Students may pursue the standard program or a program focused on actuarial mathematics, applied mathematics, mathematics education, or mathematical statistics. Students may complement other interests by taking a double major in mathematics and a related field, such as chemistry, economics, physics, computer science, or engineering.

Math Tutoring Center
The department manages the Math Tutoring Center (http://math.gmu.edu/tutor-center.php?_ga=1.265621830.873783809.1452007880), which offers free tutoring for first- and second-year math courses. Tutoring is given by advanced mathematics students and is available on a drop-in basis with daytime and evening hours throughout the semester.

Math Learning Center
For a fee, the Math Learning Center (http://math.gmu.edu/math-learning-center.php) offers self-paced and classroom noncredit tutorial programs for students who do not place into the math course they need. Special tutors and tutorial software are available to those enrolled in the program. Successful completion of the relevant program enables students to enroll in MATH 105 Precalculus Mathematics, MATH 108 Introductory Calculus with Business Applications (Mason Core) (p. 142), MATH 110 Introductory Probability (Mason Core) (p. 142), MATH 111 Linear Mathematical Modeling (Mason Core) (p. 142), or MATH 125 Discrete Mathematics I (Mason Core) (p. 142).

Certificate in College Teaching
A student enrolled in the Mathematics, MS (p. 754) or Mathematics, PhD (p. 756) who is primarily interested in pursuing a career in undergraduate education at the college level is encouraged to consider enrolling in the College Teaching Graduate Certificate (p. 540) offered through the College of Humanities and Social Sciences (p. 305).

Credit can be earned for HE 685 Practicum by working one semester as a graduate teaching assistant in the Department of Mathematical Sciences (p. 740).

Faculty

Department Faculty

Professors
Anderson, Colonna (graduate coordinator), Emelianenko, Goldin, Kulesza (associate chair), Lawrence, Morris, Sachs, Sander, Saperstone, Sauer (COS distinguished scholar), Seshaiyer, Singman, Soltan, Walnut (chair), Wanner

Associate Professors
Antil, Aagnarsson, Epstein, Griva (undergraduate coordinator), Lamba, Lawton

Assistant Professors
Carchedi, Bulancea, De la Pena, Eckley, Fox, Lukyanenko, Holzer, Nelson, Rebuhn-Glanz (R-G), Whelan

Instructors
Andreani, Boyette, Coleson, Crossin, Granfield, Sausville

Affiliates
Nash
Emeriti
Cabell, Levy, Lin, Polyak, Saperstone, Shapiro

Requirements & Policies

Policies

Writing-Intensive Requirement
Mason policy requires all students to complete at least one course designated as "writing intensive" in their major. Students majoring in mathematics fulfill this requirement by successfully completing MATH 290 Introduction to Advanced Mathematics.

Teacher Licensure
Students who wish to become teachers should consult the College of Education and Human Development (p. 161) section of this catalog and attend an information session early in their studies. For more information, visit the Graduate School of Education (http://gse.gmu.edu).

Information on Undergraduate MATH Courses

Admissions & Policies

For Mathematics Majors (p. 741)
• For Mathematics Majors (p. 741)
• For Non-mathematics Majors (p. 741)
• For Both Mathematics and Non-mathematics Majors (p. 742)

For Mathematics Majors

The following cannot be used as substitutes for any requirements of the major in mathematics:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 104</td>
<td>Trigonometry and Transcendental Functions</td>
<td>2</td>
</tr>
<tr>
<td>MATH 105</td>
<td>Precalculus Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 106</td>
<td>Quantitative Reasoning (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 110</td>
<td>Introductory Probability (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 111</td>
<td>Linear Mathematical Modeling (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 112</td>
<td>Discrete Mathematics for IT</td>
<td>3</td>
</tr>
<tr>
<td>MATH 271</td>
<td>Mathematics for the Elementary School Teachers I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 272</td>
<td>Mathematics for the Elementary School Teachers II</td>
<td>3</td>
</tr>
</tbody>
</table>

For Non-mathematics Majors

• MATH 108 Introductory Calculus with Business Applications (Mason Core) (p. 142), MATH 110 Introductory Probability (Mason Core) (p. 142), and MATH 111 Linear Mathematical Modeling (Mason Core) (p. 142) are designed for students in the social and behavioral sciences.
• Liberal arts majors are advised to take MATH 106 Quantitative Reasoning (Mason Core) (p. 142), MATH 110 Introductory...
Probability (Mason Core) (p. 142), or MATH 111 Linear Mathematical Modeling (Mason Core) (p. 142).

- Students in the natural sciences who plan to do graduate work are advised to add courses from:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 313</td>
<td>Introduction to Applied Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 314</td>
<td>Introduction to Applied Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 351</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>MATH 352</td>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 441</td>
<td>Deterministic Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>MATH 442</td>
<td>Stochastic Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>MATH 446</td>
<td>Numerical Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 447</td>
<td>Numerical Analysis II</td>
<td>3</td>
</tr>
</tbody>
</table>

For Both Mathematics and Non-mathematics Majors

- MATH 104 Trigonometry and Transcendental Functions, MATH 105 Precalculus Mathematics, MATH 108 Introductory Calculus with Business Applications (Mason Core) (p. 142), MATH 112 Discrete Mathematics for IT, MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142), MATH 125 Discrete Mathematics I (Mason Core) (p. 142) have a qualifying score on the Math Placement Test (http://math.gmu.edu/placement_test.php) as a prerequisite. The Math Placement Test (http://math.gmu.edu/placement_test.php) is given frequently, for the schedule, inquire at the department office or check the Department of Mathematical Sciences website (http://math.gmu.edu).

- The sequence MATH 123 Calculus with Algebra/Trigonometry, Part A and MATH 124 Calculus with Algebra/Trigonometry, Part B (Mason Core) (p. 142) is an option for students who need MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142) but believe they are not prepared for that course. In these two 3-credit courses, students will learn fundamental algebra and calculus so that upon completion of the sequence, students will be prepared for MATH 114 Analytic Geometry and Calculus II.

- Students who do not achieve the necessary test score needed to take a math course may go to the Math Learning Center (http://math.gmu.edu/math-learning-center.php), or they may study and retake the test on their own. A student who does not complete the relevant program in the Math Learning Center (http://math.gmu.edu/math-placement_test.php) or does not achieve the necessary score on the Math Placement Test (http://math.gmu.edu/math-placement_test.php) will not be able to enroll in the class. Depending on their test scores, students who do not place into MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142) will be advised to take MATH 104 Trigonometry and Transcendental Functions or MATH 105 Precalculus Mathematics or visit the Math Learning Center (http://math.gmu.edu/math-learning-center.php) to prepare for MATH 114 Analytic Geometry and Calculus II.

- Students who do not achieve the necessary test score needed to take a math course may go to the Math Learning Center (http://math.gmu.edu/math-learning-center.php), or they may study and retake the test on their own. A student who does not complete the relevant program in the Math Learning Center (http://math.gmu.edu/math-placement_test.php) or does not achieve the necessary score on the Math Placement Test (http://math.gmu.edu/math-placement_test.php) will not be able to enroll in the class. Depending on their test scores, students who do not place into MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142) will be advised to take MATH 104 Trigonometry and Transcendental Functions or MATH 105 Precalculus Mathematics or visit the Math Learning Center (http://math.gmu.edu/math-learning-center.php) to prepare for MATH 114 Analytic Geometry and Calculus II.

- MATH 104 Trigonometry and Transcendental Functions and MATH 105 Precalculus Mathematics do not fulfill the Mason Core (p. 142) ‘Quantitative Reasoning’ requirement.

- Students may not receive credit for both MATH 214 Elementary Differential Equations and MATH 216 Theory of Differential Equations; both MATH 213 Analytic Geometry and Calculus III and MATH 215 Analytic Geometry and Calculus III (Honors); both MATH 351 Probability and STAT 344 Probability and Statistics for Engineers and Scientists I; and both MATH 352 Statistics and STAT 354 Probability and Statistics for Engineers and Scientists II.

- After receiving a grade of ‘C’ or better in one of the courses listed below on the left, students may not receive credit for the corresponding course on the right:

<table>
<thead>
<tr>
<th>Course</th>
<th>May Not Receive Credit for</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113 or MATH 123</td>
<td>MATH 105 or MATH 108</td>
</tr>
<tr>
<td>MATH 351 or STAT 344</td>
<td>MATH 110</td>
</tr>
<tr>
<td>MATH 441</td>
<td>MATH 111</td>
</tr>
<tr>
<td>MATH 125</td>
<td>MATH 112</td>
</tr>
</tbody>
</table>

**Programs**

- Actuarial Sciences Graduate Certificate
- Mathematics Minor
- Mathematics for School of Business Students Minor
- Mathematics, BA
- Mathematics, BS
- Mathematics, MS
- Mathematics, PhD

**Actuarial Sciences Graduate Certificate**

Banner Code: SC-CERG-ACTS

Douglas Eckley
Exploratory Hall, Room 4451
Fairfax Campus
Phone: 703-993-1682
Email: deckley2@gmu.edu
Website: math.gmu.edu/graduate/cert-in-actuarial.php

The Actuarial Sciences Graduate Certificate is designed to serve students and professionals who are interested in pursuing careers as actuaries. The course content provides students with specific training related to the following exams administered by the Society of Actuaries (SOA):

- Financial Mathematics Exam
- Long-Term Actuarial Mathematics Exam
- Short-Term Actuarial Mathematics Exam
- Statistics for Risk Modeling Exam
- Investment and Financial Markets Exam

The courses also provide a solid foundation for the corresponding Casualty Actuary Society (CAS) exams. Passing the first professional exam, i.e. the SOA Probability Exam, is equivalent to meeting the prerequisites for the certificate courses in the area of probability and statistics.

The Actuarial Sciences Graduate Certificate may only be pursued on a part-time basis.
Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Interested applicants must submit three letters of recommendation. GRE scores are not required.

Students intending to pursue the Actuarial Sciences Graduate Certificate must have three semesters of calculus, a course in linear algebra (equivalent to MATH 203 Linear Algebra), a calculus-based course in probability (equivalent to MATH 351 Probability), and statistics (equivalent to MATH 352 Statistics). Passing the first professional exam, i.e. the SOA Probability Exam, is also sufficient preparation for the certificate program.

Policies

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

Requirements

Certificate Requirements

Total credits: 18

This certificate may be pursued on a part-time basis only.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 551</td>
<td>Regression and Time Series</td>
<td>3</td>
</tr>
<tr>
<td>MATH 553</td>
<td>Advanced Mathematical Statistics in</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Actuarial Sciences</td>
<td></td>
</tr>
<tr>
<td>MATH 554</td>
<td>Financial Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 555</td>
<td>Actuarial Modeling I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 557</td>
<td>Financial Derivatives</td>
<td>3</td>
</tr>
<tr>
<td>MATH 653</td>
<td>Construction and Evaluation of Actuarial</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Models I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Preparation for the SOA Exams

The graduate certificate coursework provides preparation for the SOA exams as follows:

MATH 551 Regression and Time Series and MATH 553 Advanced Mathematical Statistics in Actuarial Sciences combined: Statistics for Risk Modeling Exam

MATH 554 Financial Mathematics: Financial Mathematics Exam

MATH 555 Actuarial Modeling I: Long-Term Actuarial Mathematics Exam

MATH 557 Financial Derivatives: Investment and Financial Markets Exam

MATH 653 Construction and Evaluation of Actuarial Models I: Short-Term Actuarial Mathematics Exam

The SOA exams overlap significantly with the Casualty Actuarial Society (“CAS”) exams.

Counting Actuarial Courses for Other Mathematics Degrees

A student enrolled in the Actuarial Sciences Graduate Certificate and another graduate degree program in mathematics can count actuarial mathematics courses toward the master’s or doctoral degree according to the following rules:

- None of the core actuarial mathematics courses can count toward the Mathematics, PhD (https://catalog.gmu.edu-colleges-schools-science/mathematical-sciences/mathematics-phd)
- None of the actuarial mathematics courses MATH 551 Regression and Time Series, MATH 554 Financial Mathematics and MATH 655 Pension Valuation can count toward the Mathematics, MS (https://catalog.gmu.edu-colleges-schools-science/mathematical-sciences/mathematics-ms)
- The two actuarial mathematics courses MATH 555 Actuarial Modeling I and MATH 653 Construction and Evaluation of Actuarial Models I can count toward the Mathematics, MS (https://catalog.gmu.edu-colleges-schools-science/mathematical-sciences/mathematics-ms) provided that all other courses counted toward that degree are MATH courses. An exception can be made if the student wishes to count only one of these two courses toward the Statistics, MS (https://catalog.gmu.edu-colleges-schools-engineering/statistics-statistical-sciences) as an approved non-STAT elective course and can count MATH 555 Actuarial Modeling I as a STAT elective when designing a curriculum for this degree. The full curriculum should be designed in consultation with the student’s Statistics Department (p. 1136) advisor.

Counting Actuarial Courses toward the Statistical Science, MS Degree

A student enrolled in this certificate and in the Statistical Science, MS (https://catalog.gmu.edu-colleges-schools-engineering/statistics-statistical-sciences-ms) can count MATH 555 Actuarial Modeling I as an approved non-STAT elective course and can count MATH 653 Construction and Evaluation of Actuarial Models I as a STAT elective when designing a curriculum for this degree. The full curriculum should be designed in consultation with the student’s Statistics Department (p. 1136) advisor.

Mathematics, BA

Banner Code: SC-BA-MATH

Academic Advising

4411 Exploratory Hall
Fairfax Campus

Phone: 703-993-1482
Email: danders1@gmu.edu
Website: math.gmu.edu/degree-programs.php
This bachelor’s program provides exciting opportunities for students interested in mathematics.

**Teacher Licensure**
Students who wish to become teachers and plan to seek teacher licensure should consider the following options:

- Curriculum and Instruction Undergraduate Certificate (p. 166)
- Mathematics, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Mathematics concentration) (p. 747)

Interested students should attend an information session early in their studies. For more information, visit the Graduate School of Education’s website (http://gse.gmu.edu).

**Admissions & Policies**

**Admissions**
University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**
Students must fulfill all Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142). As outlined in the Requirements tab, students in this bachelor’s program must also complete the additional College Requirements for the BA Degree.

MATH 290 Introduction to Advanced Mathematics meets the writing intensive requirement for this major.

For policies governing all undergraduate programs, see AP .5 Undergraduate Policies (p. 87).

Graduating seniors are required to have an exit interview.

**Course Recommendations and Policies**
Students intending to enter graduate school in mathematics are strongly advised to take MATH 315 Advanced Calculus I and MATH 321 Abstract Algebra.

Students may not receive credit for both MATH 214 Elementary Differential Equations and MATH 216 Theory of Differential Equations; both MATH 213 Analytic Geometry and Calculus III and MATH 215 Analytic Geometry and Calculus III (Honors); both MATH 351 Probability and STAT 344 Probability and Statistics for Engineers and Scientists I; and both MATH 352 Statistics and STAT 354 Probability and Statistics for Engineers and Scientists II.

After receiving a grade of ‘C’ or better in one of the courses listed below on the left, students may not receive credit for the corresponding course on the right:

<table>
<thead>
<tr>
<th>Course</th>
<th>May Not Receive Credit for</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113 or MATH 123</td>
<td>MATH 105 or MATH 108</td>
</tr>
<tr>
<td>MATH 351 or STAT 344</td>
<td>MATH 110</td>
</tr>
</tbody>
</table>

**Requirements**

**Degree Requirements**
Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 744) tab for specific policies related to this program.

A maximum of 6 credits of grades below 2.00 in coursework designated MATH or STAT may be applied toward the major.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 215</td>
<td>Analytic Geometry and Calculus III (Honors)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 216</td>
<td>Theory of Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 290</td>
<td>Introduction to Advanced Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 322</td>
<td>Advanced Linear Algebra</td>
<td>3</td>
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</tbody>
</table>

Total Credits: 26

1. Fulfills the writing intensive requirement.

In addition to completing the core courses above, students must complete 12 additional traditional mathematics credits in MATH courses numbered above 300.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 12 credits in MATH 300-level or higher (p. 1923)</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

1. Excluding MATH 400 History of Math (Topic Varies) (Mason Core) (p. 142)

**Mason Core and Elective Credits**

In order to meet a minimum of 120 credits, this degree requires an additional 82 credits which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), College Requirements for the BA Degree (outlined below), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.
### Foundation Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
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</table>

### Exploration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Integration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 40

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2. Minimum 3 credits required.

### College Requirements for the BA Degree

In addition to the program requirements and the Mason Core (p. 142) requirements, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill this college-level requirement may also be used simultaneously to satisfy other requirements such as Mason Core (p. 142) requirements, other college-level requirements, or requirements for the major. In some cases, the requirements listed below may be superseded by requirements of the degree program and the Mason Core (p. 142).

#### Philosophy or Religious Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>select 3 credits from the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHIL (p. 2044)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>RELI (p. 2144)</td>
<td></td>
</tr>
</tbody>
</table>

1. PHIL 323 Classical Western Political Theory and PHIL 324 Modern Western Political Theory may not be used to fulfill this requirement.

#### Social and Behavioral Sciences

Choose one approved Mason Core: Social and Behavioral Sciences (p. 150) course in addition to the Mason Core (p. 142) required course for a total of 6 credits. The two courses used to fulfill the combined college-level and university requirements must be from different disciplines.

This requirement may be fulfilled by completing any course in ANTH (p. 1212), CRIM (p. 1514), ECON (p. 1564), GOVT (p. 1774), HIST (p. 1818) 1, LING (p. 1896), PSYC (p. 2074), or SOCI (p. 2167), and the following GGS (p. 1732)courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select any course from the disciplines above or select from</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the following GGS courses:</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Natural Science

Choose one credit in addition to the Mason Core: Natural Science (p. 148) requirement for a total of 8 credits. This combined college-level and university requirement must be fulfilled by completing two of any approved Mason Core: Natural Science (p. 148) courses that include a laboratory experience 1.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional Mason Core Natural Science course</td>
<td>1</td>
</tr>
</tbody>
</table>

1. BIOL 124 Human Anatomy and Physiology and BIOL 125 Human Anatomy and Physiology may not be used to fulfill this requirement.

#### Foreign Language

Intermediate-level proficiency in one foreign language is required 1. This requirement may be fulfilled by completing a course in a foreign language numbered 202, 209, or 210 (or higher-level courses taught in the language).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select a foreign language course numbered 202, 209, 210, or</td>
<td>0-3</td>
</tr>
<tr>
<td></td>
<td>or higher if a waiver isn't applicable</td>
<td></td>
</tr>
</tbody>
</table>

1. Students may be eligible for a waiver of this requirement if they are already proficient in a second language or if they have received a satisfactory score on an approved proficiency test. Additional information on waivers can be found via the college's Office of Academic and Student Affairs [https://cos.gmu.edu/uaa](https://cos.gmu.edu/uaa).

#### Non-Western Culture

Choose one approved Non-Western Culture Requirement 1 course in addition to the course used to fulfill the Mason Core: Global Understanding (p. 146) requirement. A course used to fulfill the Mason

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>GGS 101 Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 103 Human Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 110 Introduction to Geoinformation Technologies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 301 Political Geography</td>
<td></td>
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<tr>
<td></td>
<td>GGS 303 Geography of Resource Conservation (Mason Core) (p.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 304 Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 305 Economic Geography</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 306 Urban Geography</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 315 Geography of the United States</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 316 Geography of Latin America</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 320 Geography of Europe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 325 Geography of North Africa and the Middle East</td>
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<tr>
<td></td>
<td>GGS 330 Geography of the Soviet Succession States</td>
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<tr>
<td></td>
<td>GGS 357 Urban Planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGS 380 Geography of Virginia</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 3
Core: Global Understanding (p. 146) requirement may not be simultaneously used to satisfy this college-level requirement. However, a course used to fulfill this requirement may be used simultaneously to fulfill any other requirements (Mason Core (p. 142) requirements, college-level requirements, or requirements for the major).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 307</td>
<td>Ancient Mesoamerica (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 308</td>
<td>Peoples and Cultures of the Middle East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Myth, Magic, and Mind (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Zombies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Peoples and Cultures of Selected Regions: Non-Western</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 332</td>
<td>Cross-Cultural Perspectives on Globalization (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 381</td>
<td>Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Issues in Anthropology: Social Sciences (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ARAB 360</td>
<td>Topics in Arabic Cultural Production</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 420</td>
<td>Survey of Arabic Literature</td>
<td>3</td>
</tr>
<tr>
<td>ARAB 440</td>
<td>Topics in Arabic Religious Thought and Texts (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 318</td>
<td>Art and Archaeology of Ancient Egypt</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 319</td>
<td>Art and Archaeology of the Ancient Near East (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 320</td>
<td>Art of the Islamic World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 382</td>
<td>Arts of India (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 383</td>
<td>Arts of Southeast Asia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 384</td>
<td>Arts of China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 385</td>
<td>Arts of Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 386</td>
<td>The Silk Road (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 482</td>
<td>RS: Advanced Studies in Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 318</td>
<td>Introduction to Classical Chinese (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 320</td>
<td>Contemporary Chinese Film</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 325</td>
<td>Major Chinese Writers (Mason Core) (p. 142)</td>
<td>3</td>
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<td>DAN 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
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<td>ECN 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>ECN 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>FREN 451</td>
<td>Topics in Sub-Saharan Francophone Literature and Culture</td>
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<tr>
<td>FREN 454</td>
<td>Topics in Caribbean Francophone Literature and Culture</td>
<td>3</td>
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<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>GGS 316</td>
<td>Geography of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>GGS 325</td>
<td>Geography of North Africa and the Middle East</td>
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</tr>
<tr>
<td>GGS 330</td>
<td>Geography of the Soviet Succession States</td>
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<tr>
<td>GGS 399</td>
<td>Select Topics in GGS</td>
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<td>GOVT 328</td>
<td>Global Political Theory</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
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<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
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<td>Government and Politics of Russia</td>
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<td>GOVT 340</td>
<td>Central Asian Politics</td>
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</tr>
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<td>GOVT 341</td>
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<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
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<tr>
<td>HIST 251</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>HIST 252</td>
<td>Survey of East Asian History (Mason Core) (p. 142)</td>
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<tr>
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<td>Survey of Middle Eastern Civilization (Mason Core) (p. 142)</td>
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<tr>
<td>HIST 326</td>
<td>Stalinism</td>
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<td>HIST 327</td>
<td>The Soviet Union and Russia Since World War II</td>
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</tr>
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<td>HIST 328</td>
<td>Rise of Russia (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 329</td>
<td>Modern Russia and the Soviet Union (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>HIST 353</td>
<td>History of Traditional China</td>
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</tr>
<tr>
<td>HIST 354</td>
<td>Modern China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Modern Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 357</td>
<td>Postwar Japan (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 358</td>
<td>Post-1949 China (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 360</td>
<td>History of South Africa (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
HIST 364  Revolution and Radical Politics in Latin America (Mason Core) (p. 142) 3
HIST 365  Conquest and Colonization in Latin America (Mason Core) (p. 142) 3
HIST 366  Comparative Slavery 3
HIST 367  History, Fiction, and Film in Latin America 3
HIST 387  Topics in Global History (Mason Core) (p. 142) 3-6
HIST 426  The Russian Revolution 3
HIST 460  Modern Iran (Mason Core) (p. 142) 3
HIST 461  Arab-Israeli Conflict 3
HIST 462  Women in Islamic Society (Mason Core) (p. 142) 3
HIST 465  The Middle East in the 20th Century 3
JAPA 310  Japanese Culture in a Global World (Mason Core) (p. 142) 3
JAPA 340  Topics in Japanese Literature (Mason Core) (p. 142) 3
KORE 320  Korean Popular Culture in a Global World 3
MUSI 103  Musics of the World (Mason Core) (p. 142) 3
RELI 211  Religions of the West (Mason Core) (p. 142) 3
RELI 212  Religions of Asia (Mason Core) (p. 142) 3
RELI 240  Death and the Afterlife in World Religions 3
RELI 272  Islam 3
RELI 313  Hinduism (Mason Core) (p. 142) 3
RELI 314  Chinese Philosophies and Religious Traditions 3
RELI 315  Buddhism (Mason Core) (p. 142) 3
RELI 337  Mysticism: East and West 3
RELI 365  Muhammad: Life and Legacy 3
RELI 374  Islamic Thought (Mason Core) (p. 142) 3
RELI 375  Qur’an and Hadith 3
RELI 379  Islamic Law, Society, and Ethics 3
RELI 387  Islam, Democracy, and Human Rights 3
RELI 490  Comparative Study of Religions (Mason Core) (p. 142) 3
RUSS 353  Russian Civilization (Mason Core) (p. 142) 3
RUSS 354  Contemporary Post-Soviet Life (Mason Core) (p. 142) 3

1 Students who can document attendance at a native school in a non-western country for at least four years may request a waiver from this requirement through the CHSS Undergraduate Academic Affairs Office (http://chssundergrad.gmu.edu).

Honors

Honors in the Major

Eligibility

Mathematics majors who have maintained a GPA of at least 3.50 in mathematics courses and a GPA of 3.50 in all courses taken at George Mason University may apply to the departmental honors program upon completion of two MATH courses at the 300+ level (excluding MATH 400 History of Math (Topic Varies) (Mason Core) (p. 142)), at least one of which has MATH 290 Introduction to Advanced Mathematics as a prerequisite. Admission to the program will be monitored by the undergraduate committee.

Honors Requirements

To graduate with honors in mathematics, a student is required to maintain a minimum GPA of 3.50 in mathematics courses and successfully complete MATH 405 Honors Thesis in Mathematics I and MATH 406 RS: Honors Thesis in Mathematics II with an average GPA of at least 3.50 in these two courses.

Accelerated Master's

Mathematics, BA or BS/Mathematics, Accelerated MS

Overview

This degree program allows academically strong Mathematics, BA (p. 743) and Mathematics, BS (p. 748) students to obtain their bachelor’s and a Mathematics, MS (p. 754) by successfully completing 144 credits. Well-prepared students may be admitted to this program after the completion of 90 undergraduate credits. Upon completion and conferral of the bachelor's degree and with satisfactory graduate-level performance (3.00 GPA) in graduate courses, students are given advanced standing in the Mathematics, MS (p. 754) program and complete an additional 24 credits to receive the master’s degree.

For more detailed information, see AP.6 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies (p. 68). Application information for this accelerated master's program can be found on the Department of Mathematical Sciences website (http://math.gmu.edu).

Successful applicants will have an overall undergraduate GPA of at least 3.00. Additionally, they will have completed the following courses with a GPA of 3.00 or higher: MATH 315 Advanced Calculus I, MATH 321 Abstract Algebra, and MATH 322 Advanced Linear Algebra.

Accelerated Option Requirements

At the beginning of the student’s final undergraduate semester, students must submit a bachelor’s/accelerated master’s transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science’s Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master’s program in the semester immediately following conferral of the bachelor’s degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework.

 Reserve Graduate Credit

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the
undergraduate degree. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Mathematics, BA or BS/Curriculum and Instruction, Accelerated MEd, (Secondary Education Mathematics concentration)

Overview
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s program and obtain a BA (p. 743) or BS in Mathematics (p. 748) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education mathematics) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of Mathematical Sciences (p. 740) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EDCI 572</td>
<td>3</td>
<td>EDCI 672</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Alternative course options are available for students who begin their program in the spring. Students should contact the coordinator for the Bachelor’s/Accelerated Master’s Degree program in the College of Education and Human Development.

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Mathematics, BS

Banner Code: SC-BS-MATH

Academic Advising
4411 Exploratory Hall
Fairfax Campus
Phone: 703-993-1482
Email: danders1@gmu.edu
Website: math.gmu.edu/degree-programs.php

This program provides exciting opportunities for students interested in mathematics. Students are encouraged to select an optional concentration in Actuarial Mathematics (ACTM), Applied Mathematics (AMT), or Mathematical Statistics (MTHS). Students who do not select a concentration study traditional mathematics.

Teacher Licensure
Students who wish to become teachers and plan to seek teacher licensure should consider the following options:

- Curriculum and Instruction Undergraduate Certificate (p. 166)
- Mathematics, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Mathematics concentration) (p. 751)

Interested students should attend an information session early in their studies. For more information, visit the Graduate School of Education’s website (http://gse.gmu.edu).

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies
Students must fulfill all Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142).

MATH 290 Introduction to Advanced Mathematics meets the writing intensive requirement for this major.

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

Graduating seniors are required to have an exit interview.

Language Proficiency Recommendation
The department recommends proficiency in French, German, or Russian.

Course Recommendations and Policies
A maximum of 6 credits of grades below 2.00 in coursework designated MATH or STAT may be applied toward the major.
Students intending to enter graduate school in mathematics are strongly advised to take MATH 315 Advanced Calculus I and MATH 321 Abstract Algebra.

Students may not receive credit for both MATH 214 Elementary Differential Equations and MATH 216 Theory of Differential Equations; both MATH 213 Analytic Geometry and Calculus III and MATH 215 Analytic Geometry and Calculus III (Honors); both MATH 351 Probability and STAT 344 Probability and Statistics for Engineers and Scientists I; and both MATH 352 Statistics and STAT 354 Probability and Statistics for Engineers and Scientists II.

After receiving a grade of 'C' or better in one of the courses listed below on the left, students may not receive credit for the corresponding course on the right:

<table>
<thead>
<tr>
<th>Course</th>
<th>May Not Receive Credit for</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113 or MATH 123</td>
<td>MATH 105 or MATH 108</td>
</tr>
<tr>
<td>MATH 351 or STAT 344</td>
<td>MATH 110</td>
</tr>
<tr>
<td>MATH 441</td>
<td>MATH 111</td>
</tr>
<tr>
<td>MATH 125</td>
<td>MATH 112</td>
</tr>
</tbody>
</table>

### Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 748) tab for specific policies related to this program.

In addition to the mathematics core, science, and computational skills requirements, students may select an optional concentration in Actuarial Mathematics (ACTM), Applied Mathematics (AMT) or Mathematical Statistics (MTHS).

### Mathematics Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 215</td>
<td>Analytic Geometry and Calculus III (Honors)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 216</td>
<td>Theory of Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 290</td>
<td>Introduction to Advanced Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 322</td>
<td>Advanced Linear Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 23

1. Fulfills the writing intensive requirement.

### Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Select a one-year sequence of a laboratory science from the following courses:

**Biology Sequence:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4-9</td>
</tr>
</tbody>
</table>

Choose one from the following:

- BIOL 300 | BioDiversity |
- BIOL 308 | Foundations of Ecology and Evolution |
- BIOL 311 | General Genetics |

**Chemistry Sequence:**

- CHEM 211 & CHEM 213 | General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142) |
- CHEM 212 & CHEM 214 | General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142) |

**Geology Sequence:**

- GEOL 101 | Introductory Geology I (Mason Core) (p. 142) |
- GEOL 102 | Introductory Geology II (Mason Core) (p. 142) |

**Physics Sequence:**

- PHYS 160 & PHYS 161 | University Physics I (Mason Core) (p. 142) and University Physics I Laboratory (Mason Core) (p. 142) |
- PHYS 260 & PHYS 261 | University Physics II (Mason Core) (p. 142) and University Physics II Laboratory (Mason Core) (p. 142) |

Total Credits: 8-9

### Computational Skills

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 4

### BS without Concentration

In addition to the mathematics core, science, and computational skills requirements listed above, students who are not choosing a concentration must complete the following coursework:

**Traditional Mathematics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 315</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 316</td>
<td>Advanced Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 321</td>
<td>Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 431</td>
<td>Topology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 12 additional credits of MATH courses numbered above 300 (p. 1923) 1

**Additional Science**

Select additional science credits from one of the following three options:

- A second sequence from the choices under "Science" above
- 6 credits from more advanced courses in biology, chemistry, geology, or physics 2

Total Credits: 12

---

1. Fulfills the writing intensive requirement.

2. Additional credits from advanced courses in biology, chemistry, geology, or physics.
Concentration in Actuarial Mathematics (ACTM)

This concentration provides exciting opportunities for students interested in studying actuarial mathematics. Expertise in this field leads directly into a career as a practicing actuary with an insurance company, consulting firm, or in government employment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 351</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>MATH 352</td>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 551</td>
<td>Regression and Time Series</td>
<td>3</td>
</tr>
<tr>
<td>MATH 554</td>
<td>Financial Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 555</td>
<td>Actuarial Modeling I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 557</td>
<td>Financial Derivatives</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 203</td>
<td>Survey of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 310</td>
<td>Money and Banking</td>
<td>3</td>
</tr>
<tr>
<td>or FNAN 321</td>
<td>Financial Institutions</td>
<td>3</td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two from the following: 6

- MATH 441 Deterministic Operations Research
- MATH 442 Stochastic Operations Research
- MATH 446 Numerical Analysis I
- MATH 453 Advanced Mathematical Statistics

Total Credits 39

1 For mathematics majors, the Department of Economics has agreed to waive the ECON 104 Contemporary Macroeconomic Principles (Mason Core) (p. 142) prerequisite

Concentration in Applied Mathematics (AMT)

This concentration provides exciting opportunities for students interested in taking additional classes on applied mathematics. The concentration prepares numerical analysts able to deal with real world applications in science and engineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 315</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 39

1 Excluding MATH 400 History of Math (Topic Varies) (Mason Core) (p. 142)

Concentration in Mathematical Statistics (MTHS)

This concentration provides exciting opportunities for students interested in taking additional classes on statistics and data analysis. The concentration prepares data analysts able to deal with real world applications in science and engineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 315</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 351</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>MATH 352</td>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 453</td>
<td>Advanced Mathematical Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 551</td>
<td>Regression and Time Series</td>
<td>3</td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two from the following: 6

- STAT 455 Experimental Design
- STAT 463 Introduction to Exploratory Data Analysis
- STAT 474 Introduction to Survey Sampling

Additional Science Courses

Select additional science credits from one of the following options: 49

- A second sequence from the choices under "Science" above
- 6 credits from more advanced courses in biology, chemistry, geology, or physics
- The 4-credit option of PHYS 262 and PHYS 263

Total Credits 31-36
Mason Core and Elective Credits
In order to meet a minimum of 120 credits, this degree requires additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core requirements (outlined below), Requirements for Bachelor's Degrees (p. 89), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- Without concentration: 51-57 credits
- ACTM concentration: 45-46 credits
- AMT concentration: 51-57 credits
- MTHS concentration: 48-54 credits

Mason Core
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Exploration Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Integration Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

Honors in the Major
Eligibility
Mathematics majors who have maintained a GPA of at least 3.50 in mathematics courses and a GPA of 3.50 in all courses taken at George Mason University may apply to the departmental honors program upon completion of two MATH courses at the 300+ level (excluding MATH 400 History of Math (Topic Varies) (Mason Core) (p. 142)), at least one of which has MATH 290 Introduction to Advanced Mathematics as a prerequisite. Admission to the program will be monitored by the undergraduate committee.

Honors Requirements
To graduate with honors in mathematics, a student is required to maintain a minimum GPA of 3.50 in mathematics courses and successfully complete MATH 405 Honors Thesis in Mathematics I and MATH 406 RS: Honors Thesis in Mathematics II with an average GPA of at least 3.50 in these two courses.

Accelerated Master's
Mathematics, BA or BS/Curriculum and Instruction, Accelerated MEd, (Secondary Education Mathematics concentration)
Overview
Highly-qualified undergraduates may be admitted to the bachelor's/accelerated master's program and obtain a BA (p. 743) or BS in Mathematics (p. 748) and an MEd in Curriculum and Instruction (p. 170) (concentration in secondary education mathematics) in an accelerated time-frame after satisfactory completion of 149 credits. See AP 6.7 Bachelor's/Accelerated Master's Degree (p. 93) for policies related to this program.

This accelerated option is offered jointly by the Department of Mathematical Sciences (p. 740) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master's program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 572</td>
<td>3</td>
<td>EDCI 672</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Alternative course options are available for students who begin their program in the spring. Students should contact the coordinator for the Bachelor's/Accelerated Master's Degree program in the College of Education and Human Development.
While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CERHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Mathematics, BA or BS/Mathematics, Accelerated MS

Overview
This degree program allows academically strong Mathematics, BA (p. 743) and Mathematics, BS (p. 748) students to obtain their bachelor’s and a Mathematics, MS (p. 754) by successfully completing 144 credits. Well-prepared students may be admitted to this program after the completion of 90 undergraduate credits. Upon completion and conferral of the bachelor’s degree and with satisfactory graduate-level performance (3.00 GPA) in graduate courses, students are given advanced standing in the Mathematics, MS (p. 754) program and complete an additional 24 credits to receive the master’s degree.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies (p. 68). Application information for this accelerated master’s program can be found on the Department of Mathematical Sciences website (http://math.gmu.edu).

Successful applicants will have an overall undergraduate GPA of at least 3.00. Additionally, they will have completed the following courses with a GPA of 3.00 or higher: MATH 315 Advanced Calculus I, MATH 321 Abstract Algebra, and MATH 322 Advanced Linear Algebra.

Accelerated Option Requirements
At the beginning of the student’s final undergraduate semester, students must submit a bachelor’s/accelerated master’s transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science’s Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master’s program in the semester immediately following conferral of the bachelor’s degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework.

Reserve Graduate Credit
While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

BS (selected)/Statistical Science, Accelerated MS

Overview
Highly-qualified students in BS programs have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
No specific undergraduate BS degree is required. Students enrolled in any BS degree may apply to the accelerated Statistical Science, MS (p. 1141) program if such an accelerated Statistical Science, MS pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs; and if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td></td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 351</td>
<td>Probability</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements
Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. (Credit may not be received for both STAT 474 and STAT 574; nor for both STAT 460 and STAT 560.) The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition Form that is submitted to the Office of the University Registrar and Graduate
Recruitment and Enrollment Services. At the completion of MS requirements, a master’s degree is conferred.

**Mathematics Minor**

**Banner Code:** MATH

**Academic Advising**

4411 Exploratory Hall  
Fairfax Campus  
Phone: 703-993-1482  
Email: danders1@gmu.edu  
Website: math.gmu.edu/degree-programs.php

This minor allows academically strong students to supplement their major degree program with advanced knowledge of mathematics.

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Students must earn a minimum 2.00 GPA in courses applied to the minor.

**Requirements**

**Minor Requirements**

Total credits: 21

Students should refer to the Admissions & Policies (p. 753) tab for specific policies related to this program.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 215</td>
<td>Analytic Geometry and Calculus III (Honors)</td>
<td></td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 216</td>
<td>Theory of Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 290</td>
<td>Introduction to Advanced Mathematics ¹</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

¹ Students must earn a 2.00 or higher in MATH 290 Introduction to Advanced Mathematics.

**Mathematics Elective**

Select 3 credits from the following: ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 315</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits ¹

¹ Students must earn a 2.00 or higher.

**General Elective**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Select 3 credits from the following:</strong> ¹</td>
<td></td>
</tr>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 322</td>
<td>Advanced Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

¹ Excluding MATH 400 History of Math (Topic Varies) (Mason Core) (p. 142)

**Mathematics for School of Business Students Minor**

**Banner Code:** MBUS

**Academic Advising**

4411 Exploratory Hall  
Fairfax Campus  
Phone: 703-993-1482  
Email: danders1@gmu.edu  
Website: math.gmu.edu/degree-programs.php

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Students must complete all coursework with a minimum GPA of 2.00.

**Requirements**

**Minor Requirements**

Total credits: 20

Students should refer to the Admissions & Policies (p. 753) tab for specific policies related to this program.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 351</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>
Additional Mathematics Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one from the following:</td>
<td>3</td>
</tr>
<tr>
<td>MATH 352</td>
<td>Statistics</td>
<td></td>
</tr>
<tr>
<td>MATH 441</td>
<td>Deterministic Operations Research</td>
<td></td>
</tr>
<tr>
<td>MATH 554</td>
<td>Financial Mathematics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Mathematics, MS

Banner Code: SC-MS-MATH

Flavia Colonna, Graduate Coordinator
4215 Exploratory Hall
Fairfax Campus
Phone: 703-993-1465
Email: fcolonna@gmu.edu
Website: math.gmu.edu/graduate/ms-in-mathematics.php

This program provides exciting opportunities for students interested in studying advanced mathematics.

Assistantships

A limited number of merit-based teaching assistantships are available for students taking at least 6 graduate credits each semester. Other sources of support, such as research assistantships, are available as funding permits. Graduate students also have the opportunity to work in the Math Tutoring Center (http://math.gmu.edu/tutor-center.php) and the Math Learning Center (http://math.gmu.edu/math-learning-center.php).

Admissions & Policies

Admissions

University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants interested in this program must submit three letters of recommendation. GRE scores are not required.

Students must have taken an upper-division course in advanced calculus (equivalent to MATH 315 Advanced Calculus I), an abstract algebra course (equivalent to MATH 321 Abstract Algebra) and an upper-division course in linear algebra (equivalent to MATH 322 Advanced Linear Algebra). Students should have some computer knowledge.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

MATH 500 through MATH 614 cannot be used for credit, with the exception of MATH 555 Actuarial Modeling I and MATH 556 Actuarial Modeling II.

Requirements

Degree Requirements

Total credits: 30

Students should refer to the Admissions & Policies (p. 754) tab for specific policies related to this program.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>MATH 675</td>
<td>Linear Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Coursework Options</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select three from the following:</td>
<td>9</td>
</tr>
<tr>
<td>MATH 621</td>
<td>Algebra I</td>
<td></td>
</tr>
<tr>
<td>MATH 631</td>
<td>Topology I: Topology of Metric Spaces</td>
<td></td>
</tr>
<tr>
<td>MATH 677</td>
<td>Ordinary Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 685</td>
<td>Numerical Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additional Approved Coursework</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select four approved graduate courses, at least two of which are MATH courses.</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>24</td>
</tr>
</tbody>
</table>

1. All four courses must be approved by the student's advisor.
Courses not listed as MATH courses must be approved by the graduate committee.
Different rules apply if the student wishes to count graduate actuarial courses toward his or her degree (consult the graduate coordinator).

Research and Creative Component

A student may fulfill the research and creative component in one of three ways: Thesis Option (p. 754), Paper Presentation Option (p. 755), or Preliminary Exams for the PhD (p. 755).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one of the Research and Creative Component options outlined below</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Thesis Option

In preparation for this option, the student must form a committee comprising a chair and two other faculty members. The chair and at least one other member must be from the Department of Mathematical Sciences (p. 740), one member may be from a related field.

The student completes a thesis under the direction of the committee chair. The thesis work is typically completed while students are registered for 6 credits of MATH 799 MS Thesis. A thesis proposal and thesis are submitted in accordance with AP.6 Graduate Policies (p. 90). The student must give an oral defense of the thesis to the committee and the George Mason University community at large. Students are expected to respond to questions on the thesis and related material. The committee determines whether the defense is satisfactory.
Paper Presentation Option
In preparation for this option, the student must form a committee comprising a chair and two other faculty members. The chair and at least one other member must be from the Department of Mathematical Sciences (p. 740), one member may be from a related field. The student gives an oral presentation of a paper (or series of papers or book chapter) chosen in consultation with the chair of the committee and approved by the full committee. The chosen material must be distinct from work completed in fulfillment of course requirements. The oral presentation is given to the committee and the Mason community at large. Students are expected to respond to questions on the paper and related material. The committee determines whether the defense is satisfactory.

Preliminary Exams for the PhD
The research and creative component can also be fulfilled by passing three preliminary written examinations, as required for the Mathematics, PhD (p. 756) degree.

Dual Degree Options
Mathematics and Statistical Science Dual-Degree MS
This program allows students to earn an MS in Mathematics (p. 754) and an MS in Statistical Science (p. 1141) by completing 48 credits of coursework in both areas instead of the 60 that would be required if the degrees were sought independently.

Admission Requirements
Applicants must satisfy admission requirements for both the MS in Mathematics (p. 754) and the MS in Statistical Science (p. 1141) programs. A joint faculty committee from the Department of Mathematical Sciences (p. 740) and the Department of Statistics (p. 1136) make final admission decisions into the dual-degree program.

MS-MATH/STAT Dual-Degree Requirements
Total credits: 48

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 621</td>
<td>Algebra I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 675</td>
<td>Linear Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 677</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 678</td>
<td>Partial Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 685</td>
<td>Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 634</td>
<td>Case Studies in Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 652</td>
<td>Statistical Inference</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 12 elective credits in MATH courses numbered 615 or higher (p. 1923)</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Select any STAT courses numbered 540-775 (p. 2220)</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 21

Notes:
- Students in either the BS/Accelerated MS in Mathematics (p. 755) program or the BS(selected)/Accelerated MS in Statistical Science (p. 1144) program cannot get a reduction of 6 credits toward this dual degree. Students who want to proceed to a PhD degree will only be able to waive the number of credits specified in the associated PhD degree requirements, even though they will have 48 credits at the MS level.
- If a student decides not to complete the required 48 credits, a single MS degree will not be granted unless the student fulfills the requirements for either the MS in Mathematics (p. 754) or the MS in Statistical Science (p. 1141).
- Once a student receives one of the MS degrees from either department, the student will no longer be eligible for the reduction in credit (i.e., will need to complete 30 credits) if the student later decides to earn the other MS degree.

Accelerated Master's
Mathematics, BA or BS/Mathematics, Accelerated MS

Overview
This degree program allows academically strong Mathematics, BA (p. 743) and Mathematics, BS (p. 748) students to obtain their bachelor's and a Mathematics, MS (p. 754) by successfully completing 144 credits. Well-prepared students may be admitted to this program after the completion of 90 undergraduate credits. Upon completion and conferral of the bachelor's degree and with satisfactory graduate-level performance (3.00 GPA) in graduate courses, students are given advanced standing in the Mathematics, MS (p. 754) program and complete an additional 24 credits to receive the master's degree.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies (p. 68). Application information for this accelerated master's program can be found on the Department of Mathematical Sciences website (http://math.gmu.edu).
Successful applicants will have an overall undergraduate GPA of at least 3.00. Additionally, they will have completed the following courses with a GPA of 3.00 or higher: MATH 315 Advanced Calculus I, MATH 321 Abstract Algebra, and MATH 322 Advanced Linear Algebra.

Accelerated Option Requirements

At the beginning of the student's final undergraduate semester, students must submit a bachelor's/accelerated master's transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science's Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master's program in the semester immediately following conferral of the bachelor's degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework.

Reserve Graduate Credit

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree. See AP 1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

Mathematics, PhD

Banner Code: SC-PHD-MATH

Flavia Colonna, Graduate Coordinator

4215 Exploratory Hall
Fairfax Campus

Phone: 703-993-1465
Email: fcolonna@gmu.edu
Website: math.gmu.edu/graduate/phd-in-mathematics.php

The doctoral program provides exciting opportunities for students interested in studying advanced mathematics and conducting independent research.

This program begins with graduate coursework and advanced seminars and culminates in a dissertation consisting of original research in mathematics. The PhD is designed to train students as research mathematicians for careers in academia, government, and private industry.

Fellowships and Assistantships

The Department of Mathematical Sciences (p. 740) offers a limited number of merit-based teaching assistantships. Other sources of support, such as research fellowships and assistantships, are available as funding permits. Graduate students also have the opportunity to work in the Math Tutoring Center (http://math.gmu.edu/tutor-center.php) and the Math Learning Center (http://math.gmu.edu/math-learning-center.php).

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility

It is expected that all applicants have a recent bachelor's degree in mathematics or an equivalent amount of undergraduate mathematics preparation, with a GPA of at least 3.00 in their last 60 credits of study. Students without this background who have had an upper-division course in linear algebra (equivalent to MATH 322 Advanced Linear Algebra), an upper-division course in advanced calculus (equivalent to MATH 315 Advanced Calculus I), and an upper-division course in group theory (equivalent to MATH 321 Abstract Algebra) are encouraged to apply to the Mathematics, MS (p. 754). Such students may subsequently apply to the PhD when all background issues have been addressed. It is recommended that all applicants have some familiarity with mathematical software.

Application Requirements

To apply, prospective students should provide the completed George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), two copies of official transcripts from each college and graduate institution attended, three letters of recommendation, and a goals statement. GRE scores are recommended but not required.

TOEFL scores are required for all international applicants; find additional information in the Admission of International Students (p. 71) section of this catalog.

Policies

For policies governing all graduate programs, see AP 6 Graduate Policies (p. 90).

Reduction of Credits

For students entering the doctoral program with a master's degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the college's associate dean for student affairs. See AP 6.5.2 Reduction of Credits (p. 91) for more information.

Transfer of Credit

Graduate mathematics courses taken elsewhere without being applied to degree conferral may be counted toward the degree as transfer credit. See AP 6.5.3 Transfer of Credit (p. 92) for additional information.

Requirements

Degree Requirements

Total credits: 72
Students should refer to the Admissions & Policies (p. 756) tab for specific policies related to this program.

Core Courses
Students must earn a grade of 'B' or better in each core course that counts toward the core requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 675</td>
<td>Linear Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Select any three of the following:</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>MATH 621</td>
<td>Algebra I</td>
<td></td>
</tr>
<tr>
<td>MATH 631</td>
<td>Topology I: Topology of Metric Spaces</td>
<td></td>
</tr>
<tr>
<td>MATH 677</td>
<td>Ordinary Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 685</td>
<td>Numerical Analysis</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Preliminary Written Exam
Students are required to pass three preliminary written exams after completing the core courses, usually by the end of their second year. These exams are based on material presented in three of the five core courses (the student may choose which topics to exclude). These exams are offered twice a year and students may take each exam up to three times. A grade of “pass” on three preliminary written exams is sufficient to satisfy the creative component of the master’s degree in mathematics.

Dissertation Advisor and Examination Committee
After passing the preliminary written exam, the student chooses a dissertation advisor and a three person examination committee. In consultation with the advisor and committee, the student chooses a major and a minor area of study (the major and minor areas are presumed to be in two different branches of mathematics). The department also aims to deliver and instill a broad-based understanding of general physics and astronomy principles and practices to the wider university community through our Mason Core (p. 142) (general education) courses. Our student-centric curriculum and instruction use a mixture of traditional and current pedagogical techniques informed by on-going educational research. It is our goal to help students to develop versatility and creativity through repeated analytical practices and problem-solving training in their coursework and faculty-led research projects.

Qualifying Examinations
Students are required to take a qualifying exam after passing the preliminary written exam. The qualifying exam will have oral and written components. In consultation with the advisor and committee, the student chooses a major and a minor area of study (the major and minor areas are presumed to be in two different branches of mathematics). The qualifying exam covers the equivalent of approximately four courses of material from the major area and three courses from the minor area.

Dissertation Proposal and Advancement to Candidacy
Approximately one semester after passing the qualifying exam, each doctoral student prepares a written dissertation proposal while taking MATH 998 Doctoral Dissertation Proposal. The proposal must be approved by the dissertation committee, which consists of the three qualifying exam committee members, plus a fourth member from outside the Department of Mathematical Sciences (p. 740). After successfully completing this requirement, the student advances to doctoral candidacy.

Dissertation Research

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 12-24 credits from the following:</td>
<td></td>
<td>12-24</td>
</tr>
<tr>
<td>MATH 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>MATH 999</td>
<td>Doctoral Dissertation</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12-24</td>
</tr>
</tbody>
</table>

Doctoral Dissertation
After advancing to candidacy, the student will work on a doctoral dissertation while enrolled in MATH 999 Doctoral Dissertation. The dissertation is a written piece of original mathematics that demonstrates a doctoral candidate’s mastery of the subject matter. A student is expected to produce new and original research worthy of publication in a peer-reviewed journal. After the dissertation is completed, the committee will review the dissertation and examine the student in a public oral thesis defense.

Department of Physics and Astronomy

Phone: 703-993-1280
Email: physics@gmu.edu
Website: physics.gmu.edu

The department provides rigorous training for physics and astronomy students and prepares them to be successful, confident, and versatile in their ability to apply physics and astronomy principles within any chosen field. The department also aims to deliver and instill a broad-based understanding of general physics and astronomy principles and practices to the wider university community through our Mason Core (p. 142) (general education) courses. Our student-centric curriculum and instruction use a mixture of traditional and current pedagogical techniques informed by on-going educational research. It is our goal to help students to develop versatility and creativity through repeated analytical practices and problem-solving training in their coursework and faculty-led research projects.
Research in the department focuses on pushing the frontiers of physics and astronomy in a broad range of topics using theoretical, experimental, observational, and computational approaches. The department maintains many active collaborations with scientists across different disciplines within the university community and with other national and international institutions. The department believes strongly in incorporating both graduate as well as undergraduate students in our research programs. It is our goal to see students arriving with an enthusiasm and curiosity for physics and astronomy and leaving as true scientists ready to conduct their own scientific investigations.

Undergraduate Programs
The department offers the Physics, BS (p. 764) and the Astronomy, BS (p. 762). Also available are the Physics Minor (p. 768), the Astronomy Minor (p. 763), and the Renewable Energy Interdisciplinary Minor (p. 771).

Undergraduate Research Opportunities
The department offers many opportunities for undergraduate students to become involved with research. Students should consult with faculty working on research topics of interest to them, based on their exploration of the department’s website (http://physics.gmu.edu).

Bachelor’s/Accelerated Master’s Degree
Information regarding this program can be found in the Physics, BS/ Accelerated Masters section of this catalog.

Graduate Programs
This department offers the Applied and Engineering Physics, MS (p. 759). The department also supports the Energy and Sustainability concentration in the Interdisciplinary Studies, MAIS (p. 542). Additionally, the department offers a Physics, PhD (p. 769). These graduate programs are strongly supported by the extensive research activities of the faculty, including many collaborations with scientists and engineers at regional government laboratories.

Requirements & Policies

Requirements

Writing Intensive Requirement
George Mason requires all undergraduate students to complete at least one course designated as "writing intensive" in their majors at the 300-level or above. Students majoring in physics fulfill this requirement by successfully completing PHYS 407 Senior Laboratory in Modern Physics (Mason Core) (p. 142) or ASTR 402 RS: Methods of Observational Astronomy (Mason Core) (p. 142) depending upon their concentration (see program requirements (https://catalog.gmu.edu/colleges-schools/science/physics-astronomy/physics-bs)). Astronomy majors fulfill the requirement by completing ASTR 402 RS: Methods of Observational Astronomy (Mason Core) (p. 142).

Teacher Licensure
Students who wish to become teachers should consult the College of Education and Human Development (p. 161) section of this catalog and attend an information session early in their undergraduate career. For more information, visit the Graduate School of Education’s website (https://gse.gmu.edu).

Physics for Non-majors
Recommended for biology, geology, and premedical students, and mathematics students who seek a BA degree:
PHYS 243 College Physics I (Mason Core) (p. 142), PHYS 244 College Physics I Lab (Mason Core) (p. 142), PHYS 245 College Physics II (Mason Core) (p. 142), and PHYS 246 College Physics II Lab (Mason Core) (p. 142)

Recommended for non-science majors:
PHYS 101, PHYS 102, PHYS 103 Physics and Everyday Phenomena I (Mason Core) (p. 142), and PHYS 104 Physics and Everyday Phenomena II (Mason Core) (p. 142)

The following courses constitute a calculus-based sequence in general physics to be taken by physics and engineering majors, chemistry, computer science, and mathematics students who are pursuing a BS degree:
PHYS 160 University Physics I (Mason Core) (p. 142), PHYS 161 University Physics I Laboratory (Mason Core) (p. 142), PHYS 260 University Physics II (Mason Core) (p. 142), PHYS 261 University Physics II Laboratory (Mason Core) (p. 142) or PHYS 265 Intermediate University Physics Laboratory, PHYS 262 University Physics III (Mason Core) (p. 142), and PHYS 263 University Physics III Laboratory (Mason Core) (p. 142)

Students may receive credit for only one of the following three sequences:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 103 &amp; PHYS 104</td>
<td>Physics and Everyday Phenomena I (Mason Core) (p. 142) and Physics and Everyday Phenomena II (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>
PHYS 243 & PHYS 244 & PHYS 245 & PHYS 246
College Physics I (Mason Core) (p. 142) and College Physics I Lab (Mason Core) (p. 142) and College Physics II (Mason Core) (p. 142) and College Physics II Lab (Mason Core) (p. 142)

PHYS 160 & PHYS 161 & PHYS 260 & PHYS 262 & PHYS 263
University Physics I (Mason Core) (p. 142) and University Physics I Laboratory (Mason Core) (p. 142) and University Physics II (Mason Core) (p. 142) and University Physics III (Mason Core) (p. 142) and University Physics III Laboratory (Mason Core) (p. 142)

Programs

- Applied and Engineering Physics, MS
- Astronomy Minor
- Astronomy, BS
- Physics Minor
- Physics, BS
- Physics, PhD
- Renewable Energy Interdisciplinary Minor

Applied and Engineering Physics, MS

Banner Code: SC-MS-PHAE

Graduate Advisor

203 Planetary Hall
Fairfax Campus
Phone: 703-993-5356
Email: gadvphys@gmu.edu
Website: physics.gmu.edu

This degree contains elements of traditional physics programs and the application of physics to a diversity of critical societal problems. The program is divided into three areas of emphasis; see Requirements (p. 759) for details.

Many courses are offered during late afternoon or evening hours to allow students with full-time employment to easily attend. Students employed at area high-technology organizations may take up to 6 credits (out of 30) for work done on the job under the guidance of a faculty member. This employment-related research may be conducted under an optional 3-credit research project or an optional 6-credit master's thesis. Master's students who are not employed full time may apply for financial aid or a limited number of research assistantships.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Individuals holding a baccalaureate degree in physics or a related field from a regionally accredited institution and who have earned a GPA of 3.00 (out of 4.00) in their last 60 credits are invited to apply for admission. If the baccalaureate degree is in a field other than physics, applicants should have taken several courses beyond the introductory physics courses, such as junior-level classical mechanics, electricity and magnetism, or electronics. Applicants may be required to make up one or two deficiencies, based on a graduate physics advisor’s assessment, and be provisionally admitted into the program. Three letters of recommendation must be submitted, preferably from former professors. The general GRE and the GRE subject test in physics are recommended for applicants who received their baccalaureate degrees within the past five years.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Requirements

Degree Requirements

Total credits: 30

Students should refer to the Admissions & Policies (p. 759) tab for specific policies related to this program. Select one emphasis and complete all the requirements therein.

Plan of Study

Before the end of their first semester, each student must submit to the graduate coordinator's office a plan of study that has been approved by their academic advisor. The selected courses must be cohesive and lead to comprehensive knowledge in one area; it cannot be a set of disjointed courses. Any deviations from this plan must be approved by the student's academic advisor. A final, signed version of the plan must be submitted to the graduate coordinator at the start of the semester in which the student plans to graduate.

Select one emphasis and complete all the requirements therein.

Standard Emphasis

This emphasis is intended for students who may wish to pursue further graduate study in physics or astrophysics or pursue graduate study following the Standard Physics concentration of the Physics PhD.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 684</td>
<td>Quantum Mechanics I</td>
<td>12</td>
</tr>
<tr>
<td>PHYS 685</td>
<td>Classical Electrodynamics I</td>
<td></td>
</tr>
</tbody>
</table>
**Applied and Engineering Physics, MS**

**PHYS 705** Classical Mechanics

**PHYS 711** Statistical Mechanics

**Emphasis Electives**

Select 9 credits of graduate-level courses from the following:

1. **ASTR** (p. 1283)
2. **PHYS** (p. 2055)

**General Electives**

Select 9 credits of graduate-level science courses approved by an academic advisor.

Total Credits: 30

1. These must be regular courses and not directed reading, research, or thesis credits.
2. Students may take PHYS 796 Directed Reading and Research and up to 6 credits of PHYS 798 Research Project as general electives. PHYS 798 Research Project is conducted under the supervision of a faculty research advisor and may be based on work done as an intern. Up to 6 credits of PHYS 799 Master’s Thesis may be taken as general electives by students pursuing the thesis option and may also be based on work done as an intern.

**Engineering Physics Emphasis**

This emphasis is intended for students who may wish to pursue employment in an engineering-related field or pursue graduate study following the Engineering Physics concentration of the Physics PhD.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Group One</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 510</td>
<td>Computational Physics I</td>
<td></td>
</tr>
<tr>
<td><strong>Group Two</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 502</td>
<td>Introduction to Quantum Mechanics and Atomic Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 684</td>
<td>Quantum Mechanics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 690</td>
<td>Engineering Thermodynamics</td>
<td></td>
</tr>
<tr>
<td><strong>Group Three</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 513</td>
<td>Applied Electromagnetic Theory</td>
<td></td>
</tr>
<tr>
<td>PHYS 620</td>
<td>Continuum Mechanics</td>
<td></td>
</tr>
<tr>
<td>PHYS 685</td>
<td>Classical Electrodynamics I</td>
<td></td>
</tr>
<tr>
<td><strong>Group Four</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 533</td>
<td>Modern Instrumentation</td>
<td></td>
</tr>
<tr>
<td>PHYS 613</td>
<td>Computational Physics II</td>
<td></td>
</tr>
</tbody>
</table>

**Emphasis Electives**

Select 9 credits of graduate-level courses from the following:

1. **BENG** (p. 1304)
2. **CEIE** (p. 1383)
3. **ECE** (p. 1611)
4. **MATH** (p. 1923)
5. **ME** (p. 1940)
6. **PHYS** (p. 2055)

**General Electives**

Select 9 credits of graduate-level science and engineering courses approved by an academic advisor.

Total Credits: 30

1. These must be regular courses and not directed reading, research, or thesis credits.
2. Students may take PHYS 796 Directed Reading and Research and up to 6 credits of PHYS 798 Research Project as general electives. PHYS 798 Research Project is conducted under the supervision of a faculty research advisor and may be based on work done as an intern. Up to 6 credits of PHYS 799 Master’s Thesis may be taken as general electives by students pursuing the thesis option and may also be based on work done as an intern.

**Applied Physics Emphasis**

This emphasis is intended for students who may wish to pursue employment in an applied physics or engineering related field.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Group One</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 510</td>
<td>Computational Physics I</td>
<td></td>
</tr>
<tr>
<td><strong>Group Two</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 533</td>
<td>Modern Instrumentation</td>
<td></td>
</tr>
<tr>
<td><strong>Group Three</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 502</td>
<td>Introduction to Quantum Mechanics and Atomic Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 684</td>
<td>Quantum Mechanics I</td>
<td></td>
</tr>
<tr>
<td><strong>Group Four</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 513</td>
<td>Applied Electromagnetic Theory</td>
<td></td>
</tr>
<tr>
<td>PHYS 685</td>
<td>Classical Electrodynamics I</td>
<td></td>
</tr>
</tbody>
</table>

**Emphasis Electives**

Select 9 credits of graduate-level courses from the following:

1. **BINF** (p. 1319)
2. **CHEM** (p. 1367)
3. **CLIM** (p. 1407)
4. **CSI** (p. 1436)
5. **MATH** (p. 1923)
6. **STAT** (p. 2220)
7. **PHYS** (p. 2055)

**General Electives**

Select 9 credits of graduate-level science and engineering courses approved by an academic advisor.

Total Credits: 30

1. These must be regular courses and not directed reading, research, or thesis credits.
2. Students may take PHYS 796 Directed Reading and Research and up to 6 credits of PHYS 798 Research Project as general electives. PHYS 798 Research Project is conducted under the supervision of a faculty research advisor and may be based on work done as an intern. Up to 6 credits of PHYS 799 Master’s Thesis may be taken as general electives by students pursuing the thesis option and may also be based on work done as an intern.
**Thesis Option**
In preparation for this option, the student must form a committee comprising a chair and two other faculty members.

The student completes a thesis under the direction of the committee chair. The thesis work is typically completed while students are registered for 6 credits of PHYS 799 Master’s Thesis. A thesis proposal and thesis are submitted in accordance with AP6 Graduate Policies (p. 90). The student must give an oral defense of the thesis to the committee and the George Mason community at large. Students are expected to respond to questions on the thesis and related material. The committee determines whether the defense is satisfactory.

**Accelerated Master’s**

**Physics, BS/Applied and Engineering Physics, Accelerated MS**

**Overview**
This program allows academically strong undergraduates with a demonstrable commitment to research to obtain the Physics, BS (p. 764) and Applied and Engineering Physics, MS (p. 759) degrees by successfully completing 144 credits. Upon completion, students are well-prepared for entry into a professional school or a PhD program in physics or a related discipline.

Admitted students take selected graduate courses during their senior year and are able to use up to 6 graduate credits in partial satisfaction of requirements for the undergraduate degree. Upon completion and conferral of the bachelor’s degree and with satisfactory performance (grade of ‘B’ or better) in each of the graduate courses, students are given advanced standing in the master’s program and complete an additional 24 credits to receive the master’s degree.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog.

Successful applicants will have completed at least 90 credits toward their undergraduate degree and 45 credits in physics major coursework. The physics major GPA must be at least 3.50. One or more recommendation letters from one or more research supervisors are also required. Interested applicants should submit a letter to the undergraduate physics coordinator requesting admission along with the aforementioned recommendation letter(s). Contact the physics undergraduate or graduate coordinator for further details.

**Accelerated Option Requirements**
At the beginning of the student’s final undergraduate semester, students must submit a bachelor’s/accelerated master’s transition form (http://registrar.gmu.edu/forms) to the College of Science’s Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master’s program in the semester immediately following conferral of the bachelor’s degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework.

**Reserve Graduate Credit**
While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

**Mechanical Engineering, BS/Applied and Engineering Physics, Accelerated MS**

**Overview**
This program allows academically strong undergraduates with a demonstrable commitment to research to obtain the Mechanical Engineering, BS (https://catalog.gmu.edu/colleges-schools/engineering/mechanical/mechanical-engineering-bs) and Applied and Engineering Physics, MS (p. 759) degrees by successfully completing 145 credits. Upon completion, students are well-prepared for entering into the professional workforce, or a PhD program in physics or a related engineering discipline.

Admitted students take selected graduate courses during their senior year and are able to use up to 6 graduate credits in partial satisfaction of requirements for the undergraduate degree. Upon completion and conferral of the bachelor’s degree and with satisfactory performance (grade of ‘B’ or better) in each of the graduate courses, students are given advanced standing in the master’s program and complete an additional 24 credits to receive the master’s degree.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog.

Successful applicants majoring in Mechanical Engineering will have completed at least 90 credits toward their undergraduate degree with an overall GPA of at least 3.00, and the following courses with a GPA of 3.00 or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>ME 212</td>
<td>Solid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 231</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 313</td>
<td>Material Science</td>
<td>3</td>
</tr>
<tr>
<td>ME 322</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 323</td>
<td>Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 351</td>
<td>Analytical Methods in Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

One or more recommendation letters from one or more research supervisors are also required. Interested applicants majoring in Mechanical Engineering, BS (https://catalog.gmu.edu/colleges-schools/engineering/mechanical/mechanical-engineering-bs) should submit a letter to the undergraduate Mechanical Engineering coordinator and the Physics Graduate Coordinator, respectively, requesting admission.
along with the aforementioned recommendation letter(s). Contact the Mechanical Engineering undergraduate and the Physics graduate coordinator for further details.

**Accelerated Option Requirements**

At the beginning of the student's final undergraduate semester, students must submit a bachelor's/accelerated master's transition form (http://registrar.gmu.edu/forms) to the College of Science's Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master's program in the semester immediately following conferral of the bachelor's degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework.

**Reserve Graduate Credit**

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree.

**Astronomy, BS**

Banner Code: SC-BS-ASTR

**Undergraduate Astronomy Advisor**

203 Planetary Hall
Fairfax Campus

Phone: 703-993-5356
Email: uadvastr@gmu.edu
Website: physics.gmu.edu

The program prepares students for graduate school, a career in research or teaching, or employment in industry, business, or education fields where analytical skills and a scientific background are advantageous. Students who are considering a double major should talk to the undergraduate coordinator.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in Undergraduate Admissions Policies (p. 65).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

Students must fulfill all Requirements for Bachelor’s Degrees (p. 89) including the Mason Core (p. 142).

At least 18 credits used to fulfill an Astronomy, BS cannot be used to fulfill another major or minor. Some course substitutions are allowed for double majors, subject to approval from the Department of Physics and Astronomy (p. 757).

By taking ASTR 402 RS: Methods of Observational Astronomy (Mason Core) (p. 142), astronomy majors satisfy the university's writing-intensive requirement.

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 762) tab for specific policies related to this program.

Students must complete a total of 55 credits in physics and astronomy and 14 credits in mathematics with a minimum GPA of 2.00.

**Required Astronomy Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 210</td>
<td>Introduction to Astrophysics</td>
<td>3</td>
</tr>
<tr>
<td>ASTR 328</td>
<td>Stars</td>
<td>3</td>
</tr>
<tr>
<td>ASTR 402</td>
<td>RS: Methods of Observational Astronomy (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 10

1. Fulfills the writing intensive requirement.

**Additional Astronomy Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 403</td>
<td>Planetary Science</td>
<td>6</td>
</tr>
<tr>
<td>ASTR 404</td>
<td>Galaxies and Cosmology</td>
<td></td>
</tr>
<tr>
<td>ASTR 480</td>
<td>The Interstellar Medium</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

**Required Physics Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
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<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
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<tr>
<td>PHYS 251</td>
<td>Introduction to Computer Techniques in Physics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 301</td>
<td>Analytical Methods of Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 303</td>
<td>Classical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 305</td>
<td>Electromagnetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 308</td>
<td>Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 416</td>
<td>Undergraduate Physics Review</td>
<td>1</td>
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</table>

Total Credits 24
Required Math Courses

<table>
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<th>Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>14</td>
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</tbody>
</table>

Astronomy and Physics Courses

Select 15 credits from the following (at least 12 credits must be from upper-level courses):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 301</td>
<td>Astrobiology</td>
<td></td>
</tr>
<tr>
<td>ASTR 408</td>
<td>Senior Research</td>
<td></td>
</tr>
<tr>
<td>PHYS 306</td>
<td>Wave Motion and Electromagnetic Radiation</td>
<td></td>
</tr>
<tr>
<td>PHYS 307</td>
<td>Thermal Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 402</td>
<td>Introduction to Quantum Mechanics and Atomic Physics</td>
<td></td>
</tr>
<tr>
<td>ASTR 403</td>
<td>Planetary Science 1</td>
<td></td>
</tr>
<tr>
<td>or ASTR 404</td>
<td>Galaxies and Cosmology</td>
<td></td>
</tr>
<tr>
<td>or PHYS 428</td>
<td>Relativity</td>
<td></td>
</tr>
<tr>
<td>or ASTR 480</td>
<td>The Interstellar Medium</td>
<td></td>
</tr>
<tr>
<td>Other ASTR course with the permission of the department (p. 1283)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other PHYS course with the permission of the department (p. 2055)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires an additional 51 credits, which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), and electives. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Oral Communication (p. 142)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Information Technology and Computing (p. 143)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploration Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Global Understanding (p. 146) | 3 |
Literature (p. 147) | 3 |
Natural Science (p. 148) | 7 |
Social and Behavioral Sciences (p. 150) | 3 |
Western Civilization/World History (p. 151) | 3 |

Integration Requirements

Written Communications (ENGH 302) (p. 142) | 3 |
Writing-Intensive (p. 151) | 3 |
Synthesis/Capstone (p. 153) | 3 |
Total Credits | 40 |

2. Minimum 3 credits required.

Honors

Honors in the Major

Eligibility

Astronomy majors who have completed the prerequisites for ASTR 405 Honors Thesis in Astronomy I, have a GPA of at least 3.50 in ASTR and PHYS courses taken at Mason, and have a GPA of at least 3.50 in all courses taken at Mason may apply for admission to the astronomy honors program. Please visit the department for details.

Honors Requirements

To graduate with honors in astronomy, a student must maintain a GPA of at least 3.50 in their ASTR/PHYS courses. Students accepted into the honors program must complete ASTR 405 Honors Thesis in Astronomy I and ASTR 406 Honors Thesis in Astronomy II with a GPA of at least 3.50 and a grade of 'A' or better in ASTR 405 Honors Thesis in Astronomy I and ASTR 406 Honors Thesis in Astronomy II. Students in ASTR 405 Honors Thesis in Astronomy I/ASTR 406 Honors Thesis in Astronomy II will complete a research project and write a thesis working under the supervision of a faculty member. At the end of ASTR 406 Honors Thesis in Astronomy II, the student will write a substantial thesis paper and make a presentation of results to their honors committee.

Astronomy Minor

Banner Code: ASTR

Undergraduate Astronomy Advisor

Planetary Hall, Room 203
Fairfax Campus

Phone: 703-993-5356
Email: uadvastr@gmu.edu
Website: physics.gmu.edu

The minor expands upon a student’s understanding of both astronomy beyond the introductory level and of fundamental principles and further develops analytical skills. The minor is an attractive option for students majoring in science, technology, engineering, or mathematics (STEM).
Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 19 - 22

Students should refer to the Admissions & Policies (p. 764) tab for specific policies related to this program.

The minor requires completion of all coursework with a minimum GPA of 2.00.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one of the following sequences: 13-14</td>
<td></td>
</tr>
</tbody>
</table>

**Sequence One:**

| PHYS 243 & PHYS 245 | College Physics I (Mason Core) (p. 142) and College Physics II (Mason Core) (p. 142) |
| or PHYS 160 & PHYS 260 | University Physics I (Mason Core) (p. 142) and University Physics II (Mason Core) (p. 142) |
| ASTR 111 | Introductory Astronomy: The Solar System (Mason Core) (p. 142) |
| ASTR 112 | Introductory Astronomy Lab: The Solar System (Mason Core) (p. 142) |
| ASTR 113 | Introductory Astronomy: Stars, Galaxies, and the Universe (Mason Core) (p. 142) |
| ASTR 114 | Introductory Astronomy Lab: Stars, Galaxies, and the Universe (Mason Core) (p. 142) |

**Sequence Two:**

| PHYS 160 | University Physics I (Mason Core) (p. 142) |
| PHYS 260 | University Physics II (Mason Core) (p. 142) |
| PHYS 262 | University Physics III (Mason Core) (p. 142) |
| or PHYS 308 | Modern Physics |
| ASTR 124 | Introduction to Observational Astronomy |
| ASTR 210 | Introduction to Astrophysics |

**Total Credits: 13-14**

Astronomy Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 6-8 credits from the following: 6-8</td>
<td></td>
</tr>
<tr>
<td>ASTR 115</td>
<td>Finding New Worlds (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ASTR 301</td>
<td>Astrobiology</td>
<td></td>
</tr>
<tr>
<td>ASTR 302</td>
<td>Foundations of Cosmological Thought (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ASTR 328</td>
<td>Stars</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6-8

Physics, BS

Banner Code: SC-BSPHYS

Undergraduate Physics Advisor

203 Planetary Hall
Fairfax Campus

Phone: 703-993-5356
Email: uadvphys@gmu.edu
Website: physics.gmu.edu

The Physics, BS program prepares students for graduate school and careers in education, business, or industry.

Teacher Licensure

Students who wish to become teachers and plan to seek teacher licensure should consider the following options:

- Curriculum and Instruction Undergraduate Certificate (p. 166)
- Physics, BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Physics concentration) (p. 767)

Interested students should attend an information session early in their undergraduate career. For more information, visit the Graduate School of Education's website (http://gse.gmu.edu).

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies

Students must fulfill all Requirements for Bachelor's Degrees (p. 89) including the Mason Core (p. 142).

The intensive writing requirement is fulfilled by taking PHYS 407 Senior Laboratory in Modern Physics (Mason Core) (p. 142) or ASTR 402 RS: Methods of Observational Astronomy (Mason Core) (p. 142), which are also capstone courses for the major.

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87).
Double Majors

Students considering a double major with physics should discuss this option with the respective undergraduate coordinators.

Note that at least 18 credits used to fulfill the Physics, BS cannot be used to fulfill another major or minor. Some course substitutions are allowed for double majors, but these should be discussed with a physics advisor in advance.

Alternative Introductory Sequence

Normally, students who intend to major in physics should take the physics introductory sequence:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Students who decide to major in physics after completing PHYS 243 College Physics I (Mason Core) (p. 142), PHYS 244 College Physics I Lab (Mason Core) (p. 142), PHYS 245 College Physics II (Mason Core) (p. 142) and PHYS 246 College Physics II Lab (Mason Core) (p. 142) are welcome, but are required to obtain written permission from the Department of Physics and Astronomy (p. 757) before a change of major can be approved.

Requirements

Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 764) tab for specific policies related to this program.

Students must complete a total of 75 credits in the major (69 credits if completing a second major), including at least 11 credits in mathematics, with a minimum GPA of 2.00.

Students must complete the coursework described below and either select a concentration or select the "BS without Concentration" option:

Physics Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 251</td>
<td>Introduction to Computer Techniques in Physics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 301</td>
<td>Analytical Methods of Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 303</td>
<td>Classical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 305</td>
<td>Electromagnetic Theory 1</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 307</td>
<td>Thermal Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 308</td>
<td>Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 402</td>
<td>Introduction to Quantum Mechanics and Atomic Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 416</td>
<td>Undergraduate Physics Review</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 30

Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 11

BS without Concentration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 311</td>
<td>Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 312</td>
<td>Waves and Optics</td>
<td>4</td>
</tr>
</tbody>
</table>

Research, Internship, or Independent Study

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 326</td>
<td>Problems in Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 405</td>
<td>Honors Thesis in Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 406</td>
<td>Honors Thesis in Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 408</td>
<td>Senior Research</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 409</td>
<td>Physics Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Capstone

Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 407</td>
<td>Senior Laboratory in Modern Physics (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Physics Theory

All students complete the following 9 credits:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 306</td>
<td>Wave Motion and Electromagnetic Radiation</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 403</td>
<td>Quantum Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 428</td>
<td>Relativity</td>
<td>3</td>
</tr>
</tbody>
</table>

Only students who are not completing a second major must select 6 additional credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 210</td>
<td>Introduction to Astrophysics</td>
<td>3</td>
</tr>
<tr>
<td>ASTR 328</td>
<td>Stars</td>
<td>3</td>
</tr>
<tr>
<td>ASTR 403</td>
<td>Planetary Science</td>
<td>3</td>
</tr>
<tr>
<td>ASTR 404</td>
<td>Galaxies and Cosmology</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 370</td>
<td>Molecular Biophysics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 412</td>
<td>Solid State Physics and Applications</td>
<td>3</td>
</tr>
</tbody>
</table>
Physics, BS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 440</td>
<td>Nuclear and Particle Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 465</td>
<td>Planetary Atmospheres and Ionospheres</td>
<td></td>
</tr>
<tr>
<td>PHYS 475</td>
<td>Atmospheric Physics</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>28-34</strong></td>
</tr>
</tbody>
</table>

1 Fulfills the writing intensive requirement.

### Applied and Engineering Physics Concentration (PHAE)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Mathematics/Computational Physics</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>PHYS 410</td>
<td>Computational Physics Capstone (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Intermediate Laboratory</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>PHYS 311</td>
<td>Instrumentation</td>
<td></td>
</tr>
<tr>
<td>PHYS 312</td>
<td>Waves and Optics</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Physics Theory</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>PHYS 306</td>
<td>Wave Motion and Electromagnetic Radiation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select 6 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>PHYS 370</td>
<td>Molecular Biophysics</td>
<td></td>
</tr>
<tr>
<td>PHYS 403</td>
<td>Quantum Mechanics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 412</td>
<td>Solid State Physics and Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Capstone</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>PHYS 407</td>
<td>Senior Laboratory in Modern Physics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Practical Work</strong></td>
<td><strong>6-12</strong></td>
</tr>
<tr>
<td></td>
<td>Students who are not completing a second major must complete the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Students who are completing a second major must complete the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select 6 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>PHYS 405</td>
<td>Honors Thesis in Physics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 406</td>
<td>Honors Thesis in Physics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 408</td>
<td>Senior Research</td>
<td></td>
</tr>
<tr>
<td>PHYS 409</td>
<td>Physics Internship</td>
<td></td>
</tr>
<tr>
<td>BENG 320</td>
<td>Bioengineering Signals and Systems</td>
<td></td>
</tr>
<tr>
<td>Or other approved 300 or 400-level Volgenau School of Engineering courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>28-34</strong></td>
</tr>
</tbody>
</table>

1 Fulfills the writing intensive requirement.

### Astrophysics Concentration (PHAP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Mathematics/Computational Physics</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>PHYS 410</td>
<td>Computational Physics Capstone (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Intermediate Laboratory</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>PHYS 311</td>
<td>Instrumentation</td>
<td></td>
</tr>
<tr>
<td>PHYS 312</td>
<td>Waves and Optics</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Research, Internship, or Independent Study</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td></td>
<td>Select 3 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>ASTR 405</td>
<td>Honors Thesis in Astronomy I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>28-34</strong></td>
</tr>
</tbody>
</table>

1 Fulfills the writing intensive requirement.

### Computational Physics Concentration (PHCP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Mathematics/Computational Physics</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td>PHYS 410</td>
<td>Computational Physics Capstone (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Intermediate Laboratory</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>PHYS 311</td>
<td>Instrumentation</td>
<td></td>
</tr>
</tbody>
</table>

1 Fulfills the writing intensive requirement.
Research, Internship, or Independent Study
Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 326</td>
<td>Problems in Physics II</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 405</td>
<td>Honors Thesis in Physics I</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 406</td>
<td>Honors Thesis in Physics II</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 408</td>
<td>Senior Research</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 409</td>
<td>Physics Internship</td>
<td>1</td>
</tr>
</tbody>
</table>

Capstone
Select 4 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 402</td>
<td>RS: Methods of Observational Astronomy (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 407</td>
<td>Senior Laboratory in Modern Physics (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Physics and Astronomy Theory
3-9 credits
Students who are not completing a second major must select 9 credits of the following. Students who are completing a second major must select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 210</td>
<td>Introduction to Astrophysics</td>
<td>1</td>
</tr>
<tr>
<td>ASTR 328</td>
<td>Stars</td>
<td>1</td>
</tr>
<tr>
<td>ASTR 403</td>
<td>Planetary Science</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 306</td>
<td>Wave Motion and Electromagnetic Radiation</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 412</td>
<td>Solid State Physics and Applications</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 28-34

1 Fulfills the writing intensive requirement.

Honors

Honors in the Major
Physics majors who have maintained an overall GPA of at least 3.50 in physics courses and a GPA of 3.50 in all courses taken at George Mason University may apply to the physics honors program when they complete the first semester of their junior year.

To graduate with honors in physics, a student is required to maintain a minimum GPA of 3.00 in physics courses and successfully complete PHYS 405 Honors Thesis in Physics I and PHYS 406 Honors Thesis in Physics II with a GPA of at least 3.50 and a grade of at least ‘A’ in PHYS 406 Honors Thesis in Physics II. Please visit the department for details.

Accelerated Master’s

Physics, BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Physics concentration)

Overview
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s program and obtain both a BS in Physics (p. 764) and an MEd in Curriculum and Instruction (p. 170), Secondary Education Physics Concentration in an accelerated timeframe after satisfactory completion of 149 credits. See AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93) for policies related to this program.

This accelerated option is offered jointly by the department of Physics and Astronomy (p. 757) and the Graduate School of Education (p. 162).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (p. 68). For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (ENGH 302) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Senior

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

**Physics Minor**

**Banner Code:** PHYS

**Undergraduate Physics Advisor**

203 Planetary Hall
Fairfax Campus

Phone: 703-993-5356
Email: physics.gmu.edu

The Physics Minor will expand your understanding of physics beyond the introductory level and help to deepen your understanding of fundamental principles and further develop your analytical skills. The minor will be an attractive option for students majoring in science, technology, engineering, or mathematics (STEM).

**Admissions & Policies**

**Policies**

Eight credits of coursework must be unique to the minor with a minimum GPA of 2.00. For policies governing all minors, see AP.6.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 17

Students should refer to the Admissions & Policies (p. 768) tab for specific policies related to this program.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 308</td>
<td>Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>
Additional Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two from the following:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>PHYS 303</td>
<td>Classical Mechanics</td>
<td></td>
</tr>
<tr>
<td>PHYS 305</td>
<td>Electromagnetic Theory</td>
<td></td>
</tr>
<tr>
<td>PHYS 306</td>
<td>Wave Motion and Electromagnetic Radiation</td>
<td></td>
</tr>
<tr>
<td>PHYS 307</td>
<td>Thermal Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 402</td>
<td>Introduction to Quantum Mechanics and Atomic Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 428</td>
<td>Relativity</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Physics, PhD

Banner Code: SC-PHD-PHYS

Graduate Advisor
203 Planetary Hall
Fairfax Campus
Phone: 703-993-5356
Email: gadvphys@gmu.edu
Website: physics.gmu.edu

The degree program contains a Standard Concentration for traditional physics programs that focus on Astrophysics, Condensed Matter Theory, Dynamical Systems/Biological Physics, High Energy Physics, Materials Physics, Space Sciences, and an Engineering Physics Concentration that combines the disciplines of physics, mathematics, and engineering. The doctoral students accepted into each concentration of the physics PhD program take a required set of core courses for the given concentration (see Requirements tab).

By working with the dissertation committee, a student in the Standard Concentration may choose to specialize in an emphasis area such as Astrophysics, Atomic Molecular and Optical Physics, Condensed Matter Experiment, Condensed Matter Theory, Dynamical Systems/Biological Physics, High Energy Physics, Materials Physics, Space Sciences, or others according to his or her particular interests. A student in the Engineering Physics Concentration may choose to specialize in Applied Mechanics (Fluids and Solids), or other applied and engineering physics areas. By the end of their first year, all students should pair with a faculty advisor who will guide them toward doctoral candidacy.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Those holding a baccalaureate degree in physics, astronomy, or engineering from a regionally accredited institution, who earned a GPA of 3.00 (out of 4.00) or higher in their last 60 credits, and have received acceptable scores on the GRE-GEN are invited to apply for admission. Three letters of recommendation must be submitted, preferably from former professors. The GRE subject test in physics is highly recommended for all interested applicants in the standard concentration who received their baccalaureate degrees within the past five years. The GRE requirement can be waived if the student has received a master's degree from a regionally accredited U.S. institution.

A degree-seeking graduate applicant with a baccalaureate degree who has not met all admission requirements may be offered provisional admission if sufficient evidence is presented to suggest that the applicant has the ability to pursue graduate work. For more details concerning admission requirements to George Mason University please refer to Graduate Admission Policies (p. 68).

Policies

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

Reduction of Credits

For students entering the doctoral program with a master's degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the college's associate dean. See AP6.5.2 Reduction of Credits (p. 91) for more information.

Requirements

Degree Requirements

Total credits: 72

Students should refer to the Admissions & Policies (p. 769) tab for specific policies related to this program.

Students must first choose one concentration, then continue with the additional sections:

Standard Concentration (STND)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Courses 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 684</td>
<td>Quantum Mechanics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 685</td>
<td>Classical Electrodynamics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 705</td>
<td>Classical Mechanics</td>
<td></td>
</tr>
<tr>
<td>PHYS 711</td>
<td>Statistical Mechanics</td>
<td></td>
</tr>
<tr>
<td>Specialty Science Courses 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select two of the following courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASTR 680</td>
<td>Physics of Interstellar Media</td>
<td></td>
</tr>
<tr>
<td>ASTR 730</td>
<td>Stellar Astrophysics</td>
<td></td>
</tr>
<tr>
<td>PHYS 784</td>
<td>Quantum Mechanics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 785</td>
<td>Classical Electrodynamics II</td>
<td></td>
</tr>
<tr>
<td>Seminar Course 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 703</td>
<td>Seminar in Physics (must be taken three times)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 21
Engineering Physics Concentration (ENGP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 510</td>
<td>Computational Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 613</td>
<td>Computational Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 620</td>
<td>Continuum Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 690</td>
<td>Engineering Thermodynamics</td>
<td>4</td>
</tr>
</tbody>
</table>

Specialty Science Courses 1
Select two of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 640</td>
<td>Finite Element Analysis of Solids and Fluids</td>
</tr>
<tr>
<td>PHYS 694</td>
<td>Applied Mechanics of Solids</td>
</tr>
<tr>
<td>PHYS 695</td>
<td>Applied Fluid Mechanics</td>
</tr>
<tr>
<td>PHYS 684</td>
<td>Quantum Mechanics I</td>
</tr>
<tr>
<td>PHYS 685</td>
<td>Classical Electrodynamics I</td>
</tr>
</tbody>
</table>

Seminar Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 703</td>
<td>Seminar in Physics (at least one credit required)</td>
<td>3</td>
</tr>
</tbody>
</table>

And any other graduate-level PHYS/CEIE/MECH/MATH/CSI seminar

Total Credits 21

1 These electives must be approved by the student’s advisor or the graduate coordinator.

General Science Electives

Students in both the Standard Concentration and Engineering Physics Concentration must complete 27 credits of approved general electives and preliminary research credits: 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 796</td>
<td>Directed Reading and Research</td>
<td>3</td>
</tr>
<tr>
<td>ASTR 798</td>
<td>Research Project</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 796</td>
<td>Directed Reading and Research</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 798</td>
<td>Research Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Any graduate-level course chosen from PHYS/ASTR courses 3

Total Credits 27

2 PHYS 796 Directed Reading and Research/ASTR 796 Directed Reading and Research may be repeated as needed.

3 General elective courses may be chosen from PHYS/ASTR courses, and/or other related disciplines as approved by the student’s advisor or dissertation committee.

Qualifying Examination

All students must successfully pass the four individual sections required for each concentration of a qualifying examination. For the Standard Concentration, the four topics on the qualifying exam are covered in the four core courses (PHYS 684 Quantum Mechanics I, PHYS 685 Classical Electrodynamics I, PHYS 705 Classical Mechanics, and PHYS 711 Statistical Mechanics). For the Engineering Physics Concentration, the four topics on the qualifying exam are covered in the four core courses (PHYS 690 Engineering Thermodynamics or PHYS 711 Statistical Mechanics, PHYS 620 Continuum Mechanics or PHYS 705 Classical Mechanics, PHYS 510 Computational Physics I and PHYS 613 Computational Physics II) and in one of the specialty science courses (PHYS 694 Applied Mechanics of Solids or PHYS 695 Applied Fluid Mechanics).

All four sections of the qualifying exam will be offered twice a year, typically in the week before the start of the fall and spring semesters. A student can choose to take a particular section or a combination of sections at one sitting. Grades of “pass” or “unsatisfactory” will be given individually for each of the four sections of the exam. If a student receives a grade of “unsatisfactory” in a given section of the exam, he/she is allowed to re-take that section in the next cycle, but a student must satisfactorily pass all sections of the exam by the end of the third year from the date of enrollment in the PhD program. Students entering the program with equivalent courses taken at another institution can satisfy a core course requirement by taking the associated qualifying exam without taking the course.

At the beginning of each academic year, the program director will appoint members to the qualifying examination committee. This committee is responsible for creating, administering, and grading the qualifying exams offered that year. Additional information and previous qualifying exams can be found on the departmental web page.

Dissertation Committee and Program of Study

Upon successful completion of the qualifying examinations, a dissertation committee should be formed by the student as soon as possible. The chair of this committee must be a graduate faculty member from the Department of Physics and Astronomy. The committee must include at least two additional members from the graduate faculty, one of whom must be from outside the Department of Physics and Astronomy. The composition of the committee must be approved by the program director. The dissertation committee is responsible for directing the student in their chosen field of research. The student should work closely with their committee to select specialty courses and electives that form a cohesive program of study. The student’s program of study must be approved by the dean before advancement to candidacy.

Advancement to Candidacy

Before a student may be advanced to doctoral candidacy, he/she needs to complete all required coursework, pass the qualifying examination, have the program of study and dissertation proposal approved by the dean, and be recommended by the dissertation committee. Advancement to doctoral candidacy implies that the student has demonstrated adequate breadth and depth of knowledge in the field of study and is capable of conducting research on the boundaries of knowledge.

Dissertation Research

Note: No more than 24 combined credits from PHYS 998 Doctoral Dissertation Proposal/ASTR 998 Doctoral Dissertation Proposal and PHYS 999 Doctoral Dissertation/ASTR 999 Doctoral Dissertation may be applied toward satisfying the doctoral degree requirements, with no more than 21 credits of PHYS 998 Doctoral Dissertation Proposal/ASTR 998 Doctoral Dissertation Proposal.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 999</td>
<td>Doctoral Dissertation</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 999</td>
<td>Doctoral Dissertation</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 24
Doctoral Dissertation
After advancing to doctoral candidacy, the student works with their dissertation committee to develop their preliminary research into a doctoral dissertation. The dissertation research should represent a significant contribution to its scientific field and should be deemed publishable in a refereed scientific journal. The dissertation must be defended in a public forum before the dissertation committee and other interested faculty.

Renewable Energy Interdisciplinary Minor
Banner Code: RNRG
Undergraduate Physics Advisor
203 Planetary Hall
Fairfax Campus
Phone: 703-993-5356
Email: uadvphys@gmu.edu
Website: physics.gmu.edu

This college-wide interdisciplinary minor is designed for students considering a career in the field of renewable energy, or as preparation for graduate work in a wide range of academic disciplines.

Renewable energy, as normally understood, includes a variety of methods of energy generation, such as solar, wind, hydro, tidal, and geothermal, as well as energy storage methods and energy conservation. Jobs related to renewable energy lie in a wide range of areas including engineering, business, marketing, finance, installation, software, legal affairs, and research. Projections suggest that employment opportunities in the renewable energy field will increase dramatically in the near future. The Renewable Energy Interdisciplinary Minor is therefore ideally suited for students with majors in engineering, business, policy, and science.

Admissions & Policies
Policies
Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements
Minor Requirements
Total credits: 17-20

Students should refer to the Admissions & Policies (p. 771) tab for specific policies related to this program.

Core Courses
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 331</td>
<td>Fundamentals of Renewable Energy</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 385</td>
<td>Materials Science with Applications to Renewable Energy</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 10

Physics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 245</td>
<td>College Physics II (Mason Core) (p. 142)</td>
<td>1-3</td>
</tr>
<tr>
<td>PHYS 262</td>
<td>University Physics III (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 266</td>
<td>Introduction to Thermodynamics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 1-3

Other Science or Engineering Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 3-4 credits from the following in consultation with minor advisor:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 332</td>
<td>Solar Cells</td>
<td></td>
</tr>
<tr>
<td>CHEM 212 &amp; CHEM 214</td>
<td>General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GEOL 321</td>
<td>Geology of Energy Resources</td>
<td></td>
</tr>
<tr>
<td>CHEM 271</td>
<td>General Chemistry for Engineers Lecture (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHEM 272</td>
<td>General Chemistry for Engineers Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECE 301</td>
<td>Digital Electronics</td>
<td></td>
</tr>
<tr>
<td>Other appropriate science or engineering course chosen in consultation with the minor advisor.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3-4

Internship

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one from the following options:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHYS 409</td>
<td>Physics Internship</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

1 Or a 3 credit internship in another natural science or engineering field. The course must be focused on renewable energy and chosen in consultation with the minor advisor.

Forensic Science Program

Phone: 703-993-5071
Email: fscience@gmu.edu
Website: forensicscience.gmu.edu

Administration

• Mary Ellen O'Toole, Director

George Mason University is home to one of the premier forensic science programs in the country. Forensic science is the application of scientific principles and techniques to the legal process. It is a blanket term for many fields and disciples, all related to the application of science to the
law. The mission of the Forensic Science Program (FSP) is to provide outstanding scholarship to graduate and undergraduate students, seeking a career in forensic science, with both an in-depth theoretical as well as operational foundation.

As the field of forensic science is growing rapidly and new technology is being developed on a regular basis, our FSP specializes in providing the most current, accepted practices and methodologies in the application of forensic science techniques. The program also provides specialized learning experiences through select internship possibilities and research opportunities.

Our two-pronged theoretical-operational programs, prepare both undergraduate and graduate students with the skills and scientific knowledge to work in entry level and advanced positions. Depending on their degree and areas of interest, students are prepared to work in a wide range of forensic settings: from the laboratory to a homicide scene to the battle field as an intelligence analyst/officer, tasked with using biometrics to identify the next lone wolf or terrorist cell.

The FSP is an interdisciplinary academic program with its own dedicated teaching faculty who all have operational experience in forensic science. The program is administered by the Forensic Science Program Director, and is governed by the Forensic Science Program Committee.

Faculty

Program Faculty

Director
O’Toole

Associate Professors
Rancourt, Rule

Assistant Professors
Burmeister, DiZinno, Falsetti, Knight

Adjunct Faculty
Buhrow, Christensen, Clay, Cruciotti, Eckenrode, Hutchinson, Mullins, O’Neal, Palmer, Smith, Strohmeyer, Rodway, Weldon

Programs

- Forensic Science Minor
- Forensic Science, BS
- Forensic Science, MS
- Forensics Graduate Certificate

Forensic Science, BS

Banner Code: SC-BS-FRSC

Academic Advising

3400 Exploratory Hall
Fairfax Campus

Phone: 703-993-5071
Email: fscience@gmu.edu
Website: cos.gmu.edu/forensic-science/

The Bachelor of Science in Forensic Science is a general forensic science degree that covers various fields within forensic science including field and laboratory applications. These topics include areas such as, crime scene investigation, forensic DNA, forensic chemistry, trace evidence, firearms examination, questioned document, fingerprints, arson, and drug analysis.

This degree is intended to provide students with a well-rounded, hands-on forensic science education in order to prepare students for entrance into a graduate-level educational program, and/or entry-level professional careers in public and private forensic laboratories, federal, state, or local government/law enforcement, defense, homeland security and intelligence agencies.

Unique features of this program include innovative curriculum that offers hands-on training with crime scene techniques and crime laboratory methodologies, an outdoor forensic excavation research and training facility, and courses taught by professional and distinguished faculty from various forensic agencies and laboratories.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies

Students must fulfill all Requirements for Bachelor's Degrees (p. 89), including the Mason Core (p. 142).

FRSC 302 Forensic Trace Analysis and FRSC 304 Forensic Chemistry will satisfy the writing intensive requirement.

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 772) tab for specific policies related to this program.

Students majoring in forensic science must complete their coursework with a minimum GPA of 2.30. No more than three courses with a grade of ‘D’ (1.00) may be applied to the major.

Students are advised to be aware of prerequisites that may be required for each course in the curriculum.

Forensic Science Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 200</td>
<td>Survey of Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 201</td>
<td>Introduction to Criminalistics</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>FRSC 302</td>
<td>Forensic Trace Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 303</td>
<td>Forensic Evidence and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 304</td>
<td>Forensic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 401</td>
<td>Crime Scene Investigations</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 405</td>
<td>Independent Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>or FRSC 406</td>
<td>Forensic Internship</td>
<td></td>
</tr>
<tr>
<td>FRSC 460</td>
<td>Forensic DNA Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 461</td>
<td>Forensic DNA Analysis Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>FRSC 499</td>
<td>Comprehensive Examination</td>
<td>0</td>
</tr>
<tr>
<td>CRIM 100</td>
<td>Introduction to Criminal Justice (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 28

1 FRSC 302 Forensic Trace Analysis and FRSC 304 Forensic Chemistry will satisfy this major's writing-intensive requirement.

### Natural Science Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>3-4</td>
</tr>
<tr>
<td>BIOL 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 430</td>
<td>Advanced Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 431</td>
<td>General Chemistry I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 214</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Organic Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4-6</td>
</tr>
<tr>
<td>or MATH 123 &amp; MATH 124</td>
<td>Calculus with Algebra/Trigonometry, Part A and Calculus with Algebra/Trigonometry, Part B (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 244</td>
<td>College Physics I Lab (Mason Core)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 245</td>
<td>College Physics II (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 246</td>
<td>College Physics II Lab (Mason Core)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 45-48

### Additional Courses

Select 13 credits from the following: 13

- FRSC 415 Selected Topics in Forensic Science
- BINF 401 Bioinformatics and Computational Biology I
- BINF 402 Bioinformatics and Computational Biology II
- BIOL 305 Biology of Microorganisms
- BIOL 306 Biology of Microorganisms Laboratory
- BIOL 404 Medical Microbiology
- BIOL 405 Microbial Genetics
- BIOL 431 Advanced Human Anatomy and Physiology II
- BIOL 452 Immunology
- BIOL 453 Immunology Laboratory
- BIOL 482 Introduction to Molecular Genetics
- BIOL 484 Cell Signaling and Disease
- CHEM 321 Quantitative Chemical Analysis
- CHEM 331 Physical Chemistry I
- CHEM 332 Physical Chemistry II
- CHEM 336 Physical Chemistry Lab I
- CHEM 337 Physical Chemistry Lab II
- CHEM 422 Instrumental Methods of Chemical Analysis
- CHEM 423 Instrumental Methods of Chemical Analysis Laboratory
- CHEM 427 Aquatic Environmental Chemistry
- CHEM 441 Properties and Bonding of Inorganic Compounds
- CHEM 446 Bioinorganic Chemistry
- CHEM 463 General Biochemistry I
- CHEM 464 General Biochemistry II
- CHEM 465 Biochemistry Lab

Mason Core and Electives

In order to meet a minimum of 120 credits, this degree requires an additional 31-34 credits, which may be applied toward any remaining Mason Core (p. 142) requirements, Requirements for Bachelor's Degrees (p. 87), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

### Mason Core

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Written Communication</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 123</td>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 124</td>
<td>Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 125</td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Exploration Requirements

- Arts (p. 144) 3
- Global Understanding (p. 146) 3
- Literature (p. 147) 3
- Natural Science (p. 148) 7
- Social and Behavioral Sciences (p. 150) 3
Western Civilization/World History (p. 151) 3
Integration Requirements
Written Communications (ENGH 302) (p. 142) 3
Writing-Intensive (p. 151) 1 3
Synthesis/Capstone (p. 153) 2 3
Total Credits 40

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2 Minimum 3 credits required.

**Accelerated Master's**

**Forensic Science, BS/Forensic Science, Accelerated MS**

**Overview**

Highly qualified Mason undergraduate forensic science majors may apply to the accelerated master's degree with a concentration in either crime scene investigation, forensic biology analysis, forensic chemistry analysis, or forensic/biometric identity analysis. Students who have completed between 75 and 100 credits toward the bachelor's degree are invited to apply. Students are eligible to enter this program and enroll in graduate courses after successfully completing 90 undergraduate credits, inclusive of prerequisites, toward the Forensic (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-bs) Science, BS (https://catalog.gmu.edu/colleges-schools/science/forensic-program/forensic-science-bs) degree. This flexibility makes it possible for students to complete graduate coursework during their final year. If accepted, students will be able to earn the Forensic (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-bs) Science, BS (https://catalog.gmu.edu/colleges-schools/science/forensic-program/forensic-science-bs) and the Forensic Science, MS (https://catalog.gmu.edu/colleges-schools/science/forensic-program/forensic-science-ms) after satisfactory completion of 150 credits.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

**Concentration Declaration**

Students must declare their intended concentration upon application. In the event that a student wishes to change their concentration, students may request to change their concentration by submitting a letter to the Forensic Science Program Director detailing the request and providing justification. These requests and possible substitutions/waivers will be considered on a case-by-case basis and only when the appropriate admissions requirements are met.

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admissions Policies (https://catalog.gmu.edu/admissions/graduate-policies) section of this catalog.

Application requirements for this accelerated master's program include one letter of recommendation from a Forensic Science Program faculty member or advisor. Additionally, a detailed goal statement is required to include why you are interested in the MS in forensic science degree, career goals and professional aspirations, and proposed area of interest of your final Research Project. The GRE and resume are not required for admission into this program.

Successful applicants will have completed each of the following courses or equivalent with a GPA of 3.00 or higher:

- FRSC 200 Survey of Forensic Science
- FRSC 201 Introduction to Criminalistics
- FRSC 302 Forensic Trace Analysis
- FRSC 303 Forensic Evidence and Ethics
- BIOL 213 Cell Structure and Function (Mason Core) (p. 142)
- CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 213 General Chemistry Laboratory I (Mason Core) (p. 142)
- CHEM 212 General Chemistry II (Mason Core) (p. 142) and CHEM 214 General Chemistry Laboratory II (Mason Core) (p. 142)

While undergraduate students, accelerated master's students complete six credits of graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of 3.00 in each course. Students must meet with an advisor to approve eligible graduate coursework. Once admitted to the accelerated master's program, students must maintain a minimum cumulative GPA of 3.0 in all coursework. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

**Forensic Biology Analysis Concentration Applicants:**

In order to obtain a career as a DNA Analyst, the student should have undergraduate coursework in Statistics, Molecular Biology, Genetics, and Biochemistry.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See the Graduate Course Enrollment by Undergraduates (https://catalog.gmu.edu/policies/academic/registration-attendance/#text) section of this catalog for more information.

**Premium Tuition**

Students enrolled in this professional MS program are charged at a differential (premium) tuition rate. Therefore, any courses or secondary programs that they may enroll in are subject to the differential tuition rate. The Forensics Graduate Certificate (https://catalog.gmu.edu/colleges-schools/science/forensic-program/forensics-graduate-
Certificate) has the same premium tuition rate, making it the ideal program for concurrent enrollment (if desired).

**Criminal Background Check**
The successful passing of a Virginia Department of Forensic Sciences background check is required prior to gaining access to FRSC 540 Advanced Forensic Chemistry, FRSC 541 Forensic Chemistry Laboratory, FRSC 560 Advanced Forensic DNA Sciences, and FRSC 561 Forensic DNA Laboratory.

**Course Notes**
- FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory
- FRSC 540 Advanced Forensic Chemistry and FRSC 541 Forensic Chemistry Laboratory.

Students shall have completed undergraduate coursework in molecular and/or cell biology, as well as genetics, or students must obtain permission of the instructor prior to taking FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory.

**Forensic Science Minor**

**Banner Code:** FRSC

**Academic Advising**
3400 Exploratory Hall
Fairfax Campus
Phone: 703-993-5071
Email: fscience@gmu.edu
Website: cos.gmu.edu/forensic-science/

This minor addresses the growing national and regional interest in forensic science by introducing students to the technical, scientific, and legal aspects of the field. The minor provides an attractive option for students with majors in the natural sciences, criminology, psychology, or computer science, and the curriculum structure makes it particularly suitable for students with majors in biology and chemistry.

**Admissions & Policies**

**Policies**
At least 8 credits must be applied only to this minor and may not be used to fulfill requirements of the student’s major, concentration, or another minor or undergraduate certificate.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

### Minor Requirements

Total credits: 20-21

Students should refer to the Admissions & Policies (p. 775) tab for specific policies related to this program.

Students must complete at least 6 credits in their minor at George Mason University and achieve a minimum GPA of 2.00 in courses applied to the minor.

Please pay attention to the prerequisites for each course in the curriculum below.

**Foundation Science Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>BIOL 305 &amp; BIOL 306</td>
<td>Biology of Microorganisms and Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td></td>
</tr>
<tr>
<td>CHEM 211 &amp; CHEM 213</td>
<td>General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHEM 212 &amp; CHEM 214</td>
<td>General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 160 &amp; PHYS 161</td>
<td>University Physics I (Mason Core) (p. 142) and University Physics I Laboratory (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 243 &amp; PHYS 244</td>
<td>College Physics I (Mason Core) (p. 142) and College Physics I Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 245 &amp; PHYS 246</td>
<td>College Physics II (Mason Core) (p. 142) and College Physics II Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 260 &amp; PHYS 261</td>
<td>University Physics II (Mason Core) (p. 142) and University Physics II Laboratory (Mason Core) (p. 142)</td>
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</table>

**Total Credits**

| 8 |

**Forensic Science Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 200</td>
<td>Survey of Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 201</td>
<td>Introduction to Criminalistics</td>
<td>3</td>
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</table>

**Total Credits**

| 6 |

**Forensic Science Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 302</td>
<td>Forensic Trace Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>FRSC 303</td>
<td>Forensic Evidence and Ethics</td>
<td></td>
</tr>
<tr>
<td>FRSC 304</td>
<td>Forensic Chemistry</td>
<td></td>
</tr>
<tr>
<td>FRSC 460</td>
<td>Forensic DNA Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>3</td>
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</tbody>
</table>

### Supporting Courses

#### Code  Title  Credits
Select one course from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FRSC 302</td>
<td>Forensic Trace Analysis 1</td>
<td></td>
</tr>
<tr>
<td>or FRSC 303</td>
<td>Forensic Evidence and Ethics</td>
<td></td>
</tr>
<tr>
<td>or FRSC 304</td>
<td>Forensic Chemistry</td>
<td></td>
</tr>
<tr>
<td>or FRSC 460</td>
<td>Forensic DNA Analysis</td>
<td></td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
<td></td>
</tr>
<tr>
<td>GEOL 306</td>
<td>Soil Science</td>
<td></td>
</tr>
<tr>
<td>CRIM 400</td>
<td>Applied Criminal Psychology</td>
<td></td>
</tr>
<tr>
<td>CRIM 410</td>
<td>Criminal Investigations</td>
<td></td>
</tr>
<tr>
<td>PSYC 380</td>
<td>Introduction to Forensic Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 441</td>
<td>Criminal Behavior: Psychological and Neurological Aspects</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>3-4</td>
</tr>
</tbody>
</table>

1 If a FRSC course is chosen, select a different course than the one chosen to fulfill the Forensic Science Electives section.

# Forensic Science, MS

**Banner Code:** SC-MS-FRSC

## Academic Advising

3400 Exploratory Hall  
Fairfax Campus

Phone: 703-993-5071  
Email: fscience@gmu.edu  
Website: cos.gmu.edu/forensic-science/

The Forensic Science Program offers a master's degree in Forensic Science with four concentrations to best suit the student’s future career goals: Crime Scene Investigation, Forensic Biology Analysis, Forensic Chemistry Analysis, and Forensic/Biometric Identity Analysis. This graduate degree will prepare students for a rewarding career in federal, state and local laboratories, investigative or intelligence agencies, private companies, or allow professionals currently working in the field an opportunity to improve their education and optimize career advancement.

Located in Northern Virginia within the Washington DC Metro area, our students are afforded the opportunity to study in close proximity to a plethora of federal, state and local crime laboratories, investigative and intelligence agencies. These facilities provide unique access to forensic science experts and offer students competitive internships and job opportunities.

Available concentrations include:

- Crime Scene Investigation
- Forensic Biology Analysis
- Forensic Chemistry Analysis
- Forensic/Biometric Identity Analysis

# Admissions & Policies

## Admissions

### Application Requirements

University-wide admissions policies can be found in Graduate Admissions Policies (p. 68).

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

In addition to fulfilling Mason’s admission requirements for graduate study, applicants must provide:

- Three letters of recommendation from academic references or references in the industry or government who are familiar with the applicant’s academic and/or professional accomplishments.
- Resume
- Detailed goal statement to include why you are interested in coming into Mason’s Forensic Science Master’s program, career goals, and professional aspirations, and proposed area of interest for your final research project.
- Two copies of official transcripts from each institution of higher education attended.
- A Virginia Domicile Classification Form.

TOEFL scores are required of all international applicants who do not hold at least a bachelor’s degree from a regionally-accredited institution within the US (some exceptions apply). The TOEFL score has to at least be a total of 88, with a minimum of 20 in each section.

The GRE is not required for admission into this program. Additional requirements for each specific concentration are listed below.

## Concentration-Specific Requirements

### Forensic Biology Analysis and Forensic Chemistry Analysis Concentrations

A bachelor’s degree in a forensic or natural science.

### Forensic/Biometric Identity Analysis Concentration

A bachelor of science or bachelor of arts degree in a forensic or natural science, computer science, computer electronic or electrical engineering, information systems or information technology (or its equivalent coursework in a relevant field).

### Crime Scene Investigation Concentration

A bachelor of science or bachelor of arts degree in a related field.

## Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

## Premium Tuition

Students enrolled in this professional MS program are charged at a differential (premium) tuition rate. Therefore, any courses or secondary programs that they may enroll in are subject to the differential tuition rate. The Forensics Graduate Certificate (p. 780) has the same premium...
tuition rate, making it the ideal program for concurrent enrollment (if desired).

**Concentration Declaration**

Students must declare their intended concentration upon application. In the event that a student wishes to change their concentration, students may request to change their concentration by submitting a letter to the Forensic Science Program Director detailing the request and providing justification. These requests and possible substitutions/waivers will be considered on a case-by-case basis and only when the appropriate admissions requirements are met.

**Criminal Background Check**

The successful passing of a Virginia Department of Forensic Sciences (http://www.dfs.virginia.gov) background check is required prior to gaining access to FRSC 540 Advanced Forensic Chemistry, FRSC 541 Forensic Chemistry Laboratory, FRSC 560 Advanced Forensic DNA Sciences, and FRSC 561 Forensic DNA Laboratory.

**Course Notes**

**FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory**

Students shall have completed undergraduate coursework in molecular and/or cell biology, as well as genetics, or students must obtain permission of the instructor prior to taking FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory.

**FRSC 540 Advanced Forensic Chemistry and FRSC 541 Forensic Chemistry Laboratory**

Students shall have completed undergraduate coursework in general chemistry including polarity and acid/base chemistry. Students shall also have completed Organic Chemistry and be able to identify functional groups and other chemistry structures that make up a molecule. Exposure to instrumental techniques such as gas chromatography, mass spectrometry and infrared spectroscopy is recommended or permission of instructor.

**Requirements**

**Degree Requirements**

Total credits: 36

Students should refer to the Admissions & Policies (p. 776) tab for specific policies related to this program.

Select one concentration from the following:

**Concentration in Crime Scene Investigation (CSIN)**

This concentration educates students for a career as a crime scene investigator.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 500</td>
<td>Introduction to Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 510</td>
<td>Basic Crime Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 511</td>
<td>Advanced Crime Scene Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 530</td>
<td>Law and Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 570</td>
<td>Trace and Physical Evidence Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

**FRSC 600** | Forensics Seminar                          | 1       |

**FRSC 610** | Forensic Research Project                  | 4       |

**Electives**

Select 16 credits from the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 512</td>
<td>Physical Evidence Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 513</td>
<td>Forensic Photography</td>
<td></td>
</tr>
<tr>
<td>FRSC 514</td>
<td>Survey of Forensic Chemistry, Biology, and DNA Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 515</td>
<td>Selected Topics in Forensic Science</td>
<td></td>
</tr>
<tr>
<td>FRSC 516</td>
<td>Forensic Drone Photography</td>
<td></td>
</tr>
<tr>
<td>FRSC 517</td>
<td>Questioned Document Examination</td>
<td></td>
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<tr>
<td>FRSC 520</td>
<td>Toxicology</td>
<td></td>
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<tr>
<td>FRSC 550</td>
<td>Issues in Forensic Anthropology</td>
<td></td>
</tr>
<tr>
<td>FRSC 580</td>
<td>Facial Reconstruction</td>
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<tr>
<td>FRSC 590</td>
<td>Medicolegal Death Investigation and Pathology</td>
<td>4</td>
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<tr>
<td>FRSC 600</td>
<td>Forensics Seminar</td>
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<tr>
<td>FRSC 620</td>
<td>Face and Biometric Pattern Analysis</td>
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<tr>
<td>FRSC 630</td>
<td>Fingerprint Identification</td>
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<tr>
<td>FRSC 640</td>
<td>Legal, Privacy and Ethical Issues in Identity Analysis</td>
<td>3</td>
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<tr>
<td>FRSC 650</td>
<td>Identity Analysis Applications</td>
<td></td>
</tr>
<tr>
<td>FRSC 690</td>
<td>Capstone - Moot Court Expert Testimony</td>
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</tr>
<tr>
<td>FRSC 790</td>
<td>Internship in Forensic Science (Credits: 1-6)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**

36

**Concentration in Forensic Biology Analysis (FRSB)**

This concentration educates students for a career as a forensic biology laboratory analyst.

The successful passing of a Virginia Department of Forensic Sciences background check is required prior to gaining access to FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory. In order to obtain a career as a DNA Analyst, the student should have undergraduate coursework in Statistics, Molecular Biology, Genetics, and Biochemistry.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 500</td>
<td>Introduction to Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 510</td>
<td>Basic Crime Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 512</td>
<td>Physical Evidence Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>or FRSC 630</td>
<td>Fingerprint Identification</td>
<td></td>
</tr>
<tr>
<td>FRSC 514</td>
<td>Survey of Forensic Chemistry, Biology, and DNA Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 530</td>
<td>Law and Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 560</td>
<td>Advanced Forensic DNA Sciences</td>
<td>4</td>
</tr>
<tr>
<td>&amp; FRSC 561</td>
<td>and Forensic DNA Laboratory</td>
<td></td>
</tr>
<tr>
<td>FRSC 570</td>
<td>Trace and Physical Evidence Concepts</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 600</td>
<td>Forensics Seminar</td>
<td>1</td>
</tr>
<tr>
<td>FRSC 610</td>
<td>Forensic Research Project</td>
<td>4</td>
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</table>

**Electives**

Select 9 credits from the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 511</td>
<td>Advanced Crime Scene Analysis</td>
<td></td>
</tr>
</tbody>
</table>
FRSC 512 Physical Evidence Laboratory
FRSC 513 Forensic Photography
FRSC 515 Selected Topics in Forensic Science
FRSC 516 Forensic Drone Photography
FRSC 517 Questioned Document Examination
FRSC 520 Toxicology
FRSC 550 Issues in Forensic Anthropology
FRSC 580 Facial Reconstruction
FRSC 590 Medicolegal Death Investigation and Pathology
FRSC 600 Forensics Seminar
FRSC 620 Face and Biometric Pattern Analysis
FRSC 630 Fingerprint Identification
FRSC 640 Legal, Privacy and Ethical Issues in Identity Analysis
FRSC 650 Identity Analysis Applications
FRSC 690 Capstone - Moot Court Expert Testimony
FRSC 790 Internship in Forensic Science (Credits: 1-6)

Total Credits 36

Concentration in Forensic Chemistry Analysis (FRCA)
This concentration educates students for a career as a forensic chemistry laboratory analyst.

The successful passing of a Virginia Department of Forensic Sciences background check is required prior to gaining access to FRSC 540 Advanced Forensic Chemistry and FRSC 541 Forensic Chemistry Laboratory.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 500</td>
<td>Introduction to Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 510</td>
<td>Basic Crime Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 514</td>
<td>Survey of Forensic Chemistry, Biology, and DNA Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 520</td>
<td>Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 530</td>
<td>Law and Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 540</td>
<td>Advanced Forensic Chemistry &amp; FRSC 541 Forensic Chemistry Laboratory</td>
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<td>FRSC 570</td>
<td>Trace and Physical Evidence Concepts</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 600</td>
<td>Forensics Seminar</td>
<td>1</td>
</tr>
<tr>
<td>FRSC 610</td>
<td>Forensic Research Project</td>
<td>4</td>
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Electives
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</thead>
<tbody>
<tr>
<td>FRSC 511</td>
<td>Advanced Crime Scene Analysis</td>
</tr>
<tr>
<td>FRSC 512</td>
<td>Physical Evidence Laboratory</td>
</tr>
<tr>
<td>FRSC 513</td>
<td>Forensic Photography</td>
</tr>
<tr>
<td>FRSC 515</td>
<td>Selected Topics in Forensic Science</td>
</tr>
<tr>
<td>FRSC 516</td>
<td>Forensic Drone Photography</td>
</tr>
<tr>
<td>FRSC 517</td>
<td>Questioned Document Examination</td>
</tr>
<tr>
<td>FRSC 550</td>
<td>Issues in Forensic Anthropology</td>
</tr>
<tr>
<td>FRSC 580</td>
<td>Facial Reconstruction</td>
</tr>
<tr>
<td>FRSC 590</td>
<td>Medicolegal Death Investigation and Pathology</td>
</tr>
<tr>
<td>FRSC 690</td>
<td>Capstone - Moot Court Expert Testimony</td>
</tr>
<tr>
<td>FRSC 790</td>
<td>Internship in Forensic Science (Credits: 1-6)</td>
</tr>
</tbody>
</table>

Total Credits 36

Concentration in Forensic/Biometric Identity Analysis (FRBI)
This concentration educates students for a career as an identity intelligence analyst.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 500</td>
<td>Introduction to Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 510</td>
<td>Basic Crime Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 514</td>
<td>Survey of Forensic Chemistry, Biology, and DNA Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 530</td>
<td>Law and Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>AIT 678</td>
<td>National Security Challenges</td>
<td>3</td>
</tr>
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Electives
Select 6 credits from the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>FRSC 511</td>
<td>Advanced Crime Scene Analysis</td>
</tr>
<tr>
<td>FRSC 512</td>
<td>Physical Evidence Laboratory</td>
</tr>
<tr>
<td>FRSC 513</td>
<td>Forensic Photography</td>
</tr>
<tr>
<td>FRSC 515</td>
<td>Selected Topics in Forensic Science</td>
</tr>
<tr>
<td>FRSC 516</td>
<td>Forensic Drone Photography</td>
</tr>
<tr>
<td>FRSC 517</td>
<td>Questioned Document Examination</td>
</tr>
<tr>
<td>FRSC 550</td>
<td>Issues in Forensic Anthropology</td>
</tr>
<tr>
<td>FRSC 580</td>
<td>Facial Reconstruction</td>
</tr>
<tr>
<td>FRSC 590</td>
<td>Medicolegal Death Investigation and Pathology</td>
</tr>
<tr>
<td>FRSC 690</td>
<td>Capstone - Moot Court Expert Testimony</td>
</tr>
<tr>
<td>FRSC 790</td>
<td>Internship in Forensic Science (Credits: 1-6)</td>
</tr>
</tbody>
</table>

Total Credits 36
Accelerated Master's

Forensic Science, BS/Forensic Science, Accelerated MS Overview

Highly qualified Mason undergraduate forensic science majors may apply to the accelerated master's degree with a concentration in either crime scene investigation, forensic biology analysis, forensic chemistry analysis, or forensic/biometric identity analysis. Students who have completed between 75 and 100 credits toward the bachelor's degree are invited to apply. Students are eligible to enter this program and enroll in graduate courses after successfully completing 90 undergraduate credits, inclusive of prerequisites, toward the Forensic (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-bs) Science, BS (https://catalog.gmu.edu/colleges-schools/science/forensic-program/forensic-science-bs) degree. This flexibility makes it possible for students to complete graduate coursework during their final year. If accepted, students will be able to earn the Forensic (https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-bs) Science, BS (https://catalog.gmu.edu/colleges-schools/science/forensic-program/forensic-science-bs) and the Forensic Science, MS (https://catalog.gmu.edu/colleges-schools/science/forensic-program/forensic-science-ms) after satisfactory completion of 150 credits.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP.6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

Concentration Declaration

Students must declare their intended concentration upon application. In the event that a student wishes to change their concentration, students may request to change their concentration by submitting a letter to the Forensic Science Program Director detailing the request and providing justification. These requests and possible substitutions/waivers will be considered on a case-by-case basis and only when the appropriate admissions requirements are met.

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admissions Policies (https://catalog.gmu.edu/admissions/graduate-policies) section of this catalog.

Application requirements for this accelerated master's program include one letter of recommendation from a Forensic Science Program faculty member or advisor. Additionally, a detailed goal statement is required to include why you are interested in the MS in forensic science degree, career goals and professional aspirations, and proposed area of interest of your final Research Project. The GRE and resume are not required for admission into this program.

Successful applicants will have completed each of the following courses or equivalent with a GPA of 3.00 or higher:

- FRSC 200 Survey of Forensic Science
- FRSC 201 Introduction to Criminalistics
- FRSC 302 Forensic Trace Analysis
- FRSC 303 Forensic Evidence and Ethics
- BIOL 213 Cell Structure and Function (Mason Core) (p. 142)
- CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 213 General Chemistry Laboratory I (Mason Core) (p. 142)
- CHEM 212 General Chemistry II (Mason Core) (p. 142) and CHEM 214 General Chemistry Laboratory II (Mason Core) (p. 142)

While undergraduate students, accelerated master's students complete six credits of graduate courses as indicated on their Accelerated Master's Program Application with a minimum grade of 3.00 in each course. Students must meet with an advisor to approve eligible graduate coursework. Once admitted to the accelerated master's program, students must maintain a minimum cumulative GPA of 3.0 in all coursework. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master's program the semester immediately following conferral of the undergraduate degree.

Forensic Biology Analysis Concentration Applicants:

In order to obtain a career as a DNA Analyst, the student should have undergraduate coursework in Statistics, Molecular Biology, Genetics, and Biochemistry.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See the Graduate Course Enrollment by Undergraduates (https://catalog.gmu.edu/policies/academic/registration-attendance/#text) section of this catalog for more information.

Premium Tuition

Students enrolled in this professional MS program are charged at a differential (premium) tuition rate. Therefore, any courses or secondary programs that they may enroll in are subject to the differential tuition rate. The Forensics Graduate Certificate (https://catalog.gmu.edu/colleges-schools/science/forensic-program/forensics-graduate-certificate) has the same premium tuition rate, making it the ideal program for concurrent enrollment (if desired).

Criminal Background Check

The successful passing of a Virginia Department of Forensic Sciences background check is required prior to gaining access to FRSC 540 Advanced Forensic Chemistry, FRSC 541 Forensic Chemistry Laboratory, FRSC 560 Advanced Forensic DNA Sciences, and FRSC 561 Forensic DNA Laboratory.

Course Notes

- FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory

Students shall have completed undergraduate coursework in molecular and/or cell biology, as well as genetics, or students must obtain
permission of the instructor prior to taking FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory.

- FRSC 540 Advanced Forensic Chemistry and FRSC 541 Forensic Chemistry Laboratory.

Students shall have completed undergraduate coursework in general chemistry including polarity and acid/base chemistry. Students shall also have completed Organic Chemistry and be able to identify functional groups and other chemistry structures that make up a molecule. Exposure to instrumental techniques such as gas chromatography, mass spectrometry and infrared spectroscopy is recommended or permission of instructor.

Forensics Graduate Certificate

Banner Code: SC-CERG-FORS

Academic Advising
3400 Exploratory Hall
Fairfax Campus
Phone: 703-993-5071
Email: fscience@gmu.edu
Website: cos.gmu.edu/forensic-science/

This interdisciplinary graduate certificate program is designed for students seeking training in forensic science, as well as for current professionals employed by the federal government, local law enforcement, and private security corporations. Forensics refers to the application of scientific methodologies to the analysis of crime scenes, the collection of evidence, and the laboratory analysis of that evidence in support of criminal investigations. Related legal aspects are also considered as part of a comprehensive approach to forensics.

At the time of completion, depending on the concentration, students will be able to understand the basic principles of forensics and perform a general crime scene analysis. Available concentrations include: Crime Scene Investigation, Forensic Biometric Identity Analysis, and General Forensic Science; curriculum requirements for each concentration are listed in the Requirements tab.

This certificate may be pursued on a part-time or full-time basis.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure information page (https://irr2.gmu.edu/gedt/Forensics/Gedt.html).

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

Applicants to the general forensics concentration should hold a BA or BS degree from a regionally-accredited university with a minimum GPA of 3.00.

To apply, prospective students should submit a completed George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), two copies of official transcripts from all institutions attended, and a current résumé. TOEFL scores are required of all international applicants who do not hold at least a bachelor's degree from a regionally-accredited institution within the US (some exceptions apply).

Pursuing the Forensic Science, MS

Students who wish to continue their studies may apply to the Forensic Science, MS (p. 776). Please see AP.6.9 Requirements for Master’s Degrees (p. 90) and contact an advisor for details.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Premium Tuition

Students enrolled in this professional program are charged at a differential (premium) tuition rate. Therefore, any courses or secondary programs that they may enroll in are subject to the differential tuition rate. The Forensic Science, MS (p. 776) has the same premium tuition rate, making it the ideal program for concurrent enrollment (if desired).

Requirements

Certificate Requirements

Total credits: 18

This certificate may be pursued on a full-or part-time basis.

Students should refer to the Admissions & Policies (p. 780) tab for specific policies related to this program.

Students must complete all core courses and select one concentration.

Forensic Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 500</td>
<td>Introduction to Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 510</td>
<td>Basic Crime Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
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</tr>
</tbody>
</table>

Concentration in Crime Scene Investigation (CSCN)

Choose 12 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>FRSC 511</td>
<td>Advanced Crime Scene Analysis</td>
</tr>
<tr>
<td>FRSC 513</td>
<td>Forensic Photography</td>
</tr>
<tr>
<td>FRSC 530</td>
<td>Law and Forensic Science</td>
</tr>
<tr>
<td>FRSC 550</td>
<td>Issues in Forensic Anthropology</td>
</tr>
<tr>
<td>FRSC 590</td>
<td>Medicolegal Death Investigation and Pathology</td>
</tr>
<tr>
<td>FRSC 690</td>
<td>Capstone - Moot Court Expert Testimony</td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Forensic Biometric Identity Analysis (FRBI)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSC 514</td>
<td>Survey of Forensic Chemistry, Biology, and DNA Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>
Interdisciplinary Program in Neuroscience (IPN)

Phone: 703-993-4334
Website: neuroscience.gmu.edu

Administration

- Saleet Jafri, Director
- Nadine Kabbani, Associate Director

The Interdisciplinary Program in Neuroscience (IPN) at George Mason University is grounded in systems biology, biochemistry, bioengineering, and psychology. Research and education within the IPN is coordinated under the efforts of faculty participating from a number of colleges across the university.

The IPN administers the Neuroscience Minor (p. 784), Neuroscience BS (p. 781), and the Neuroscience PhD (p. 785). Participating neuroscience faculty comprise a unique blend of traditional, experimental, and computational scientists with research spanning a spectrum of key topics in neuroscience including: behavior, anatomy, physiology, neuropharmacology, computational modeling, and informatics. Key research initiatives currently underway within the IPN are:

- Plasticity mechanisms underlying neurological development
- Identifying and characterizing protein interactions for the dopamine and nicotinic acetylcholine receptors in the brain
- Biochemical dynamics in disorders of the basal ganglia
- Computational methods for simulation of complex biological systems
- Description and generation of neuronal morphology
- Adaptive control for stabilization of epilepsy
- Role of metals in memory and Alzheimer’s disease

- Biochemical/metabolic simulations at the organism level
- Cellular and sub-cellular models of associative learning
- Experimental and computational models in calcium signaling
- Synaptic plasticity

Faculty

Program Faculty

Professors
Ascoli, Barreto, Blackwell, Cebral, Flinn, Houser, Jafri, Klimov, Lipsky, McCabe, Olds, Sander

Associate Professors
Dumas, Fryxell, Greenwood, Kabbani, Krueger, McDonald, Peixoto, Peterson, Sikdar, So, Thompson

Assistant Professors
Briemlaier, Herin, Joiner, Lewis

Adjunct Faculty
Neckel

Programs

- Neuroscience Minor
- Neuroscience, BS
- Neuroscience, PhD

The INP also co-administers the Neuroethics Concentration in the Interdisciplinary Studies, MAIS (p. 542) and the Neuroscience Concentration in the Biology, MS (p. 794).

Neuroscience, BS

Banner Code: SC-BS-NEUR

Academic Advising

204 Krasnow Institute
Fairfax Campus

Phone: 703-993-4334
Email: neurosci@gmu.edu
Website: neuroscience.gmu.edu

The Bachelor of Science in Neuroscience is an interdisciplinary program emphasizing the relationship between the biology and chemistry of the nervous system and the behavior of an organism. The BS prepares students for graduate-level study in both medical school and doctoral and master’s-level programs in neuroscience and other health-related fields, and work in the neuroscience field.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (p. 65) section of this catalog.
To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

Students must fulfill all Requirements for Bachelor’s Degrees (p. 89), including the Mason Core (p. 142).

NEUR 410 Current Topics in Neuroscience or NEUR 411 Seminar in Neuroscience fulfill the writing intensive requirement.

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87).

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should refer to the Admissions & Policies (p. 781) tab for specific policies related to this program.

**Foundation Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
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<tr>
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<td>Select one from the following:</td>
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<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td></td>
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<tr>
<td>BIOL 430</td>
<td>Advanced Human Anatomy and Physiology I</td>
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</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 213</td>
<td>General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>&amp; CHEM 214</td>
<td>General Chemistry Laboratory II (Mason Core) (p. 142)</td>
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<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
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<td>MATH 123</td>
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<tr>
<td>&amp; MATH 124</td>
<td>Calculus with Algebra/Trigonometry, Part B (Mason Core) (p. 142)</td>
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<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
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<td>PSYC 375</td>
<td>Brain and Sensory Processes</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 376</td>
<td>Brain and Behavior</td>
<td>3</td>
</tr>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 327</td>
<td>Cellular, Neurophysiologic, and Pharmacologic Neurosc</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 335</td>
<td>Molecular, Developmental, and Systems Neurosc</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 410</td>
<td>Current Topics in Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>or NEUR 411</td>
<td>Seminar in Neuroscience</td>
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**Mathematics**

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<table>
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<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
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<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>PSYC 300</td>
<td>Statistics in Psychology</td>
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</tr>
<tr>
<td>MATH 352</td>
<td>Statistics</td>
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**Physics**

Select one of the following sequences: 8

<table>
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<th>Code</th>
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<tbody>
<tr>
<td>PHYS 243</td>
<td>College Physics I (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>&amp; PHYS 244</td>
<td>and College Physics I Lab (Mason Core) (p. 142)</td>
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<tr>
<td>&amp; PHYS 245</td>
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<td>4</td>
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<tr>
<td>&amp; PHYS 246</td>
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<td>4</td>
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<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 161</td>
<td>University Physics I Laboratory</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 260</td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 261</td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 373</td>
<td>Biopsychology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>&amp; CHEM 315</td>
<td>Organic Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Statistics**

Select one course (3 or 4 credits) from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 300</td>
<td>Statistics in Psychology</td>
<td></td>
</tr>
<tr>
<td>MATH 352</td>
<td>Statistics</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

Students should consult with an advisor to choose appropriate elective courses, which must be approved by the director of the program. A sample of possible electives is given below. Only courses not already taken in the degree will apply as electives, with the exception of seminar and topics courses; a different topic must be addressed in the second instance of a seminar or topics course. Students may apply no more than 6 credits of courses with a grade of ‘D’ to this requirement.

Students intending to pursue a doctorate in neuroscience or a medical degree are advised to take CHEM 313 Organic Chemistry I and CHEM 315 Organic Chemistry Lab I.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 101</td>
<td>Introduction to Bioengineering</td>
<td>24</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>BENG 313</td>
<td>Physiology for Engineers</td>
<td></td>
</tr>
<tr>
<td>BIOL 305</td>
<td>Biology of Microorganisms</td>
<td></td>
</tr>
<tr>
<td>BIOL 306</td>
<td>Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td></td>
</tr>
<tr>
<td>BIOL 310</td>
<td>Biodiversity</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 322</td>
<td>Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 323</td>
<td>Lab for Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 326</td>
<td>Animal Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 417</td>
<td>Selected Topics in Molecular and Cellular Biology (when topic is Foundations of the Mammalian Brain)</td>
<td></td>
</tr>
<tr>
<td>BIOL 420</td>
<td>Vaccines</td>
<td></td>
</tr>
<tr>
<td>BIOL 425</td>
<td>Human Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 426</td>
<td>Mechanisms of Aging</td>
<td></td>
</tr>
<tr>
<td>BIOL 430</td>
<td>Advanced Human Anatomy and Physiology I</td>
<td></td>
</tr>
<tr>
<td>BIOL 431</td>
<td>Advanced Human Anatomy and Physiology II</td>
<td></td>
</tr>
<tr>
<td>BIOL 452</td>
<td>Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 453</td>
<td>Immunology Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOL 471</td>
<td>Evolution</td>
<td></td>
</tr>
<tr>
<td>BIOL 482</td>
<td>Introduction to Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 483</td>
<td>General Biochemistry</td>
<td></td>
</tr>
<tr>
<td>BIOL 484</td>
<td>Cell Signaling and Disease</td>
<td></td>
</tr>
<tr>
<td>BIOL 515</td>
<td>Developmental Neurobiology</td>
<td></td>
</tr>
<tr>
<td>CDS 301</td>
<td>Scientific Information and Data Visualization</td>
<td></td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td></td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Organic Chemistry Lab II</td>
<td></td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Quantitative Chemical Analysis</td>
<td></td>
</tr>
<tr>
<td>CHEM 463</td>
<td>General Biochemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 464</td>
<td>General Biochemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 465</td>
<td>Biochemistry Lab</td>
<td></td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td></td>
</tr>
<tr>
<td>or MATH 116</td>
<td>Analytic Geometry and Calculus II (Honors)</td>
<td></td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td></td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td></td>
</tr>
<tr>
<td>NEUR 405</td>
<td>RS: Laboratory Methods in Behavioral Neuroscience</td>
<td></td>
</tr>
<tr>
<td>NEUR 406</td>
<td>Zebrafish Neurodevelopment Laboratory</td>
<td></td>
</tr>
<tr>
<td>NEUR 410</td>
<td>Current Topics in Neuroscience (when not used to fulfill the technical writing requirement)</td>
<td></td>
</tr>
<tr>
<td>NEUR 411</td>
<td>Seminar in Neuroscience</td>
<td></td>
</tr>
<tr>
<td>NEUR 440</td>
<td>Independent Study in Neuroscience</td>
<td></td>
</tr>
<tr>
<td>NEUR 450</td>
<td>Honors Thesis Proposal</td>
<td></td>
</tr>
<tr>
<td>NEUR 451</td>
<td>Honors Thesis</td>
<td></td>
</tr>
<tr>
<td>NEUR 461</td>
<td>Special Topics in Neuroscience</td>
<td></td>
</tr>
<tr>
<td>NEUR 480</td>
<td>Biological Bases of Alzheimer’s Disease</td>
<td></td>
</tr>
<tr>
<td>PHYS 262</td>
<td>University Physics III (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PHYS 263</td>
<td>University Physics III Laboratory (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 304</td>
<td>Principles of Learning</td>
<td></td>
</tr>
<tr>
<td>PSYC 309</td>
<td>Sensation, Perception, and Information Processing</td>
<td></td>
</tr>
<tr>
<td>PSYC 317</td>
<td>Cognitive Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 441</td>
<td>Criminal Behavior: Psychological and Neurological Aspects</td>
<td></td>
</tr>
<tr>
<td>PSYC 472</td>
<td>Current Topics in Brain and Behavior</td>
<td></td>
</tr>
</tbody>
</table>

| Total Credits: 24 |

1. Fulfills the writing intensive requirement.

**Mason Core and Elective Credits**

In order to meet a minimum of 120 credits, this degree requires an additional 39-42 credits which may be applied toward any remaining Mason Core (p. 142) requirements (outlined below), Requirements for Bachelor’s Degrees (p. 89), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Exploration Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Integration Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>40</td>
</tr>
</tbody>
</table>

1. Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2. Minimum 3 credits required.
Honors

Honors in the Major
Highly-qualified students may apply to graduate with honors in the major.

Eligibility
To be eligible for admission, neuroscience majors must have completed at least 60 credits and have a minimum cumulative GPA of 3.25 and a minimum GPA of 3.25 in neuroscience courses.

Honors Requirements
If accepted, students must take a sequence of three courses, which culminates in the successful completion and presentation of an independent honors thesis.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUR 410</td>
<td>Current Topics in Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>or NEUR 411</td>
<td>Seminar in Neuroscience</td>
<td></td>
</tr>
<tr>
<td>NEUR 450</td>
<td>Honors Thesis Proposal</td>
<td>2-3</td>
</tr>
<tr>
<td>NEUR 451</td>
<td>Honors Thesis</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>8-10</td>
</tr>
</tbody>
</table>

To graduate with honors, students must earn a minimum GPA of 3.50 in their honors courses, maintain a minimum cumulative GPA of 3.25, and complete an honors thesis.

Accelerated Master's

Neuroscience, BS/Biology, MS
Overview
Qualified undergraduates may be admitted into an accelerated master's program and obtain both a Neuroscience, BS (p. 781) and a Biology, MS (https://catalog.gmu.edu/colleges-schools/science/systems-biology/biology-ms) within an accelerated time frame. Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of graduate work may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master's program and must then complete an additional 24 credits to receive the master's degree. All other master's degree requirements must be met, including a minimum of 18 credits taken for the master's after the bachelor's degree is complete.

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (https://catalog.gmu.edu/admissions/graduate-policies) section of this catalog. Application information for this accelerated master's program can be found on the School of Systems Biology's website (https://cos.gmu.edu/ssb).

Successful applicants will have an overall undergraduate GPA of at least 3.10. Three letters of recommendation, including one from a prospective thesis or project advisor, are required. Additionally, they will have completed the following courses with a GPA of 3.00 or higher.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>One Course in Statistics:</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td>or STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>or PSYC 300</td>
<td>Statistics in Psychology</td>
<td></td>
</tr>
<tr>
<td>or MATH 352</td>
<td>Statistics</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>5</td>
</tr>
<tr>
<td>or NEUR 327</td>
<td>Cellular, Neurophysiological, and Pharmacological Neuroscience</td>
<td></td>
</tr>
<tr>
<td>BIOL 310</td>
<td>Biodiversity</td>
<td>3</td>
</tr>
<tr>
<td>or NEUR 335</td>
<td>Molecular, Developmental, and Systems Neuroscience</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab</td>
<td>2</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements
At the beginning of the student's final undergraduate semester, students must submit a bachelor's/accelerated master's transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science's Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master's program in the semester immediately following conferral of the bachelor's degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals.

After completing 120 credits and all requirements for the bachelor's degree and filing the Graduation Intent Form, students are awarded a bachelor's degree.

Additional Requirements
• Satisfactory performance in undergraduate coursework must be maintained
• Satisfactory graduate-level performance in each approved graduate course taken while in undergraduate status (receiving a grade of B or better (3.0 or higher) in each course).
• Submission of documents to complete the master's application before the published deadline, including a goals statement and a resume. GRE scores are not required.
• Completion of undergraduate degree from George Mason University.
• Confirmation of a graduate faculty advisor.

Neuroscience Minor
Banner Code: NEUR

Academic Advising
204 Krasnow Institute
Fairfax Campus
Phone: 703-993-4334
Email: neurosci@gmu.edu
Website: neuroscience.gmu.edu
Neuroscience is one of the most rapidly growing disciplines in science and society today. Due to its interdisciplinary nature, it draws on skills from anatomy, chemistry, electrical engineering, genetics, math, psychology, economics, and philosophy among others. Students in diverse fields can benefit from neuroscience through this minor.

### Admissions & Policies

#### Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (p. 87).

#### Requirements

**Minor Requirements**

Total credits: 21-22

Students should refer to the Admissions & Policies (p. 785) tab for specific policies related to this program.

Students must complete at least 20 credits of coursework with a minimum GPA of 2.00.

### Biology Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Elective Course

Select one from the following: 3-4

- BIOL 311 General Genetics
- BIOL 320 Comparative Chordate Anatomy
- BIOL 322 Developmental Biology
- BIOL 326 Animal Physiology
- BIOL 425 Human Physiology
- BIOL 430 Advanced Human Anatomy and Physiology I

**Total Credits:** 7-8

### Psychology Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 373</td>
<td>Biopsychology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 375</td>
<td>Brain and Sensory Processes</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 376</td>
<td>Brain and Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 8

### Neuroscience Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUR 335</td>
<td>Molecular, Developmental, and Systems Neuroscience</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 6

### Neuroscience, PhD

**Banner Code:** SC-PHD-NEUR

Nadine Kabbani

Phone: 703-993-4406
Email: nkabbani@gmu.edu

The Neuroscience, PhD program focuses on the study of the brain and addresses the challenge of developing an integrative understanding of cognition and higher brain function. In response to this challenge, the rapidly developing field of neuroscience has produced an exponential increase in the amount of data available to investigators as they develop new theories of brain function and new hypotheses to test. The main objective of the program is to prepare students to participate at the cutting edge of this exciting field in academia, industry, and government. The program provides students with a rich interdisciplinary intellectual environment that fosters the development of the skills they will need to successfully pursue research careers.

Current faculty research focuses on the broad areas of behavior, anatomy, physiology, neuropharmacology, molecular biology, computational modeling, and informatics. External research collaborations exist with federal agencies, private and not-for-profit corporations, and other universities. The scope of research ranges from the subcellular and molecular level (in the context of such phenomena as drug addiction and the biological basis of schizophrenia) to the systems and behavioral level.

Current research projects include plasticity mechanisms supporting development, network formation and information processing, cellular and subcellular models of associative learning, biochemical dynamics in disorders of the basal ganglia, computational methods for simulation of complex biological systems, role of metals in memory and Alzheimer's disease, and dynamical behavior of neurons and networks of neurons, and identifying and characterizing protein interactions for the dopamine and nicotinic acetylcholine receptors in the brain.

### Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants should have a bachelor's degree in a relevant field and undergraduate courses in organic chemistry, cell biology, and calculus. Coursework in biochemistry (e.g. BIOL 483 General Biochemistry), cell biology (e.g. BIOL 484 Cell Signaling and Disease), and molecular genetics (e.g. BIOL 482 Introduction to Molecular Genetics) is highly recommended. Admission requires a minimum GPA of 3.25 in undergraduate work and acceptable GRE scores. In addition, the applicant's goal statement should relate to the research interests of at least one faculty member in the program and include the names of...
two faculty members who may be suitable as advisors or supervisory committee members.

To apply, complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), supply a goal statement, two copies of official transcripts from each college and graduate institution attended, three letters of recommendation from faculty members or individuals who have firsthand knowledge of the applicant's academic or research capabilities, and an official report of scores obtained on the GRE-GEN. The GRE-SUB is optional. TOEFL scores are required of all international applicants.

Policies
For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Reduction of Credits
For students entering the doctoral program with a master's degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the college's associate dean for student affairs. See AP.6.5.2 Reduction of Credits (p. 91) for more information.

Transfer of Credit
An alternative to the reduction of credit is a transfer of credit. With this option, up to 24 credits of previous, relevant graduate coursework may be transferred into the program, provided those credits have not been applied toward a previous degree.

Requirements
Degree Requirements
Total credits: 72

Students should refer to the Admissions & Policies (p. 785) tab for specific policies related to this program.

Doctoral Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEUR 702</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>Select one statistics course from the following:</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 535</td>
<td>Analysis of Experimental Data</td>
<td></td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td></td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td></td>
</tr>
<tr>
<td>Core Neuroscience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEUR 601</td>
<td>Developmental Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 602</td>
<td>Cellular Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 603</td>
<td>Mammalian Neuroanatomy</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 701</td>
<td>Neuroscience Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>Rotations and Readings</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>NEUR 703</td>
<td>Laboratory Rotation and Readings (This course will be taken three times)</td>
<td></td>
</tr>
</tbody>
</table>

Electives

Select 20-21 credits of electives

Total Credits

20-21

Publication
An additional requirement for graduation calls for students to have at least one publication (in print or in press) in a refereed journal.

Doctoral Committee and Proposal
When coursework is nearing completion, the student should form a doctoral committee and start preparing their dissertation proposal. Students in consultation with their advisor identify which faculty are appropriate to be a part of their committee. The dissertation committee administers the qualifying exam and evaluates the dissertation proposal as well as the dissertation itself. At least one of the committee members must be outside of the dissertation advisor's department.

Candidacy Examination and Advancement to Candidacy
The doctoral candidacy examination includes written and oral components. After passing the candidacy exam and receiving committee approval for the dissertation proposal, the student is advanced to doctoral candidacy.

Dissertation Research
Note: No more than 24 combined credits from NEUR 998 Dissertation Proposal and NEUR 999 Doctoral Dissertation may be applied toward satisfying doctoral degree requirements, with no more than 12 credits of NEUR 998 Dissertation Proposal.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUR 998</td>
<td>Dissertation Proposal</td>
<td>24</td>
</tr>
<tr>
<td>NEUR 999</td>
<td>Doctoral Dissertation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits

24

School of Systems Biology

Monique Sweeney, Administrative Assistant

Phone: 703-993-8400
Email: binf@gmu.edu
Website: ssb.gmu.edu

Administration

- Iosif Vaisman, Acting Director, BCB PhD Program Director
- Kylene Kehn-Hall, BIOS PhD Program Director
- Don Seto, BCB MS Program Director
- Ancha Baranova, Biology MS Program Director
- Vikas Chandhoke, PSM Program Director
- Andrea Nikoi, Director of HR and Finance

The School of Systems Biology offers undergraduate and graduate degree programs in bioinformatics and computational biology, and graduate degree programs in biology and biosciences. The school also offers research opportunities at the graduate and undergraduate levels. For additional details about current faculty research activities, please visit the school's website.
The School of Systems Biology works closely with and provides faculty and administrative support to the Department of Biology (p. 641), through which the Biology, BA (p. 643) and Biology, BS (p. 648) degrees are offered. An accelerated master’s option is also available.

### Faculty

#### School Faculty

#### Professors
- Bailey (distinguished)
- Chandhoke
- Jafri
- Kashanchi
- Klimov
- Liotta
- Petricoin
- Popov
- Seto
- Vaisman (acting director)
- Willett
- Wu

#### Associate Professors
- Baranova
- Fryxell
- Kabbani
- Kehn-Hall
- Luchini
- van Hoek

#### Assistant Professors
- Hakami
- Narayanan

#### Adjunct Faculty
- Solka

#### Affiliate Faculty
- Ali
- Arold
- Bokhari
- Born
- Campbell
- Cao
- Carneiro de Silva
- Casey
- Cheadle
- Cooper
- Cox
- Cunningham
- Dabisch
- Dasgupta
- Gutting
- Jessup
- Kim
- Manyam
- Masso
- Matteo
- Mehta
- Morozov
- Moskalev
- Nierman
- Nikolsky
- Fleet
- Rajasimha
- Rao
- Stepanova
- Tang
- Tatarinova
- Taylor
- Turell
- Voss
- Ward
- Weller
- Zhao

#### Emeritus
- Isbister
- Soyfer
- Royt

### Requirements & Policies

#### Policies

Students are governed by the university’s policies (p. 77).

#### Using Laboratories

Only authorized experiments and exercises may be carried out in the school’s research and teaching laboratories and must be done under the supervision of a university faculty or staff member. No unauthorized work is allowed in any laboratory.

#### Using Organisms in Classes

Direct observations of actual organisms are considered an essential part of learning biology at all levels. Direct observations of organisms may involve the use of living or preserved specimens, dissections of organisms or parts of organisms, and microscopic examination of organisms or parts of organisms. All use of live animals conforms to National Institutes of Health guidelines for the use and care of laboratory animals. Activities specified above may be a required part of a course and thus serve as a basis for grading in the course. Any questions about the administration of this policy should be directed to the course coordinator or instructor.

### Programs

- Bioinformatics Management, MS
- Bioinformatics Management, Professional Science Master’s
- Bioinformatics Minor
- Bioinformatics and Computational Biology Graduate Certificate
- Bioinformatics and Computational Biology, MS
- Bioinformatics and Computational Biology, PhD
- Biology, MS
- Biosciences, PhD
- Personalized Medicine Graduate Certificate

### Bioinformatics Minor

**Banner Code: BNF**

**Academic Advising**

Colgan Hall, Room 312
Science and Technology Campus

Phone: 703-993-8400
Email: binf@gmu.edu
Website: ssb.gmu.edu

The minor is an interdisciplinary program consisting of required courses in biology, programming, statistics, and bioinformatics.

### Admissions & Policies

#### Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

For policies governing all undergraduate programs, see AP Undergraduate Policies (p. 87).

#### Requirements

**Minor Requirements**

Total credits: 19-20

Students should refer to the Admissions & Policies (p. 787) tab for specific policies related to this program.

Students must complete the following courses with a minimum GPA of 2.00.

#### Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 401</td>
<td>Bioinformatics and Computational Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BINF 402</td>
<td>Bioinformatics and Computational Biology II</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 482</td>
<td>Introduction to Molecular Genetics</td>
<td>3</td>
</tr>
</tbody>
</table>
Bioinformatics Management, MS

Banner Code: SC-MS-BNFM

Academic Advising
312 Colgan Hall
Science and Technology Campus
Phone: 703-993-8400
Email: binfpsm@gmu.edu
Website: ssb.gmu.edu

This degree addresses the regional and national need for technically trained managers who will be able to lead teams of bioinformaticians in both the public and private sectors. The degree combines a solid foundation in bioinformatics research, tools, and techniques, with the management skills needed to address the associated legal, ethical, managerial, and business issues. The degree is intended for:

- Students seeking advancement in their current bioinformatics careers that requires an advanced degree in bioinformatics combined with management expertise.
- Students with a general background in biological science or computational methods who are planning to enter the field of bioinformatics as managers and would like to strengthen their bioinformatics and managerial expertise.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility

Applicants should have a bachelor’s degree in biology, computer science, or a related field, with a GPA of at least 3.00 in their last 60 credits of study. Applicants should have taken courses in molecular biology, computer science, calculus, physical chemistry, and statistics. Students with deficiencies in one or more of these areas may be required to take additional courses from the undergraduate curriculum.

Application Requirements

To apply, prospective students should submit the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), supply two copies of official transcripts from each college and graduate institution attended, a current résumé, and an expanded goals statement. Applicants should also include three letters of recommendation and official scores obtained on the GRE general exam. The GRE requirement will be waived if the student holds a master’s degree from a U.S. institution. TOEFL or IELTS scores are required of all international applicants.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Requirements

Degree Requirements

Total credits: 30

Students should refer to the Admissions & Policies (p. 788) tab for specific policies related to this program.

Bioinformatics Core Courses

Foundational courses in modern biotechnology, tools and methods for bioinformatics analysis, and methods for creating customized bioinformatics tools.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 530</td>
<td>Introduction to Bioinformatics Methods</td>
<td>3</td>
</tr>
<tr>
<td>or BINF 630</td>
<td>Bioinformatics Methods</td>
<td></td>
</tr>
<tr>
<td>BINF 531</td>
<td>Molecular Cell Biology for Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>or BINF 631</td>
<td>Molecular Cell Biology for Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>BINF 634</td>
<td>Bioinformatics Programming</td>
<td>3</td>
</tr>
<tr>
<td>BINF 730</td>
<td>Biological Sequence and Genome Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BINF 633</td>
<td>Molecular Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>BINF 650</td>
<td>Introduction to Bioinformatics Database</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design</td>
<td></td>
</tr>
<tr>
<td>BINF 702</td>
<td>Biological Data Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

Management Core Courses

Foundational courses in management theory related directly to the management of scientific programs and personnel.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS 500</td>
<td>Professional Preparation for STEM Disciplines</td>
<td>12</td>
</tr>
<tr>
<td>COS 600</td>
<td>Multidisciplinary Problem Solving and Leadership</td>
<td></td>
</tr>
<tr>
<td>EVPP 638</td>
<td>Corporate Environmental Management and Policy</td>
<td></td>
</tr>
<tr>
<td>GBUS 613</td>
<td>Financial Reporting and Decision Making</td>
<td></td>
</tr>
<tr>
<td>GBUS 623</td>
<td>Marketing Management</td>
<td></td>
</tr>
<tr>
<td>GBUS 643</td>
<td>Managerial Finance</td>
<td></td>
</tr>
<tr>
<td>GBUS 653</td>
<td>Organizational Behavior</td>
<td></td>
</tr>
<tr>
<td>GCH 691</td>
<td>Project Management in Public Health</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 19-20
Capstone Research Project
Focusing on bioinformatics management issues and techniques.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 798</td>
<td>Research Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Bioinformatics Management, Professional Science Master's
Banner Code: SC-MSP-BNFM
Vikas Chandhoke, Program Director
312 Colgan Hall
Science and Technology Campus
Phone: 703-993-8400
Email: binfpsm@gmu.edu
Website: ssb.gmu.edu

This Professional Science Master's (https://www.professionalsciencemasters.org) (PSM) degree addresses the growing demand for trained bioinformatics professionals with solid management skills able to assume leadership roles in biotechnology, pharmaceutical and health care sectors. The flexible degree structure allows students to custom design a curriculum that best suits their needs and allows a focus on the biological big data analysis, genomics, or bioinformatics software development and management. Students will receive advanced training in bioinformatics and management through coursework and an external internship. The curriculum was developed with active input from the Program Advisory Board consisting of recognized leaders in the field. Many courses are offered in a distance-learning format, allowing students to participate in class without having to travel to campus.

Admissions & Policies

Admissions
University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now). Applicants should have a bachelor’s degree in biology, computer science, or a related field with a GPA of at least 3.00 in their last 60 credits of study. Applicants should have taken courses in molecular biology, computer science, calculus, physical chemistry, and statistics. Students with deficiencies in one or more of these areas may be required to take additional courses from the undergraduate curriculum. To apply, prospective students should submit the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), supply two copies of official transcripts from each college and graduate institution attended, a current résumé, and an expanded goals statement. Applicants should also include three letters of recommendation and official scores obtained on the GRE general exam. The GRE requirement will be waived if the student holds a master’s degree from a U.S. institution. TOEFL or IELTS scores are required of all international applicants.

Requirements

Degree Requirements
Total credits: 31

Students should refer to the Admissions & Policies (p. 789) tab for specific policies related to this program.

Due to the varied course options and their associated prerequisites, students are encouraged to create a program of study with their faculty advisor by the end of their first semester of studies.

Bioinformatics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 630</td>
<td>Bioinformatics Methods</td>
<td>3</td>
</tr>
<tr>
<td>BINF 631</td>
<td>Molecular Cell Biology for Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>BINF 702</td>
<td>Biological Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Select two from the following or other BINF-prefixed courses in consultation with the faculty advisor:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BINF 633</td>
<td>Molecular Biotechnology</td>
<td></td>
</tr>
<tr>
<td>BINF 634</td>
<td>Bioinformatics Programming</td>
<td></td>
</tr>
<tr>
<td>BINF 650</td>
<td>Introduction to Bioinformatics Database Design</td>
<td></td>
</tr>
<tr>
<td>BINF 731</td>
<td>Protein Structure Analysis</td>
<td></td>
</tr>
<tr>
<td>BINF 732</td>
<td>Genomics</td>
<td></td>
</tr>
<tr>
<td>BINF 740</td>
<td>Introduction to Biophysics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

Professional Skills Courses

Please note: MBA-prefixed courses are offered on an alternative semester schedule (view the Schedule of Classes (https://patriotweb.gmu.edu/pls/prod/bwckschd.p_disp_dyn_sched) for details). Considering this, it may be advisable to take these courses in one semester rather than over several.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 705</td>
<td>Research Ethics</td>
<td>1</td>
</tr>
<tr>
<td>MBA 712</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from the following that hasn't previously been taken:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 508</td>
<td>Selected Topics in Animal Biology 1</td>
<td></td>
</tr>
<tr>
<td>COS 500</td>
<td>Professional Preparation for STEM Disciplines</td>
<td></td>
</tr>
</tbody>
</table>
COS 600  Multidisciplinary Problem Solving and Leadership
EVPP 638  Corporate Environmental Management and Policy
AIT 671  Information System Infrastructure Lifecycle Management
COMM 641  Advanced Communication Skills for STEM
GBUS 613  Financial Reporting and Decision Making
GBUS 623  Marketing Management
GBUS 643  Managerial Finance
GBUS 653  Organizational Behavior
GBUS 738 or MBA 738  Data Mining for Business Analytics
GCH 691  Project Management in Public Health
HAP 713  Project Management in Health Information Technology
MBA 712  Project Management
MBA 726  Negotiations
PUAD 781  Information Management: Technology and Policy
SWE 625  Software Project Management

Or other courses in consultation with the faculty advisor

Total Credits 7

Scientific Electives
Close attention should be paid to each course’s prerequisites.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 6 credits in courses that haven't previously been taken, tailored to suit interests and goals in consultation with the faculty advisor.</td>
<td></td>
</tr>
</tbody>
</table>

Big Data Analysis:
- CSI 695  Scientific Databases
- AIT 580  Analytics: Big Data to Information
- AIT 581  Problem Formation and Solving in Big Data
- AIT 622  Determining Needs for Complex Big Data Systems

Synthetic and Systems Biology:
- BIOS 701  Systems Biology
- CHEM 665  Protein-Protein Interactions: Methods and Applications

Human Health and Personal Genomics:
- BINF 732  Genomics
- BIOL 562  Personalized Medicine
- BIOL 566  Cancer Genomics
- BIOL 665  Environmental Hazards to Human Health
- BIOS 740  Laboratory Methods in Functional Genomics and Biotechnology
- BIOS 741  Genomics

Software Development and Analysis:
- BINF 634  Bioinformatics Programming

SWE 510  Object-Oriented Programming in Java
SWE 619  Object-Oriented Software Specification and Construction
SWE 621  Software Design and Architecture
SWE 626  Software Project Laboratory
SWE 637  Software Testing
SWE 645  Component-Based Software Development
SWE 760  Software Analysis and Design of Real-Time Systems

Colloquium: 1
- BINF 704  Colloquium in Bioinformatics (may be repeated for up to 3 credits)

Additional Internship Experience: 2
- BINF 795  Bioinformatics Internship

Total Credits 6

1 When the topic is Research & Development in Biotechnology Companies.

2 The maximum amount of internship credits that can be applied to the degree is 6 credits.

Internship
The internship component is intended to provide students with the opportunity to put into practice all of the skills and knowledge accumulated throughout their studies in this program. Students must arrange an internship with a private company, a governmental agency, a non-governmental organization, or some other entity with an interest in bioinformatics and management. Students must identify a specific person within that outside entity who will be the contact and manager of the internship.

Internship credit is never given for work previously done, or for work that would have been done in any case due to an existing employment relationship.

The internship work must produce one or more products such as: a comprehensive report, a departmental presentation, a research project, or an article. Internship placement and product type must be approved by the student’s faculty advisor.

Further details and procedures for completing the internship can be found with the faculty advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Three credits of internship</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BINF 795  Bioinformatics Internship</td>
<td></td>
</tr>
</tbody>
</table>
In the field of bioinformatics and computational biology, specialists collect, store, analyze and present complex biological data. Through this work, critical contributions are made to basic biology, disease detection, drug design, modeling biosystems, forensics, agriculture, and environmental sciences through the combination of biological analysis and high-performance computing. This degree addresses the growing national and regional demand for trained computational biologists. It combines a solid foundation in biotechnology with the computational skills required for bioinformatics. The flexibility of the degree structure permits students to custom design their curriculum under an advisor's guidance, making the program especially relevant for students employed in today's diverse biotechnology workplace. Students completing the program are qualified to pursue careers that require knowledge of current bioinformatics methods and applications, and the ability to develop and/or use new bioinformatics software.

Courses are generally offered in the late afternoon or early evening to accommodate students with full-time employment outside the university. Students employed at area biotechnology organizations may take up to 6 credits (out of 31) for bioinformatics work done on the job, under the guidance of a faculty member. This work-related project may be applied as either a 3-credit research project or a 6-credit master's thesis.

All courses are also offered online, allowing students to participate in class without having to travel to campus. Further information can be found on with Mason Online (http://masononline.gmu.edu).

### Admissions & Policies

#### Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

#### Eligibility

Applicants should have a bachelor's degree in biology, computer science, or a related field, with a GPA of at least 3.00 in their last 60 credits of study. Applicants should have taken courses in biology, computer science, calculus, physical chemistry, and statistics. Students with deficiencies in one or more of these areas may be required to take additional courses from the undergraduate curriculum.

#### Application Requirements

To apply, prospective students should complete a George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), supply two copies of official transcripts from each college and graduate institution attended, a current résumé, and an expanded goals statement. Applicants should also include three letters of recommendation and official scores obtained on the GRE general exam. The GRE requirement will be waived if the student holds a master's degree from a regionally accredited U.S. institution. TOEFL scores are required for all international applicants.

### Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

#### Requirements

### Degree Requirements

**Total credits: 31**

Students should refer to the Admissions & Policies (p. 791) tab for specific policies related to this program.

#### Bioinformatics Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 630</td>
<td>Bioinformatics Methods</td>
<td>3</td>
</tr>
<tr>
<td>BINF 631</td>
<td>Molecular Cell Biology for Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>BINF 634</td>
<td>Bioinformatics Programming</td>
<td>3</td>
</tr>
<tr>
<td>BINF 701</td>
<td>Systems Biology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

#### Advanced Bioinformatics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Advanced bioinformatics courses numbered BINF 730 and above</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

#### Bioinformatics Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 704</td>
<td>Colloquium in Bioinformatics</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

#### Research Project or Thesis and Electives

Select either a research project or a master’s thesis and electives courses.

##### Research Project

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 798</td>
<td>Research Project</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Select 12 credits of elective in bioinformatics and computational biology, biology and biotechnology, or computational sciences, as approved by the advisor.

##### Thesis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 799</td>
<td>Master's Thesis</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Select 9 credits of electives in bioinformatics and computational biology, biology and biotechnology, or computational sciences, as approved by the advisor.
Bioinformatics and Computational Biology Graduate Certificate

Banner Code: SC-CERG-BCB

Academic Advising
312 Colgan Hall
Science and Technology Campus
Phone: 703-993-8400
Email: binf@gmu.edu
Website: ssb.gmu.edu

This graduate certificate addresses the growing national and regional demand for trained computational biologists by combining a solid foundation in biotechnology with computational skills relevant to bioinformatics. With online and in-classroom courses, the flexibility of this certificate's structure permits students to custom design their curriculum under an advisor's guidance, making the graduate certificate especially relevant for students employed in today's diverse Northern Virginia high-technology workplace. Ideal candidates for this certificate are those who have a background in biological and computer sciences, and are currently working in or planning to enter the fields of biotechnology or bioinformatics. The certificate is also highly relevant for students who are interested in advancing their career goals but may not have adequate time available to undertake a graduate degree program. All courses are also offered online, allowing students to participate in class without having to travel to campus. Further information can be found with Mason Online (http://masononline.gmu.edu).

The certificate may be pursued on a part-time or full-time basis.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants should hold a BA or BS degree in a discipline related to biological or computer science from a regionally accredited university, with a minimum GPA of 3.00. Applicants should have taken courses in molecular biology, computer science, calculus, physical chemistry, or statistics, and should also possess working knowledge of a computer programming language. To apply, prospective students should complete a George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), supply two copies of official transcripts from each college and graduate institution attended, and a current résumé. TOEFL scores are required of all international applicants.

Policies

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

Premium Tuition

The certificate is a professional certification program that charges students at a differential (premium) tuition rate, with an additional $100 per credit added to the standard George Mason University graduate tuition rate for students who enroll in this certificate program, regardless of in-state or out-of-state status. The differential tuition is used to fund continuing improvements in the College of Science's (COS) educational facilities used to support the certificate program.

Students may not pursue this certificate concurrently with any other graduate degree program or certificate program offered by COS. In addition, students may not apply previous credit hours from another certificate, degree, or non-degree studies to this certificate program because of the differential (premium) tuition rate.

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Students should refer to the Admissions & Policies (p. 792) tab for specific policies related to this program.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 630</td>
<td>Bioinformatics Methods</td>
<td>3</td>
</tr>
<tr>
<td>BINF 631</td>
<td>Molecular Cell Biology for Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>BINF 634</td>
<td>Bioinformatics Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

Electives

Select two courses from the following courses, or other courses as approved by the coordinator:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 633</td>
<td>Molecular Biotechnology</td>
<td></td>
</tr>
<tr>
<td>BINF 636</td>
<td>Microarray Methodology and Analysis</td>
<td></td>
</tr>
<tr>
<td>BINF 639</td>
<td>Introduction to Biometrics</td>
<td></td>
</tr>
<tr>
<td>BINF 730</td>
<td>Biological Sequence and Genome Analysis</td>
<td></td>
</tr>
<tr>
<td>BINF 731</td>
<td>Protein Structure Analysis</td>
<td></td>
</tr>
<tr>
<td>BINF 732</td>
<td>Genomics</td>
<td></td>
</tr>
<tr>
<td>BINF 733</td>
<td>Gene Expression Analysis</td>
<td></td>
</tr>
<tr>
<td>BINF 734</td>
<td>Advanced Bioinformatics Programming</td>
<td></td>
</tr>
<tr>
<td>BINF 739</td>
<td>Topics in Bioinformatics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

Bioinformatics and Computational Biology, PhD

Banner Code: SC-PHD-BCB

Iosif Vaisman, Program Director
312 Colgan Hall
Science and Technology Campus

Phone: 703-993-8400
Email: binf@gmu.edu
Website: ssb.gmu.edu

In the field of bioinformatics and computational biology, specialists collect, store, analyze, and present complex biological data. Through this work, critical contributions are made to disease detection, drug design, forensics, agriculture, and environmental sciences through the combination of biological analysis and high-performance computing. The main objective of this doctorate is to educate the next generation of computational biologists for careers in academia, industry, and government. The program provides students with interdisciplinary academic training that includes fundamental bioscience courses as well as core and advanced courses in bioinformatics. Courses are designed to be completed in approximately two years. Completion of coursework, the comprehensive exam, and a successful dissertation proposal results in advancement to candidacy status. In the final phase, students focus on research that culminates in a dissertation.

The program is structured to be accessible for full and part-time students. Many of the courses are offered in a distance-learning format, allowing students to participate in class without having to travel to campus; visit Mason Online (http://masononline.gmu.edu) for details.

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Eligibility

Applicants should have a bachelor's degree in biology, computer science, or a related field, with a minimum GPA of 3.25 in the last earned degree. Applicants should have taken courses in molecular biology, cell biology, biochemistry, genetics, calculus, physical chemistry, computer programming and data structures, and probability and statistics. Students with deficiencies in one or more of these areas may be admitted provisionally and required to take additional courses, some of which may not be applicable to the degree's course total. Students whose undergraduate record does not include basic biochemistry will be required to take a basic course prior to BINF 701 Systems Biology.

Application Requirements

To apply, prospective students should submit the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), two copies of official transcripts from each college and graduate institution attended, a current résumé, and an expanded goals statement. Applicants should also include three letters of recommendation and an official report of scores obtained on the GRE general exam. Scores should be in the 45th percentile or above. The GRE requirement for admission to the doctoral program will be waived if the student holds a master's degree from a regionally accredited U.S. institution. TOEFL or IELTS scores are required of all international applicants.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Reduction of Credits

For students entering the doctoral program with a master's degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program director and the college's associate dean for student affairs. See AP.6.5.2 Reduction of Credits (p. 91) for more information.

Requirements

Degree Requirements

Total credits: 72

Students should refer to the Admissions & Policies (p. 793) tab for specific policies related to this program.

Doctoral Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 701</td>
<td>Systems Biology</td>
<td>3</td>
</tr>
<tr>
<td>BINF 702</td>
<td>Biological Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BINF 690</td>
<td>Numerical Methods for Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>BINF 705</td>
<td>Research Ethics</td>
<td>1</td>
</tr>
<tr>
<td>BINF 730</td>
<td>Biological Sequence and Genome Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BINF 731</td>
<td>Protein Structure Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BINF 740</td>
<td>Introduction to Biophysics</td>
<td>3</td>
</tr>
<tr>
<td>BINF 744</td>
<td>Colloquium in Bioinformatics</td>
<td>3</td>
</tr>
</tbody>
</table>

General Electives

Select 23-35 credits of approved general electives or independent research 23-35

Lab Rotation

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 703</td>
<td>Bioinformatics Lab Rotation (taken three times)</td>
<td>3</td>
</tr>
</tbody>
</table>

Colloquium

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 704</td>
<td>Colloquium in Bioinformatics (taken three times)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 48-60

Doctoral Committee and Advancement to Candidacy

By the end of the semester when coursework is completed, the student must form a doctoral committee made up of a minimum of three graduate faculty members and take a written comprehensive exam. The exam includes written and oral components. Upon passing the comprehensive exam and submitting an acceptable dissertation proposal, the student is advanced to doctoral candidacy to begin the dissertation writing phase.

Dissertation Research

A minimum of 12 and maximum of 24 combined credits from BINF 998 Doctoral Dissertation Proposal and BINF 999 Doctoral Dissertation may be applied toward satisfying doctoral degree requirements. Students must take at least 3 credits of BINF 999 Doctoral Dissertation.
**Doctoral Dissertation**

After advancing to doctoral candidacy, students work on their doctoral dissertation while enrolled in BINF 999 Doctoral Dissertation. The dissertation should represent a significant contribution that is suitable for publication in a refereed scientific journal. The dissertation must be defended in a public forum before the dissertation committee and other interested faculty.

**Biology, MS**

**Banner Code: SC-MS-BIOL**

**Ancha Baranova, Program Director**

312 Colgan Hall  
Science and Technology Campus  
Phone: 703-993-4263  
Email: biologygrad@gmu.edu  
Website: ssb.gmu.edu

This program provides advanced training for college graduates or professionals seeking careers in the biomedical research, biotechnology, neuroscience or biodefense, as well as evolutionary and animal biology, animal biology and biology teaching. Master’s level concentrations are available in microbiology and infectious disease, molecular biology, neuroscience, evolutionary biology, and translational and clinical research. Alternatively, students may choose the program in general biological sciences, which allows flexibility to build a degree program tailored to a specific research or career interest.

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

While each applicant’s qualifications are reviewed as a whole, the following are provided: Applicants to the program must have a bachelor’s degree in biology or its equivalent. Additionally, all MS concentrations require a GPA of 3.00 in biology coursework or in the last 60 credits of undergraduate study. Students must also submit three letters of recommendation and scores on the GRE general exam. Exam scores should be in the 45th percentile or above. Admission is contingent on acceptance by a faculty research advisor.

**Microbiology and Infectious Disease (MID) Concentration**

Students who choose the Microbiology and Infectious Disease Concentration (MID) must have a lecture and lab course in microbiology and a lecture course in biochemistry.

**Translational and Clinical Research (TCR) Concentration**

Students who choose the Translational and Clinical Research Concentration may submit MCAT scores in place of GRE general exam scores.

**Evolutionary Biology (EB) Concentration**

Students who choose the Evolutionary Biology Concentration must also submit a personal statement/statement of interest consistent with at least one faculty member’s research program. GRE score should be approximately 303.

**Policies**

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

**Requirements**

**Degree Requirements**

Total credits: 30

Students should refer to the Admissions & Policies (p. 794) tab for specific policies related to this program.

**Program of Study**

The faculty advisor and the student work together to develop a program of study that best fits the student’s background and interests. The student must submit a program of study to the program director for approval within the first 12 credits of coursework. By the end of the second semester of coursework, students will form a graduate committee made up of three faculty members. At least two committee members must be faculty in the School of Systems Biology (p. 786).

**Concentration Options**

Candidates for the Biology, MS (p. 794) focus their study in one of five approved concentrations below, or by completing coursework for the program in biological sciences in an area of study chosen in consultation with the student’s advisor and program director.

**Research Options**

Students have the option to complete a 3-6 credit master’s thesis (BIOL 799 Thesis) or a 1-3 credit research project (BIOL 798 Master’s Research Project). In accordance with AP6 Graduate Policies (p. 90), the same quality of work is expected of students regardless of which option they choose.

- **Thesis**: In general, the MS thesis is most appropriate for students planning or considering a research career. Students pursuing the thesis option must write a formal thesis that meets the requirements of the school and must defend their thesis and present their results in a public seminar.
- **Research Project**: The MS project is most appropriate for students who have scheduling commitments, such as a full-time job, that may preclude performing a complete series of laboratory experiments.
Students pursuing the project option must successfully complete written and oral comprehensive exams.

### MS without Concentration

Program in Biological Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select a Master's Thesis or Research Project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 799</td>
<td>Thesis</td>
<td>3-6</td>
</tr>
<tr>
<td>BIOL 798</td>
<td>Master's Research Project</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Research Methodology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 690</td>
<td>Introduction to Graduate Studies in Biology or BIOS 702 Research Methods</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Seminar**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 692</td>
<td>Seminar in Biology</td>
<td>2</td>
</tr>
<tr>
<td>or BIOL 695</td>
<td>Seminar in Molecular, Microbial, and Cellular Biology</td>
<td></td>
</tr>
</tbody>
</table>

**Research**

1-6

Select one from the following:

- BIOL 798 Master's Research Project
- BIOL 799 Thesis (3-6 credits)

**Electives**

19-26

Select 19–26 credits of electives in BIOL, BIOS, or related areas as approved by the student’s advisor and the program director.

- BIOL 553 Advanced Topics in Immunology
- BIOL 568 Advanced Topics in Molecular Genetics
- BIOL 575 Selected Topics in Genetics
- BIOL 579 Molecular Evolution and Conservation Genetics
- BIOL 583 General Biochemistry
- BIOL 585 Eukaryotic Cell Biology Laboratory
- BIOL 682 Advanced Eukaryotic Cell Biology
- BIOL 793 Research in Biology
- BIOS 740 Laboratory Methods in Functional Genomics and Biotechnology
- BIOS 741 Genomics
- BIOS 742 Biotechnology
- BIOS 743 Genomics, Proteomics, and Bioinformatics
- BIOS 744 Molecular Genetics
- BIOS 767 Molecular Evolution

**Total Credits:** 30

---

1 These courses are provided as suggestions only; this is not intended to be a comprehensive list of elective options. Note that two courses covering substantially similar topics may not both be counted in the student's program of study. Students should consult their faculty research advisor or the graduate program coordinator when preparing a program of study.

### MS with Concentration in Microbiology and Infectious Disease (MID)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 799</td>
<td>Thesis</td>
<td>3-6</td>
</tr>
<tr>
<td>BIOL 798</td>
<td>Master's Research Project</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Research Methodology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 690</td>
<td>Introduction to Graduate Studies in Biology or BIOS 702 Research Methods</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Core Biology**

12

Select four courses from the following:

- BIOL 553 Advanced Topics in Immunology
- BIOL 563 Virology
- BIOL 669 Pathogenic Microbiology
- BIOL 715 Microbial Physiology
- BIOL 718 Techniques in Microbial Pathogenesis

**Seminar**

2

BIOL 695 Seminar in Molecular, Microbial, and Cellular Biology

**Research**

1-6

Select one from the following:

- BIOL 798 Master's Research Project
- BIOL 799 Thesis (3-6 credits)

**Electives**

7-14

Select 7-14 credits from the following:

- BIOL 564 Techniques in Virology
- BIOL 553 Advanced Topics in Immunology
- BIOL 682 Advanced Eukaryotic Cell Biology
- BIOS 743 Genomics, Proteomics, and Bioinformatics
- BIOS 710 Current Topics in Bioscience
- Or relevant graduate level coursework selected in consultation with the advisor

**Total Credits:** 30

### MS with Concentration in Molecular Biology (MOB)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 799</td>
<td>Thesis</td>
<td>3-6</td>
</tr>
<tr>
<td>BIOL 798</td>
<td>Master's Research Project</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Research Methodology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 690</td>
<td>Introduction to Graduate Studies in Biology or BIOS 702 Research Methods</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Core Biology**

13

- BIOL 568 Advanced Topics in Molecular Genetics or BIOS 744 Molecular Genetics
- BIOL 583 General Biochemistry
- BIOL 682 Advanced Eukaryotic Cell Biology
- BIOS 579 Molecular Evolution and Conservation Genetics or BIOS 767 Molecular Evolution

**Bioinformatics**

3

Select one from the following:

- BIOL 580 Computer Applications for the Life Sciences
- BINF 630 Bioinformatics Methods
- BINF 634 Bioinformatics Programming
Molecular Techniques  2-4
Select 2-4 credits from the following:
- BIOL 585  Eukaryotic Cell Biology Laboratory
- BIOL 678  Cell-Based Assays
- BIOS 740  Laboratory Methods in Functional Genomics and Biotechnology

Special topics courses, such as BIOL 575 or BIOL 691, may also be approved for this requirement by the program director, but only in semesters in which they are primarily a laboratory course of at least two credits with substantial content of techniques in molecular biology.

Seminar  2
- BIOL 695  Seminar in Molecular, Microbial, and Cellular Biology

Research  1-6
Select one from the following:
- BIOL 798  Master’s Research Project
- BIOL 799  Thesis (3-6 credits)

Electives  0-8
Select 0-8 credits of electives in BIOL, BIOS, or related areas as approved by the student’s advisor and the program director.

- BIOL 553  Advanced Topics in Immunology
- BIOL 568  Advanced Topics in Molecular Genetics
- BIOL 575  Selected Topics in Genetics
- BIOL 579  Molecular Evolution and Conservation Genetics
- BIOL 583  General Biochemistry
- BIOL 585  Eukaryotic Cell Biology Laboratory
- BIOL 682  Advanced Eukaryotic Cell Biology
- BIOL 793  Research in Biology
- BIOS 740  Laboratory Methods in Functional Genomics and Biotechnology
- BIOS 741  Genomics
- BIOS 742  Biotechnology
- BIOS 743  Genomics, Proteomics, and Bioinformatics
- BIOS 744  Molecular Genetics
- BIOS 767  Molecular Evolution

Total Credits:  30

1  These courses are provided as suggestions only; this is not intended to be a comprehensive list of elective options. Note that two courses covering substantially similar topics may not both be counted in the student's program of study. Students should consult their faculty research advisor or the graduate program coordinator when preparing a program of study.

MS with Concentration in Neuroscience (NEUR)  2-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUR 600</td>
<td>Chemistry and the Brain</td>
</tr>
<tr>
<td>NEUR 601</td>
<td>Developmental Neuroscience</td>
</tr>
<tr>
<td>NEUR 602</td>
<td>Cellular Neuroscience</td>
</tr>
<tr>
<td>NEUR 603</td>
<td>Mammalian Neuroanatomy</td>
</tr>
<tr>
<td>NEUR 604</td>
<td>Ethics in Scientific Research</td>
</tr>
<tr>
<td>or BIOL 705</td>
<td>Research Ethics</td>
</tr>
<tr>
<td>NEUR 701</td>
<td>Neuroscience Laboratory</td>
</tr>
</tbody>
</table>

Seminar  2
Select 2 credits from the following:
- BIOL 695  Seminar in Molecular, Microbial, and Cellular Biology
- BIOS 704  Topics in Biosciences
- NEUR 709  Neuroscience Seminars

Research  1-6
Select one from the following:
- BIOL 798  Master’s Research Project
- BIOL 799  Thesis (3-6 credits)

Electives  2-11
Select 2-11 credits, suggested electives include but are not limited to the following:

- BIOL 566  Cancer Genomics
- BIOL 568  Advanced Topics in Molecular Genetics
- BIOL 583  General Biochemistry
- BIOL 666  Human Genetics Concepts for Health Care
- BIOL 682  Advanced Eukaryotic Cell Biology
- BINF 630  Bioinformatics Methods
- BINF 705  Research Ethics
- BIOS 741  Genomics
- BIOS 742  Biotechnology
- BIOS 743  Genomics, Proteomics, and Bioinformatics
- BIOS 744  Molecular Genetics
- NEUR 689  Topics in Neuroscience

Total Credits:  30

MS with Concentration in Evolutionary Biology (EB)  3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
</tr>
<tr>
<td>PSYC 611</td>
<td>Advanced Statistics</td>
</tr>
<tr>
<td>STAT 535</td>
<td>Analysis of Experimental Data</td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
</tr>
</tbody>
</table>

Research  1-6
Select one from the following:
- BIOL 798  Master’s Research Project
- BIOL 799  Thesis (3-6 credits)

Electives  2-11
Select 2-11 credits, suggested electives include but are not limited to the following:

- BIOL 566  Cancer Genomics
- BIOL 568  Advanced Topics in Molecular Genetics
- BIOL 583  General Biochemistry
- BIOL 666  Human Genetics Concepts for Health Care
- BIOL 682  Advanced Eukaryotic Cell Biology
- BINF 630  Bioinformatics Methods
- BINF 705  Research Ethics
- BIOS 741  Genomics
- BIOS 742  Biotechnology
- BIOS 743  Genomics, Proteomics, and Bioinformatics
- BIOS 744  Molecular Genetics
- NEUR 689  Topics in Neuroscience

Total Credits:  30
BIOL 692  Seminar in Biology
& BIOL 695  Seminar in Molecular, Microbial, and Cellular Biology

**Core Courses**  6-9
Select at least two courses from the following:
- BIOL 574  Population Genetics
- BIOL 579  Molecular Evolution and Conservation Genetics
- BIOL 648  Population Ecology

**Organismal Biology**  6-8
Select 6-8 credits from the following suggestions in consultation with an advisor and/or committee and the program director:
- BIOL 501  Microbial Diversity: An Organismal Approach
- BIOL 507  Selected Topics in Ecology
- BIOL 508  Selected Topics in Animal Biology
- BIOL 518  Conservation Biology
- BIOL 532  Animal Behavior
- BIOL 533  Selected Topics in Plant Biology
- BIOL 537  Ornithology
- BIOL 538  Mammalogy
- BIOL 539  Herpetology
- BIOL 543  Tropical Ecosystems
- BIOL 559  Fungi and Ecosystems
- BIOL 566  Cancer Genomics
- BIOL 572  Human Genetics
- BIOL 581  Estuarine and Coastal Ecology
- BIOL 582  Estuarine and Coastal Ecology Laboratory
- BIOL 643  Microbial Ecology
- EVPP 536  The Diversity of Fishes

**Molecular Techniques**  4-7
- EVPP 615  Molecular Environmental Biology II
- EVPP 515  Molecular Environmental Biology I 1

**Research**  1-6
Select one from the following:
- BIOL 798  Master’s Research Project
- BIOL 799  Thesis (3-6 credits)

**Electives**  0-10
Select 0-10 credits of suggested courses from the following, but other courses are allowed if approved by an advisor and/or committee and the program director:
- BIOL 508  Selected Topics in Animal Biology
- BIOL 518  Conservation Biology
- BIOL 537  Ornithology
- BIOL 538  Mammalogy
- BIOL 539  Herpetology
- BIOL 543  Tropical Ecosystems
- BIOL 553  Advanced Topics in Immunology
- BIOL 568  Advanced Topics in Molecular Genetics
- BIOL 575  Selected Topics in Genetics
- BIOL 572  Human Genetics
- BIOL 579  Molecular Evolution and Conservation Genetics

**Research Methodology**  1-3
- BIOL 690  Introduction to Graduate Studies in Biology
  or BIOS 702  Research Methods

**Seminar**  2
Select 2 credits from the following:
- BIOL 695  Seminar in Molecular, Microbial, and Cellular Biology
- BINF 704  Colloquium in Bioinformatics
- BIOL 508  Selected Topics in Animal Biology (when the topic is research and development related to biotechnology)

**Advanced Eukaryotic Cell Biology**  3
- BIOL 682  Advanced Eukaryotic Cell Biology

**Bioinformatics/Biostatistics**  3
- BINF 630  Bioinformatics Methods
  or STAT 535  Analysis of Experimental Data

**Human Genes, Cells and Tissues**  3
Select 3 credits from the following:
**Accelerated Master's**

**Biology, BS/Biology, Accelerated MS**

**Overview**
Qualified undergraduates may be admitted into an accelerated master's program and obtain both a Biology, BS (p. 648) and a Biology, MS (p. 794) within an accelerated time frame. Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of graduate work may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master's program and must then complete an additional 24 credits to receive the master's degree. All other master's degree requirements must be met, including a minimum of 18 credits taken for the master's after the bachelor's degree is complete.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

**Application Requirements**
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Application information for this accelerated master's program can be found on the School of Systems Biology's website (https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters).

Successful applicants will have an overall undergraduate GPA of at least 3.10. Additionally, they will have completed the following courses with a GPA of 3.00 or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 310</td>
<td>Biodiversity</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
</tbody>
</table>

Three letters of recommendation, including one from a prospective thesis or project advisor, are required.

**Accelerated Option Requirements**
At the beginning of the student's final undergraduate semester, students must submit a bachelor's/accelerated master's transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science's Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master's program in the semester immediately following conferral of the bachelor's degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals.
After completing 120 credits and all requirements for the bachelor's degree and filing the Graduation Intent Form, students are awarded a bachelor's degree. Accelerated master's students must then submit scores on the GRE to have the provisional qualifier removed. Ordinarily, students should receive a minimum combined score of 303 on the verbal and quantitative portions of the general test.

**Reserve Graduate Credit**

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree.

**Neuroscience, BS/Biology, MS**

**Overview**

Qualified undergraduates may be admitted into an accelerated master's program and obtain both a Neuroscience, BS (p. 781) and a Biology, MS (https://catalog.gmu.edu/colleges-schools/science/systems-biology/biology-ms) within an accelerated time frame. Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of graduate work may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master's program and must then complete an additional 24 credits to receive the master's degree. All other master's degree requirements must be met, including a minimum of 18 credits taken for the master's after the bachelor's degree is complete.

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (https://catalog.gmu.edu/admissions/graduate-policies) section of this catalog. Application information for this accelerated master's program can be found on the School of Systems Biology's website (https://ssb.gmu.edu/). Successful applicants will have an overall undergraduate GPA of at least 3.10. Three letters of recommendation, including one from a prospective thesis or project advisor, are required. Additionally, they will have completed the following courses with a GPA of 3.00 or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>3-4</td>
</tr>
<tr>
<td>or STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or PSYC 300</td>
<td>Statistics in Psychology</td>
<td></td>
</tr>
<tr>
<td>or MATH 352</td>
<td>Statistics</td>
<td></td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>5</td>
</tr>
<tr>
<td>or NEUR 327</td>
<td>Cellular, Neurophysiological, and Pharmacological Neuroscience</td>
<td></td>
</tr>
<tr>
<td>BIOL 310</td>
<td>Biodiversity</td>
<td>3</td>
</tr>
<tr>
<td>or NEUR 335</td>
<td>Molecular, Developmental, and Systems Neuroscience</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>General Genetics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
</tbody>
</table>

**Accelerated Option Requirements**

At the beginning of the student's final undergraduate semester, students must submit a bachelor's/accelerated master's transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science's Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master's program in the semester immediately following conferral of the bachelor's degree. Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals. After completing 120 credits and all requirements for the bachelor's degree and filing the Graduation Intent Form, students are awarded a bachelor's degree.

**Additional Requirements**

- Satisfactory performance in undergraduate coursework must be maintained.
- Satisfactory graduate-level performance in each approved graduate course taken while in undergraduate status (receiving a grade of B or better (3.0 or higher) in each course).
- Submission of documents to complete the master's application before the published deadline, including a goals statement and a resume. GRE scores are not required.
- Completion of undergraduate degree from George Mason University.
- Confirmation of a graduate faculty advisor.

**Biosciences, PhD**

**Banner Code:** SC-PHD-BIOS

**Kylene Kehn-Hall, Program Director**

312 Colgan Hall
Science and Technology Campus

Phone: 703-993-4263
Email: biologygrad@gmu.edu
Website: ssb.gmu.edu

This program is a research-oriented field of study that prepares students for significant contributions in academic or industrial settings. It is broken down into three concentrations: Cell and Molecular Biology, Microbiology and Infectious Disease, and Biocomplexity and Evolutionary Biology.

The academic component is a three-tiered structure. The first tier provides a set of core courses designed to advance research skills across all disciplines. The second tier comprises additional core courses and elective courses. The first two tiers are designed to be completed in approximately two years, including the comprehensive qualifying exam. Only on completion of these requirements, the qualifying exam, and a successful dissertation proposal can the students advance to candidacy status. The third tier focuses on research and culminates in a dissertation.
Admissions & Policies

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Application Requirements

The following are required of applicants to this program:

• Minimum 3.25 GPA in previous coursework with significant training in the biological sciences.
• Three letters of recommendation from faculty members or individuals who have firsthand knowledge of the applicant’s academic or professional capabilities.
• Statement of purpose consistent with the research interests of at least one faculty member in the program.
• Scores on GRE general exam (required) and biology or biochemistry subject exam (recommended) taken within the past five years prior to date of application submission. The GRE exam is waived if applicants hold a master’s Degree from a fully-accredited U.S. university at the time of their application.
• A TOEFL score of 575 on the paper-based exam or 230 on the computer-based exam is required of international students.

An interview may also be required. Applications should be submitted by January 1st for fall admission. Under unusual circumstances, applications may be considered for spring admission if they are received by October 1st. Applications will be considered until positions are filled. Students are encouraged to meet application deadlines to be considered for scholarships and stipends.

Strong candidates who lack several prerequisites may be admitted to provisional status. Removal from provisional status and continuation in the program is contingent on earning a GPA of 3.25 in the program’s fundamental courses, plus completion of missing prerequisites.

Students who have not taken a course in basic biochemistry will be required to complete one prior to BIOS 701 Systems Biology.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (p. 90).

Reduction of Credits

For students entering the doctoral program with a master’s degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the college’s associate dean for student affairs.

Transfer of Credit

Graduate credits taken previously and not used toward another degree may be transferred, subject to the approval of the advisor, the program director, and the associate dean. See AP.6.5 Credit by Exam, Reduction or Transfer (p. 91) for more information.

Requirements

Degree Requirements

Total credits: 72

Students should refer to the Admissions & Policies (p. 800) tab for specific policies related to this program.

Students in the doctoral program are required to present two research papers at a meeting or conference any time before graduation.

Doctoral Coursework

Bioscience Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 682</td>
<td>Advanced Eukaryotic Cell Biology</td>
<td>3</td>
</tr>
</tbody>
</table>

Six credits or two instances of

<table>
<thead>
<tr>
<th>BIOS 703</th>
<th>Laboratory Rotation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 704</td>
<td>Topics in Biosciences</td>
<td></td>
</tr>
</tbody>
</table>

Three credits of

Total Credits 12

Concentration in Cell and Molecular Biology (CMB)

This concentration prepares students for significant contributions in an academic or industrial research career. Coursework covers microarray analysis of gene expression, proteome analysis, sequencing and analysis of gene polymorphisms, gene and genome evolution, molecular studies of disease mechanisms, mechanisms of toxicology and mutagenesis, developmental neuroscience, and biotechnological applications.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 666</td>
<td>Human Genetics Concepts for Health Care</td>
<td></td>
</tr>
<tr>
<td>BIOS 702</td>
<td>Research Methods</td>
<td></td>
</tr>
<tr>
<td>BIOS 740</td>
<td>Laboratory Methods in Functional Genomics and Biotechnology</td>
<td></td>
</tr>
<tr>
<td>BIOS 741</td>
<td>Genomics</td>
<td></td>
</tr>
<tr>
<td>BIOS 742</td>
<td>Biotechnology</td>
<td></td>
</tr>
<tr>
<td>BIOS 743</td>
<td>Genomics, Proteomics, and Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>BIOS 767</td>
<td>Molecular Evolution</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Microbiology and Infectious Disease (MID)

Students in this concentration will be prepared for employment in academia, government, or industry. By stressing mechanisms of pathogenicity, physiology, metabolism, and genomic and proteomic analysis of pathogens, students will have a firm foundation for future research in infectious disease. Students will also be introduced to advanced laboratory practices, such as animal research methodologies and biocontainment laboratory work.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 553</td>
<td>Advanced Topics in Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 563</td>
<td>Virology</td>
<td></td>
</tr>
</tbody>
</table>
Concentration in Biocomplexity and Evolutionary Biology (BEB)

This concentration prepares students for careers in academia, government or industry. Through this concentration students will learn laboratory and quantitative skills that will enable them to investigate evolutionary relationships among organisms at the population, species or ecosystem level. Students will be encouraged to explore a wide range of coursework in order to develop a broad background in evolutionary biology and a deep knowledge of relevant methodologies necessary to keep abreast in this rapidly changing field.

The science of evolutionary biology is fundamentally concerned with documenting not only genetic change, but also the processes that cause it. Evolutionary biology includes paleobiology, population genetics, evolutionary ecology and phylogenetics. Biocomplexity is the study of living organisms, including their unique structural, chemical and genetic properties, their distribution and abundance in nature, and their evolutionary relationships to all other organisms. Given the fact that most of the earth’s biodiversity is unknown, collecting, cataloging and studying organisms have always been and will continue to be one of the most challenging aspects of biology.

Select 12 credits from the following:

- BIOL 574 Population Genetics
- BIOL 585 Eukaryotic Cell Biology Laboratory
- BIOS 716 Methods in Evolutionary Biology
- BIOS 767 Molecular Evolution

Total Credits 12

Electives

Select 23-36 credits from the following:

1. Students may take other courses related to their research topic if approved by their committee. Courses in Geographic Information Systems or Statistics are encouraged.

Dissertation Committee

Upon admission to the program, each student is assigned an advisor from the bioscience faculty. The advisor may be changed by mutual consent of student and advisor, or petition to the program director and associate dean. With their advisor, students adopt an individual program that focuses on a specific area of research.

By the end of the fourth semester of coursework, students assemble a dissertation committee of four graduate faculty members with representation from at least two academic departments. The faculty advisor and the program director approve the program of study.
Qualifying Examination
On nearing completion of course requirements, students take a qualifying exam with a written and an oral component. At the discretion of the committee, the written qualifying exam may be retaken once if the student’s performance was deemed below satisfaction.

Advancement to Candidacy
Upon successful completion of the qualifying exam, the majority of all coursework, and an accepted dissertation proposal, students will be recommended for advancement to candidacy by the committee and the program director.

The semester after advancement to candidacy, students are eligible to enroll in dissertation research (BIOS 999 Doctoral Dissertation Research). Students must review their progress on the dissertation with their graduate committee on a regular basis until graduation.

Dissertation Research
No more than 24 combined credits from BIOS 998 Doctoral Dissertation Proposal and BIOS 999 Doctoral Dissertation Research may be applied toward satisfying doctoral degree requirements. Students register for a minimum of 3 credits of BIOS 999 Doctoral Dissertation Research in the first semester of advancement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>12-24</td>
</tr>
<tr>
<td>BIOS 999</td>
<td>Doctoral Dissertation Research</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12-24

Doctoral Dissertation
After advancing to doctoral candidacy, students work with their dissertation committee to develop their dissertation proposal into a completed doctoral dissertation. The dissertation research should represent a significant contribution that is publishable in a refereed scientific journal. When the dissertation is complete, students will present their results to their graduate committee and defend their dissertation in a public forum.

Personalized Medicine Graduate Certificate
Banner Code: SC-CERG-PRSM

Academic Advising
312 Colgan Hall
Science and Technology Campus
Phone: 703-993-8400
Email: biologygrad@gmu.edu
Website: ssb.gmu.edu

This certificate is based upon a set of core courses that currently support the Biology, MS (p. 794); the Biosciences, PhD (p. 799); the Bioinformatics and Computational Biology, MS (p. 788); and the Bioinformatics and Computational Biology, PhD (p. 792) degree programs. Students completing this certificate will receive the most up-to-date advanced education available in the region. Completion of the certificate will enhance the careers of those students who are already working in this area, and can also serve as a useful intermediate step towards later enrollment in master's or doctoral programs.

Courses are generally offered in the late afternoon or in the evening to accommodate students with full-time employment outside of the university.

This certificate may be pursued on a part-time or full-time basis.

Admissions & Policies
Admissions
University-wide admissions policies can be found in the Graduate Admissions Policies (p. 68) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Prospective students should hold an undergraduate GPA of 3.00 or current employment in clinical or translational research, diagnostics lab, or biological data analysis field.

To be considered for admission, applicants must submit the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now), all undergraduate transcript(s), three letters of recommendation, and a statement of interest.

Policies
Students may not enroll initially in any College of Science master's or doctoral program and later transfer into this certificate program.

For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

Premium Tuition
This certificate charges students a differential tuition rate of $100 per credit hour, which is added to the standard graduate tuition rate (regardless of in or out of state status).

Requirements
Certificate Requirements
Total credits: 15

This certificate may be pursued on a full-or part-time basis.

Students should refer to the Admissions & Policies (p. 802) tab for specific policies related to this program.

Required Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 562</td>
<td>Personalized Medicine</td>
<td>9</td>
</tr>
<tr>
<td>BIOL 566</td>
<td>Cancer Genomics</td>
<td></td>
</tr>
<tr>
<td>BIOL 572</td>
<td>Human Genetics</td>
<td></td>
</tr>
<tr>
<td>or BIOL 666</td>
<td>Human Genetics Concepts for Health Care</td>
<td></td>
</tr>
<tr>
<td>BIOL 685</td>
<td>Emerging Infectious Diseases</td>
<td></td>
</tr>
</tbody>
</table>
Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 506</td>
<td>Selected Topics in Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 508</td>
<td>Selected Topics in Animal Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 553</td>
<td>Advanced Topics in Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 566</td>
<td>Cancer Genomics</td>
<td></td>
</tr>
<tr>
<td>BIOL 568</td>
<td>Advanced Topics in Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 575</td>
<td>Selected Topics in Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 583</td>
<td>General Biochemistry</td>
<td></td>
</tr>
<tr>
<td>BIOL 669</td>
<td>Pathogenic Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 682</td>
<td>Advanced Eukaryotic Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 685</td>
<td>Emerging Infectious Diseases</td>
<td></td>
</tr>
<tr>
<td>BIOL 691</td>
<td>Current Topics in Biology</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 695</td>
<td>Seminar in Molecular, Microbial, and Cellular Biology</td>
<td></td>
</tr>
<tr>
<td>BIOS 701</td>
<td>Systems Biology</td>
<td></td>
</tr>
<tr>
<td>BIOS 741</td>
<td>Genomics</td>
<td></td>
</tr>
<tr>
<td>BINF 630</td>
<td>Bioinformatics Methods</td>
<td></td>
</tr>
<tr>
<td>BINF 633</td>
<td>Molecular Biotechnology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Up to 4 credits of BIOL 693 and/or BINF 796.</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 6

Credit for these courses may only be applied toward the certificate's electives if the research topic is relevant to personalized or translational medicine.

College of Visual and Performing Arts

The mission of the College of Visual and Performing Arts (CVPA) is to advance the study, creation, performance, exhibition, and management of the arts, acting on the strong belief in their transformative influence on individuals and civilizations. Fusing the academic and the professional, the campus and the community, the past and the present, CVPA seeks to engage new art forms, populations, and ways of working to meet the needs of a changing world both inside and beyond the walls of the university. The College strives to ensure that Mason’s entire student population has the opportunity to experience and study the arts as a key component of a well-rounded liberal education.

Studying the arts goes hand in hand with creation, performance, and management. Each major features strong academic preparation in the history and theory of the art form in support of discipline-based technique courses. The college’s faculty of practicing artist-teachers-managers works closely with students in a variety of curricular and co-curricular creative projects. Once basic techniques are established, students are encouraged to stretch, grow, and experiment within this supportive environment, enhancing their experience as working artists and arts managers while enriching the cultural life of the campus community.

An education in the arts is deepened by regular contact with the work of distinguished visiting artists. The college is home to the Center for the Arts (http://cfa.gmu.edu) on the Fairfax campus and the Hylton Performing Arts Center (https://hyltoncenter.org) on the Science and Technology campus, both of which present diverse programs of cultural experiences for the entire university community, as well as Northern Virginia and the greater Washington, D.C., area. Artists from across the country and around the world regularly perform, give master classes, work with students during extended residencies, and interact with the community in a variety of other ways. The accessibility and vitality of the Concert Hall, Hylton Center, TheaterSpace, the School of Art Gallery, Johnson Center Cinema, Harris Theater, and other campus and regional venues provide an unparalleled educational experience in the arts.

Requirements & Policies

General Academic Policies

The requirements for each academic program offered by the college are described in the sections below. Students are ultimately responsible for their academic progress towards their degrees. All students are subject to the university’s general academic policies in addition to those specific to each academic unit.

Accommodations for Disabled Students

Students with documented disabilities should contact the Office of Disability Services (http://ods.gmu.edu) (Student Union I, Room 222; 703-993-2474) to open a file and learn more about accommodations that may be available to them.

Auditing

Students who wish to audit a course must obtain written permission from the instructor before registering for the class. Students do not receive grades or credit for audited courses. A student who audits a course does so for the purposes of self-enrichment and academic exploration and is not required to actively participate in class assignments, presentations, or exams. The course is offered only on a space-available basis with the approval of the instructor. It is expected that auditing students will respect all class rules and practices.

The Course Audit Form can be found on the Registrar's website (http://registrar.gmu.edu). The form must be submitted to the Office of the University Registrar by the last day to drop the course.

Note: A previously audited course may be taken again for credit in a later term. Students may also audit a course previously taken and passed; however, students may not change from credit to audit status nor from...
audit to credit status after the end of the drop period, as defined above. The usual tuition and fees apply to audit status.

Auditing Courses under the Senior Citizen Waiver Program
Under terms of the Senior Citizen Higher Education Act of 1974, eligible Virginia residents (requires legal domicile for one year) that are 60 years of age or older are entitled to enroll to audit (no academic credit received) up to three academic credit courses per semester and pay no tuition or fees, except fees established for the purpose of paying for course materials or laboratory fees.

For more information on policies and procedures, please refer to the Registrar’s website (https://registrar.gmu.edu/topics/senior-citizen-waiver).

E-mail
George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school/department/program and other administrative units, and check it regularly for important information.

Registration
Students are personally responsible for correctly registering for courses and paying all tuition and fees by the official university registration and payment deadlines. Instructors do not have the authority to add students to courses. All students should verify the accuracy of their enrollment before the end of the add and drop periods.

Questions about Academic Policies
Students with questions regarding exceptions to academic policies should contact the CVPA Academic Affairs Office (College Hall, C200; 703-993-4551).

Undergraduate Policies and Information
Degree Programs
The undergraduate degree consists of course work in the Mason Core (p. 142), a major area of study, and electives. To earn a bachelor’s degree, students must complete a minimum of 120 credits, of which at least 45 must be upper level courses (numbered 300 and above). At least one course at the 300 or 400 level must be designated “writing intensive.”

Academic Course Load
Undergraduate students earning degrees in CVPA may register for 18 credits per fall and spring semester without the dean’s permission. Students are advised that they will be required to pay additional tuition beyond the 16-credit, university full-time academic load. Students should be cognizant of the time commitment when they register for their courses, especially if they register for high numbers of credits. Students are urged to consult with their advisor and familiarize themselves with Mason guidelines for work and academic load. Students are reminded that employment must not take priority over course work.

Advising
Students are assigned advisors and are strongly encouraged to meet with them periodically, and particularly when they achieve 75 credits or are two semesters before expected graduation. Undeclared CVPA students and undergraduate students in academic difficulty (cumulative GPA under 2.00) are required to see an advisor prior to registration for the semester following registration restriction.

Minimum Cumulative GPA in Major
Undergraduate students earning CVPA degrees must earn a minimum 2.00 cumulative GPA in their major, or higher, if required by their program.

Foreign Language Requirement
Some degrees within CVPA require intermediate-level proficiency in one foreign language or the completion of a minor, double major or double degree. The foreign language requirement may be fulfilled by completing a course in a foreign language numbered 202, 209, or 210 (or higher level courses taught in the language) or achieving a satisfactory score on an approved proficiency test. International students should consult the CVPA Student Academic Affairs Office about a possible waiver of this requirement.

Leave of Absence
All undergraduate students who are planning an absence from George Mason must submit a formal request for Leave of Absence to the Office of the University Registrar. Students do not need to complete the Leave of Absence form if they are participating in a George Mason University sponsored study abroad program or have received permission to study elsewhere. The maximum time allowed for a Leave of Absence is two years. A new admission application will be required if a student is away for more than 2 academic years OR a Leave of Absence form was not submitted. Re-admission is not guaranteed. See AP.1.8 Undergraduate Leave of Absence (p. 81) for full university policy.

Mason Core Program
The baccalaureate degree requires students to take a range of courses that provide a broad knowledge of the world, develop the ability to think both conceptually and critically, acquaint them with many different methods of inquiry, and provide the skills to continue intellectual growth throughout their lives. Students select from a range of courses outlined in the Mason Core (p. 142) section. Students accepted into the Honors College fulfill some/all of their Mason Core (p. 142) requirements with completion of that program of study. Students are strongly advised to consult the University Mason Core (p. 142) page.

Minors
Some degrees within CVPA require a minor or intermediate-level proficiency in one foreign language. University policy states that students must earn 8 distinct credits toward their minor that are not used for their major. Some programs have more specific criteria for applying credits to a minor.

Physical Education Courses
Activity courses offered by the College of Education and Human Development cannot be counted toward credits required for a degree in CVPA. Students may take non-activity RECR courses for elective credit for CVPA degrees.

Prerequisites
Undergraduate students must earn a C or better in prerequisite courses to proceed to the next course.

Study Elsewhere
Students with fewer than 60 hours of transfer coursework (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education) may take up to 12 hours of coursework in CVPA disciplines at another institution. A student may seek permission for additional hours beyond these limits for summer registration if
his/her permanent residence is more than 50 miles from the George Mason University Fairfax campus. Students must obtain advance, written approval from the student’s dean and the course dean’s office. Students who enroll elsewhere without advance written permission while enrolled at Mason will not receive transfer credit for the course work taken at another institution unless they re-apply for admission to Mason as transfer applicants and meet all priority deadlines. Re-admission is not guaranteed and transfer credit is awarded based upon course equivalences in effect at the time of re-admission. Freshmen and transfer students in their first semester at Mason are not permitted to study elsewhere. Courses previously attempted at Mason (including withdrawals) cannot be taken elsewhere. Schools and Colleges have study elsewhere criteria for courses in their disciplines in addition to University policy. Students must be in good standing with a minimum cumulative GPA of 2.00 in their Mason courses. See AP.1.4.2 Permission to Study Elsewhere.

Transfer of Credit
Transfer students must resolve transfer credit issues within the first academic year of enrollment.

Undergraduate students may transfer a maximum of 18 credits earned in nondegree status at Mason.

Withdrawals
Students are responsible for all courses in which they remain officially enrolled once the drop period has ended.

Undergraduates enrolled in degree programs are eligible to withdraw from three classes through the ninth week (of a fifteen week semester) without dean’s approval and at the student’s own discretion during their entire undergraduate career at Mason. See AP.1.5.1 Selective Withdrawal (p. 81) for Undergraduates for further details.

Instructors do not have the authority to withdraw students from classes. Withdrawals other than Selective Withdrawals require the approval of the academic dean and are typically allowed only for full semesters at a time (all enrolled courses) and are only permitted for non-academic reasons. No withdrawals can be approved to avoid an unsatisfactory grade. When submitting a withdrawal request, students must provide original, verifiable, third-party documentation for the reason for the withdrawal. Requests for withdrawals should be submitted as early in the semester as possible, and never after the last day of classes.

Graduate Policies and Information
For items not listed below, please refer to the university’s policies: AP.6 Graduate Policies (p. 90).

Admissions
CVPA follows university policies for graduate admissions. Some programs ask for additional admissions requirements. Please refer to the program for a listing of all requirements.

All applicants, regardless of admission or not, will have their decision uploaded through their self-service center. Applicants will be notified that their decision is ready for their review via email to the address they provided at the point of application. Applicants will not be told decisions over the phone or in-person. Applicants who do not meet our minimum requirements (e.g., GPA, test scores, pre-screening requirements, portfolio requirements) may be issued a denial decision before their application is completed.

The College of Visual and Performing Arts does not offer an appeal process for admissions decisions. Applicants are welcome to file a new application for a future semester.

Graduate Programs
CVPA’s graduate programs offer highly focused study designed to prepare students for professional work in the arts and education. The requirements for each graduate degree are described under the program’s catalog entry.

Transfer of Credit
Graduate credit earned prior to admission to a certificate, master’s, or doctoral program may be eligible to be transferred and applied to a CVPA graduate program, certificate or doctoral degree. Please see AP.6.5.3 Transfer of Credit (p. 92) for more detailed information about the requirements.

Appeals Process
Appeals of Academic Procedures
See Appeals of Academic Procedures (p. 101) for University Policies.

CVPA Procedures for Grade Appeal
Although faculty members are generally the best judges of student performance in their classes, circumstances may cause a student to believe that a professor has made an unfair grade decision. Therefore, a Grade Appeal process has been established to ensure a fair hearing in such cases. Grade appeals are not accepted after the last day of classes for the following semester, as indicated in the Schedule of Classes (spring for fall grades, fall for spring and summer grades). The process for initiating and resolving a Grade Appeal is as follows:

1. The first step to resolve differences between an instructor and student concerning a grade should be a discussion with the instructor; this meeting should occur within two weeks of the student’s written request for a meeting; if the instructor is no longer affiliated with the University, the appeal is made to the Program Director.

2. If the instructor and student cannot resolve the issue, and the student wishes to pursue the matter further, he or she must present to the Program Director, a written appeal including the following: A description of the outcome of the informal discussion process. Any relevant documents the student would like to have reviewed as part of the appeal process. A copy of the course syllabus and assignment descriptions. Failing a satisfactory resolution, the student may appeal the grade by submitting a written appeal to the CVPA Academic Affairs Office. Undergraduate students will submit their request to the assistant dean; graduate students will submit their requests to the associate dean in the CVPA Academic Affairs Office.

The decision of the CVPA Assistant or Associate Dean is final.

CVPA Procedures for Appeal of an Academic Action
In exceptional circumstances a student may request a meeting to review the decision of an academic action.

1. The student must state in writing the reasons for requesting further appeal of an academic action, and provide any additional or new information relevant to the appeal.

2. The Assistant Dean (undergraduate)/Associate Dean (graduate) for Academic Affairs reviews all appeals.
3. The dean will conduct a review of the documentation provided by the student, and may request additional information in order to make an informed decision.

4. A nonparticipating observer of the student’s choice may attend the meeting with the dean, and the dean may also have a nonparticipating observer attend.

5. The student may follow University appeal procedures outlined in Appeals of Academic Procedures (p. 101).

**CVPA Procedure for Non-Academic Appeals or Grievance**

A student who intends to file a non-academic appeal, or intends to file a grievance against a faculty member, another student, or administrator undertakes the following steps:

1. The student meets with the professor and Program Director to discuss the non-academic appeal/grievance; this meeting should occur within two weeks of the student’s written request for a meeting; if the person is no longer affiliated with the University, the request is made to the Department or Program Director only.

2. The professor (Program Director) responds to the student within three days of the meeting.

3. If the student wishes to continue the non-academic appeal/grievance, the student must submit a written explanation to Academic Affairs Office. The Associate Dean reviews all non-academic appeals and grievances, and has the final decision for the college.

4. The student may follow additional University appeal procedures outlines in Appeals of Academic Procedures (p. 101).

**Academic Termination from an Undergraduate Program**

Termination from a major may be imposed as a result of excessive repeating of required courses without achieving the minimum standard, and for other evidence of continued failure to make adequate progress toward completion of the major. Some programs have specific criteria for termination from the major. See the program and AP5.2.4 Termination from the Major (p. 88).

**Academic Dismissal from an Undergraduate Program**

A third suspension results in academic dismissal from the university. See AP5.2.6 Academic Dismissal (p. 88) for details.

**Academic Dismissal from a Graduate Program**

The Office of the University Registrar contacts students via e-mail if they have earned an academic warning, or dismissal. Students wishing to appeal should contact the CVPA Graduate Programs Office within three days of the e-mail date. A deadline for the appeal documentation is determined, normally two weeks. Students are to submit:

1. A written statement explaining the circumstances that led to the dismissal, along with supporting documentation from employers, physicians, or other sources as necessary;

2. Evidence that the circumstances precipitating the unsatisfactory academic performance have been remedied;

3. Statement from department and program’s graduate coordinator supporting the student’s continued enrollment at the University.

Upon receipt of the above,

1. The Associate Dean of Academic Affairs reviews the appeal.

2. The final decision of the Associate Dean is forwarded to the student and the Office of the University Registrar.

3. The student may follow University appeal procedures outlined in Appeals of Academic Procedures (p. 101).

For these, and any other academic concerns, students are encouraged to contact George Mason University’s Ombudsman for Student Academic Affairs. The ombudsman is a neutral, independent, informal, and confidential party who provides assistance to students in resolving university-related concerns. The ombudsman is an advocate for fairness and the equitable treatment of students, operates independently of all formal grievance processes at the university, and considers all sides of an issue in an impartial and objective manner. The ombudsman has no authority to make exceptions or to grant requests but can perform informal investigations and, as a result, may recommend actions that lead to changes in processes and policies at the university. Meetings with the ombudsman are confidential. The ombudsman serves all undergraduate and graduate students at the university.

**Academic Units**

- Arts Management Program
- Computer Game Design Program
- Film and Video Studies Program
- School of Art
- School of Dance
- School of Music
- School of Theater

**Programs**

- Visual and Performing Arts, MFA

**Visual and Performing Arts, MFA**

Banner Code: AR-MFA-VPA

Asma Omarzad, Graduate Programs Manager

C211 College Hall
 Fairfax Campus

Phone: 703-993-9773
 Email: cvpagrad@gmu.edu
 Website: cvpa.gmu.edu/program/view/19515

The MFA in Visual and Performing Arts is a terminal degree which prepares students as professional artists and scholars who can work within their specialty and teach at the university level. Creative work and skill building are at the core of the study. The curriculum is designed for serious and talented students who are prepared to examine modes of creative inquiry in an inclusive, unique environment that promotes exploration, analysis, synthesis, and development as artists.

**Admissions & Policies**

**Admissions**

**Concentration in Dance**

The MFA in Visual and Performing Arts, concentration in Dance, is a highly selective 60-credit program of study grounded in the modern
dance genre that emphasizes mastery in performance, choreography, and teaching in higher education. Applicants must have significant (5 years or more) professional performance experience in modern or ballet at the national or international level. They must also demonstrate professional competence in choreography as exemplified by a significant body of work, and have experience teaching technique at the advanced level.

All MFA applicants are required to submit the following items:

- Online Application and Fee
- Official transcripts from each institution of higher education attended
- 3 letters of recommendation
- Resume
- Goals Statement

The following should be sent directly to the School of Dance via SlideRoom:

- 15-minute video of original choreography
- Artistic Goals Statement
- Resume
- Applicant must satisfy the following prerequisites: advanced dance technique, improvisation, dance composition, history, anatomy/kinesiology, and dance production. Prerequisite courses are usually fulfilled if the applicant has earned a BA or BFA in Dance.

Qualified students will be invited for an audition after review of application materials.

**Concentration in Graphic Design**

All MFA applicants are required to submit the following items:

- Online Application and Fee
- Official transcripts from each institution of higher education attended
- 3 letters of recommendation
- Resume
- Goals Statement

Additional Requirements for Concentration in Graphic Design:

- Portfolio
- Writing Sample: A critical and historical essay or academic paper on a design- (preferred) or art-related topic.

**Portfolio Guidelines**

The applicant’s portfolio is a major selection criterion for graduate admission and should represent the applicant’s most accomplished work.

The portfolio and all other application materials should be submitted to the Office of Graduate Admissions. For more information, contact the School of Art office at 703-993-8898.

Portfolios should include 20 samples of design work submitted through SlideRoom. Samples must be labeled with: name of artist, title, and date. Videos and Flash files (no more than 4 minutes for each section) must be playable through SlideRoom. In the case of collaborative work, the applicant’s role should be clearly stated.

**Concentration in Theater**

Theater MFA students are admitted to a specific emphasis: acting, design & technology, directing, musical theater, or playwriting & dramaturgy.

Specific programs of study will be designed for each individual, based on previous experience and expertise.

**Admissions Requirements**

All MFA applicants are required to submit the following items:

- Online Application and Fee
- Official transcripts from each institution of higher education attended
- 3 letters of recommendation
- Resume
- Goals Statement

Additional requirements for concentration in Theater:

- Portfolio
- Interview or Audition

Diversity among students accepted for study is another consideration. Applicants with degrees in areas other than Theater are welcome, although they may be required to complete undergraduate endorsement core courses. Details available on School of Theater website.

**Portfolio Guidelines**

The applicant’s portfolio is a major selection criterion for graduate admission and should represent the applicant’s most accomplished work. The portfolio and all other application materials should be submitted to the Office of Graduate Admissions. For more information, contact the School of Theater office at 703-993-1120.

Portfolio requirements are different for each graduate area of emphasis and are listed below. Incomplete portfolios will not be considered. Applicants’ portfolio items are considered part of their application for admission and, thus, cannot be returned. Please do not send original materials.

**Portfolio Requirements by Area of Emphasis**

**Design & Technology**

One fully documented design in your area of emphasis (i.e. lighting, sound, scenery, costume, etc.). This may include: script analysis, research, renderings, paperwork, drafting, diagrams, sound clips and photographs of the production. Additional examples of design work and artistic vision may also be submitted. Guidelines available on School of Theater website.

**Playwriting & Dramaturgy**

One to three writing samples, totaling no more than 25 pages. Playwrights should submit a one-page synopsis and dialogue sample. Dramaturgs may submit essays, reviews, or articles written for the general public, along with a cover letter addressing key areas of interest in the field. Guidelines available on School of Theater website.

**Directing**

Applicants for the MFA with an emphasis in Directing must submit both a portfolio of produced work, as well as a directorial analysis of a play or opera. For the latter, include at least six visual images with annotation that support your ideas. Guidelines available on School of Theater website.

**Acting and Music Theater Performance**

A three page written character analysis of one of the roles to be presented at auditions. Guidelines available on School of Theater website. Please see audition requirements.
Audition Requirements

Acting
Applicants for the MFA with an emphasis in Acting must complete an audition for the program. Applicants should be prepared with three contrasting monologues. Two monologues will be required for the audition, and a third may be requested should additional material be needed. Please prepare both classical and contemporary work. Auditors will be looking for range, transformational potential, and vocal and physical expressiveness.

Musical Theater
Applicants for the MFA with an emphasis in Musical Theater must complete an audition for the program. Applicants should be prepared with two songs and two monologues. Contrast between the pieces is essential. Please prepare both classical and contemporary work. Auditors will be looking for musical ability, range, transformational potential, vocal and physical expressiveness, dance and movement skills, and emotional honesty through text and song. An accompanist may be provided and requires a cash fee on the day of audition. This includes a brief rehearsal prior to appointment time. Those auditioning may provide their own accompanist.

Concentration in Visual Art
All MFA applicants are required to submit the following items:

- Online Application and Fee
- Official transcripts from each institution of higher education attended
- 3 letters of recommendation
- Resume
- Goals Statement

Additional Requirements for Concentration in Visual Arts:

- Portfolio

Portfolio Guidelines
The applicant’s portfolio is a major selection criterion for graduate admission and should represent the applicant’s most accomplished work.

The portfolio and all other application materials should be submitted to the Office of Graduate Admissions. For more information, contact the School of Art office at 703-993-8898.

Portfolio requirements are different for each graduate area of emphasis and are listed below. Incomplete portfolios will not be considered.

Portfolio Requirements by Area of Emphasis

InterArts
20 images submitted through SlideRoom. Samples must be labeled with: name of artist, title and date. Videos and Flash files (no more than four minutes for each section) must be playable through SlideRoom. In the case of collaborative work, the applicant’s role should be clearly stated. If writing-based materials are submitted, they should be submitted in printed form.

New Media Arts
20 images submitted through SlideRoom. Samples must be labeled with: name of artist, title and date. Videos and Flash files (no more than four minutes for each section) must be playable through SlideRoom. Only the relevant parts of the video should be marked for viewing, with the applicant’s role clearly stated.

Painting and Drawing
20 images submitted through SlideRoom. Samples must be labeled with: name of artist, title and date.

Photography
20 images submitted through SlideRoom. Samples must be labeled with: name of artist, title and date.

Printmaking
20 images submitted through SlideRoom. Samples must be labeled with: name of artist, title and date.

Sculpture
20 images submitted through SlideRoom. Samples must be labeled with: name of artist, title and date.

Policies

Program Requirements
Candidates are required to complete 60 credits, of which 30 are made up from core requirements. An additional 30 credits are based on concentration area and comprehensive experience.

MFA concentrations include:

- Dance
- Graphic Design
- Theater
- Visual Art

While the faculty anticipate that students will work through their coursework as described in this catalog, individuals with extensive professional accomplishment may craft an individualized program that meets curricular requirements. Individualized programs require the recommendation of the Graduate Committee within the student’s respective school as well as the approval of the CVPA Associate Dean.

Requirements

Degree Requirements
Total credits: 60

Students should complete all requirements within the concentration to which they have been admitted. Candidates are required to complete 60 credits, of which 30 are made up from core requirements. An additional 30 credits are based on concentration area and comprehensive experience.

Concentration in Dance (DANC)
The MFA in Visual and Performing Arts, concentration in Dance, is a highly selective 60-credit program of study grounded in the modern dance genre that emphasizes mastery in performance, choreography, and teaching in higher education.

Core Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 600</td>
<td>Research Methodologies</td>
<td>3</td>
</tr>
<tr>
<td>DANC 501</td>
<td>Graduate Dance Seminar</td>
<td></td>
</tr>
</tbody>
</table>
Writing Seminar
AVT 621  Art Writing Seminar 3

Advanced Aesthetics
DANC 598  Philosophy and Aesthetics of Dance 3

Studies in History/Theory/Contemporary Trend
DANC 615  Contemporary Trends 3

Teaching Practicum
DANC 627  Advanced Teaching Seminar 3

Directed Reading
AVT 796  Directed Reading 1

Project
Six credits of 6
DANC 798  Directed Choreography/Project

Thesis
Six credits of 6
DANC 799  Thesis

Total Credits 30

Concentration Requirements
Code  Title  Credits
DANC 510  Contemporary Movement Theories 3
DANC 560  Advanced Choreography 3
Three credits of 3
DANC 570  Advanced Dance Performance
DANC 571  Residency Workshop 3
Three credits of 3
DANC 790  Internship
DANC 672  Dance Production 3
Select 12 credits from the following: 12
DANC 525  Advanced Modern Dance (must be taken for a minimum 6 credits)
DANC 545  Advanced Ballet (must be taken for a minimum 3 credits)

Total Credits 30

Concentration in Graphic Design (GD)
The MFA in Visual and Performing Arts, concentration in Graphic Design offers students a comprehensive study and preparation for the graphic design profession. The program includes courses in typography, web design, image making, and brand design, as well as prepares students for an academic career in Graphic Design. The broad range of study is intended to develop professionals prepared for an ever-expanding graphic design field.

Core Degree Requirements
Code  Title  Credits
Research Methods
Four credits of 4
AVT 519  Special Topics in Graphic Design
Graduate Seminar
Five credits of 5
AVT 611  Graduate Design Seminar
Writing Seminar
AVT 617  Advanced Typography 4
Advanced Aesthetics
AVT 613  Experiential Design History 3

Studies in History/Theory/Contemporary Trend
AVT 618  Visual Communication Theories 2

Teaching Practicum
Two credits of 2
AVT 670  Teaching Practicum

Directed Reading
AVT 796  Directed Reading 1

Project
Six credits of 6
AVT 798  Directed Project and Exhibition (6 credits) 1

Thesis
Three credits of 3
AVT 799  Thesis 1

Total Credits 30

1 Involves a study of the historical basis for a studio project; an independent creative production suitable for public viewing; and a written thesis documenting the evolution of the creative problem and exploring the intention, purpose, and relative success of the finished project.

Concentration Requirements
Code  Title  Credits
Select 10 - 14 credits from the following: 10-14
AVT 519  Special Topics in Graphic Design
AVT 614  Brand Identity Design
AVT 619  Advanced Web Design
Select 0 - 4 credits from the following: 0-4
AVT 596  Independent Study
AVT 599  Special Topics in Art and Visual Technology
Other graduate studio courses as approved by director
AVT 641  Graduate Graphic Design I 4
AVT 646  Graduate Graphic Design II 4
AVT 647  Advanced Graduate Graphic Design I 4
AVT 648  Advanced Graduate Graphic Design II 4

Total Credits 30

Concentration in Theater (THR)
The MFA in Visual and Performing Arts, concentration in Theater, is a terminal degree that prepares students to become professional artists, work in theater or arts-related fields, and teach at the university level.

Core Degree Requirements
Code  Title  Credits
Research Methods
AVT 600  Research Methodologies 3
Graduate Seminar
Two credits of 2
THR 591  Graduate Seminar
Writing Seminar
THR 652  Writing Seminar 3
Advanced Aesthetics

Total Credits 30
AVT 621  Art Writing Seminar 3

**Studies in History/Theory/Contemporary Trend**
Six credits of 6
- THR 651  Advanced Dramatic Theory and Criticism

**Teaching Practicum**
THR 655  Teaching Practicum 3

**Directed Reading**
THR 796  Directed Reading 1

**Project**
THR 797  Project Preparation 6
& THR 798  and Project Practicum

**Thesis**
THR 799  Thesis (3 credits) 3

**Total Credits** 30

**Concentration Requirements for All Emphases**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>THR 539</td>
<td>Aesthetics for the Theater</td>
<td>3</td>
</tr>
<tr>
<td>THR 551</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>THR 560</td>
<td>Advanced Script Analysis</td>
<td>3</td>
</tr>
<tr>
<td>THR 691</td>
<td>Professional Development</td>
<td>1</td>
</tr>
<tr>
<td>THR 790</td>
<td>Directed Research</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 12

**Track Requirements**
In each area of emphasis, students must pick either a professional or academic track. Students in the professional track will complete at least three additional credits in practical production experience over and above the core in the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 694</td>
<td>Graduate Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>THR 696</td>
<td>Advanced Acting Practicum</td>
<td></td>
</tr>
<tr>
<td>THR 697</td>
<td>Advanced Playwriting and Dramaturgy Practicum</td>
<td></td>
</tr>
<tr>
<td>THR 698</td>
<td>Advanced Directing Practicum</td>
<td></td>
</tr>
<tr>
<td>THR 699</td>
<td>Advanced Design Practicum</td>
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</tr>
</tbody>
</table>

**Total Credits** 3

Students in the academic track will complete at least three additional credits in practical teaching over and above the core in the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>THR 755</td>
<td>Academic Track Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 3

**Emphasis Requirements**
With the approval of their mentor, students will have the flexibility to select courses from Emphasis areas:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 15 credits from the following:</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

**Acting Emphasis:**
- THR 525  Advanced Musical Theater Workshop
- THR 590  Special Topics for Graduate Study

**Design & Technology Emphasis:**
- THR 530  Topics in Theater Design
- THR 590  Special Topics for Graduate Study
- THR 599  Independent Study
- THR 630  Design Mentorship
- THR 694  Graduate Field Experience
- THR 699  Advanced Design Practicum
- AMGT 602  Seminar in Arts Management
- AMGT 609  Performing Arts Management
- AMGT 706  Festivals and Special Events
- AMGT 752  Arts Entrepreneurship
- GAME 635  Issues in Interactive Entertainment
- GAME 650  Advanced Music and Sound for Games
- AVT 682  Experimental 2D Animation
- AVT 686  Experimental 3D Animation
- AVT 687  Advanced Topics: New Media
- AVT 688  Hybrid Animation
- FAVS 565  Documentary Filmmaking
- FAVS 575  Fiction Film Directing
- FAVS 599  Special Topics

**Directing Emphasis:**
- THR 540  Directing Techniques
- THR 590  Special Topics for Graduate Study
- THR 599  Independent Study
- THR 640  Directing Mentorship
- THR 694  Graduate Field Experience
- THR 698  Advanced Directing Practicum
- THR 755  Academic Track Practicum
- FAVS 565  Documentary Filmmaking
- FAVS 575  Fiction Film Directing
- FAVS 599  Special Topics

**Musical Theater Emphasis:**
- THR 525  Advanced Musical Theater Workshop
- THR 590  Special Topics for Graduate Study
- THR 599  Independent Study
- THR 610  Acting Mentorship
- THR 620  Acting Techniques
- THR 694  Graduate Field Experience
- THR 696  Advanced Acting Practicum
- THR 755  Academic Track Practicum
- MUSI 621  Graduate Applied Music
- MUSI 688  Opera and Musical Theater Ensemble
- MUSI 699  Independent Study

**Playwriting & Dramaturgy Emphasis:**
- THR 571  Advanced Playwriting Workshop
- THR 590  Special Topics for Graduate Study
- THR 599  Independent Study
Concentration in Visual Art (VART)

The MFA in Visual and Performing Arts, concentration in Visual Arts, is a terminal degree that prepares students to become professional artists, work in technology or arts-related fields, and teach at the university level. Students select an emphasis in one of the following: New Media, Painting and Drawing, Photography, Printmaking, Sculpture, or InterArts. Students have the opportunity to combine art forms in projects that may be installation, performance, publishing, time-based, or writing-based, and combine creative and critical approaches in their work.

Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Research Methods</td>
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<tr>
<td>AVT 600</td>
<td>Research Methodologies</td>
<td>3</td>
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<tr>
<td></td>
<td>Graduate Seminar</td>
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<tr>
<td>Six credits of</td>
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<td>6</td>
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<tr>
<td>AVT 610</td>
<td>Graduate Seminar</td>
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<td>Writing Seminar</td>
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<td>AVT 621</td>
<td>Art Writing Seminar</td>
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<tr>
<td></td>
<td>Advanced Aesthetics</td>
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<tr>
<td>AVT 507</td>
<td>Advanced Aesthetics</td>
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<tr>
<td>or AVT 599</td>
<td>Special Topics in Art and Visual Technology</td>
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<tr>
<td></td>
<td>Studies in History/Theory/Contemporary Trend</td>
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<tr>
<td>AVT 620</td>
<td>Theory, Criticism, and the Arts</td>
<td>3</td>
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<td></td>
<td>Teaching Practicum</td>
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<tr>
<td>Two credits of</td>
<td></td>
<td>2</td>
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<tr>
<td>AVT 670</td>
<td>Teaching Practicum</td>
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<td></td>
<td>Directed Reading</td>
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<td></td>
<td>Project</td>
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<td>Six credits of</td>
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<tr>
<td>AVT 798</td>
<td>Directed Project and Exhibition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thesis</td>
<td></td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AVT 799</td>
<td>Thesis</td>
<td></td>
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<tr>
<td>Total Credits</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Note:

AVT 796 Directed Reading/AVT 798 Directed Project and Exhibition/AVT 799 Thesis involves a study of the historical basis for a studio project; an independent creative production suitable for public viewing; and a written thesis documenting the evolution of the creative problem and exploring the intention, purpose, and relative success of the finished project.

Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td></td>
<td>Select 8 credits from the following:</td>
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<tr>
<td>AVT 596</td>
<td>Independent Study</td>
<td></td>
</tr>
</tbody>
</table>

Note:

AVT 796 Directed Reading/AVT 798 Directed Project and Exhibition/AVT 799 Thesis involves a study of the historical basis for a studio project; an independent creative production suitable for public viewing; and a written thesis documenting the evolution of the creative problem and exploring the intention, purpose, and relative success of the finished project.

Areas of Emphasis

InterArts

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 16 credits of any 500 - 600 level AVT course as approved by the division director. InterArts graduate students may combine courses from studio areas of emphasis (as indicated below) and work with faculty to design an interdisciplinary thesis project.</td>
<td>16</td>
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Total Credits 16

New Media Art

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Select four from the following courses:</td>
<td>16</td>
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</tr>
<tr>
<td>AVT 616</td>
<td>Advanced Art and Interactivity</td>
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</tr>
<tr>
<td>AVT 676</td>
<td>Graduate Sound Art</td>
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</tr>
<tr>
<td>AVT 682</td>
<td>Experimental 2D Animation</td>
<td></td>
</tr>
<tr>
<td>AVT 684</td>
<td>Advanced Image Making</td>
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<tr>
<td>AVT 685</td>
<td>Video Art</td>
<td></td>
</tr>
<tr>
<td>AVT 686</td>
<td>Experimental 3D Animation</td>
<td></td>
</tr>
<tr>
<td>AVT 687</td>
<td>Advanced Topics: New Media</td>
<td></td>
</tr>
<tr>
<td>AVT 688</td>
<td>Hybrid Animation</td>
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Total Credits 16

Painting and Drawing

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
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<tr>
<td>Select four courses from the following:</td>
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<tr>
<td>AVT 522</td>
<td>Drawing V</td>
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<tr>
<td>AVT 523</td>
<td>Drawing VI</td>
<td></td>
</tr>
<tr>
<td>AVT 599</td>
<td>Special Topics in Art and Visual Technology (Must be approved by advisor)</td>
<td></td>
</tr>
<tr>
<td>AVT 622</td>
<td>Advanced Drawing</td>
<td></td>
</tr>
<tr>
<td>AVT 632</td>
<td>Graduate Painting I</td>
<td></td>
</tr>
<tr>
<td>AVT 633</td>
<td>Graduate Painting II</td>
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<tr>
<td>AVT 634</td>
<td>Advanced Graduate Painting I</td>
<td></td>
</tr>
<tr>
<td>AVT 635</td>
<td>Advanced Graduate Painting II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 16

Photography

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 652</td>
<td>Graduate Photography I</td>
<td>4</td>
</tr>
<tr>
<td>AVT 653</td>
<td>Graduate Photography II</td>
<td>4</td>
</tr>
<tr>
<td>AVT 654</td>
<td>Advanced Graduate Photography I</td>
<td>4</td>
</tr>
<tr>
<td>AVT 655</td>
<td>Advanced Graduate Photography II</td>
<td>4</td>
</tr>
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</table>

Total Credits 16
Printmaking

<table>
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<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>AVT 642</td>
<td>Graduate Printmaking I</td>
<td>4</td>
</tr>
<tr>
<td>AVT 643</td>
<td>Graduate Printmaking II</td>
<td>4</td>
</tr>
<tr>
<td>AVT 644</td>
<td>Advanced Graduate Printmaking I</td>
<td>4</td>
</tr>
<tr>
<td>AVT 645</td>
<td>Advanced Graduate Printmaking II</td>
<td>4</td>
</tr>
<tr>
<td>Total Credits</td>
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</tr>
</tbody>
</table>

Sculpture

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 662</td>
<td>Graduate Sculpture I</td>
<td>4</td>
</tr>
<tr>
<td>AVT 663</td>
<td>Graduate Sculpture II</td>
<td>4</td>
</tr>
<tr>
<td>AVT 664</td>
<td>Advanced Graduate Sculpture I</td>
<td>4</td>
</tr>
<tr>
<td>AVT 665</td>
<td>Advanced Graduate Sculpture II</td>
<td>4</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

Note:
Mason does not guarantee the availability of these courses every semester; some are offered in alternate years.

Arts Management Program

3434 N. Washington Boulevard
Arlington, VA 22201

Phone: 703-993-8926
Website: artsmanagement.gmu.edu

Undergraduate Program
Arts Management Minor

The field of visual and performing arts offers many career paths that rely on a strong foundation in one or more art forms and require specific knowledge and skills in administration and management. The minor in arts management is open to all CVPA majors as well as art history majors. All other students must complete 9 credits of arts-related course work to be eligible for this minor.

Graduate Program
MA in Arts Management

The MA in Arts Management responds to a growing demand for graduates who can manage and coordinate the arts, bridging the worlds of performing and visual arts with applied managerial skills. The Washington, D.C., region is home to one of the nation's largest concentrations of arts organizations. The demand for arts managers with skills in financial and budgetary management, strategic management and entrepreneurship, and public relations, including marketing and advertising, has arguably never been more acute. The need for arts managers with skills in philanthropy, fund raising, and ongoing relationship management in the private and public arts sectors also continues to grow at a fast pace.

The MA in Arts Management is a 36-credit program of study that provides a core curriculum in the fundamentals of arts management. Students complete a 24-credit core and then select 9 credits of approved elective courses. Students also take an internship, which affords an in-depth opportunity to work with professionals in the field. The internship provides the opportunity to work at more than 60 different visual and performing arts venues in Washington, D.C., as well as national and international locations.

Faculty

Program Director
Aimee Fullman

Professor
Reeder

Associate Professors
Rosenstein

Assistant Professors
Cissna, Fullman (Program Director)

Adjunct Faculty
Berardelli, Corbett, Curtain, Damer, Garfinkle, Hanna, Huschle, Kamara, Kennedy, MacKay, Johnson, Rosenfeld, Salmon, Smyers, Thompson

Requirements & Policies

Requirements
Admissions

The program is geared toward those with a passion for the arts. Diversity among applicants is anticipated and sought, and candidates are evaluated on a case-by-case basis. Work experience is strongly preferred. It is anticipated that some students will come from the arts community, with experience and training in music, dance, theater, visual and technical arts and wish to add the skills of marketing, finance, strategy, fundraising, entrepreneurship, and management to their repertoire. It is also expected that some students will enter with more developed skills in business and wish to unite these skills with prior experiences in the arts.

For admissions requirements and deadlines, applicants should visit the graduate admissions page of the Arts Management website (http://artsmanagement.gmu.edu).

Programs

• Arts Management Minor
• Arts Management, MA

Arts Management Minor

Banner Code: AMGT

C211 College Hall
Fairfax Campus
Phone: 703-993-8926
Email: amgmt@gmu.edu
Website: http://artsmanagement.gmu.edu/overview/arts-management-minor-2/
The fields of visual and performing arts offer many career paths that rely on a strong foundation in one or more art forms and require specific knowledge and skills in administration and management. The minor is open to all CVPA majors (p. 806) as well as art history majors (p. 394). All other students must complete 9 credits of arts-related course work to be eligible for this minor.

Faculty
Aimee Fullman, Program Director

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor, with a minimum 2.00 GPA earned in all courses applied to the minor. For policies governing all minors, see APS.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMGT 405</td>
<td>Seminar in Arts Management</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 410</td>
<td>Arts Advocacy and Community</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 489</td>
<td>Internship in Arts Management</td>
<td>3-4</td>
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<tr>
<td></td>
<td>Total Credits</td>
<td>9-10</td>
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</tbody>
</table>

Mini-Courses

Select 2-3 credits from the following:

- AMGT 402 Professional Development
- AMGT 471 Introduction to Grant Writing
- AMGT 472 Technology in the Arts

Total Credits: 2-3

Electives

Select 6 credits from the following:

- AVT 307 Aesthetics
- AVT 309 Art as Social Action
- DANC 390 Dance History I (Mason Core) (p. 142)
- DANC 391 Dance History II (Mason Core) (p. 142)
- GAME 230 History of Computer Game Design
- THR 201 Stage Management
- THR 202
- THR 203
- THR 355 Moral Vision in American Theater
- THR 359 World Stages (Mason Core) (p. 142)
- THR 395 Theater as the Life of the Mind (Mason Core) (p. 142)
- AVT 392
- AVT 395 Writing for Artists

The Arts Management, MA responds to a growing demand for graduates who can manage and coordinate the arts, bridging the worlds of performing and visual arts with applied managerial skills. The Washington, D.C., region is home to one of the nation’s largest concentrations of arts organizations. The demand for arts managers with skills in financial and budgetary management, strategic management and entrepreneurship, and public relations, including marketing and advertising, has arguably never been more acute. The need for arts managers with skills in philanthropy, fund raising, and ongoing relationship management in the private and public arts sectors also continues to grow at a fast pace.

The Arts Management, MA provides a core curriculum in the fundamentals of arts management. Students complete a 24-credit core and then select 9 credits of approved elective courses. Students also take an internship, which affords an in-depth opportunity to work with professionals in the field. The internship provides the opportunity to work at more than 60 different visual and performing arts venues in Washington, D.C., as well as national and international locations.
Admissions & Policies

Admissions

Admissions Requirements
The program is geared toward those with a passion for the arts. Diversity among applicants is anticipated and sought, and candidates are evaluated on a case-by-case basis. Work experience is strongly preferred. It is anticipated that some students will come from the arts community, with experience and training in music, dance, theater, visual and technical arts and wish to add the skills of marketing, finance, strategy, fundraising, entrepreneurship, and management to their repertoire. It is also expected that some students will enter with more developed skills in business and wish to unite these skills with prior experiences in the arts. Completed applications must be received by February 15 for fall and October 1 for spring.

In addition to meeting general requirements for university admission for graduate study, applicants must submit the following items:

- Official undergraduate transcripts listing a four-year bachelor’s degree from an accredited institution with a minimum GPA of 3.00
- Resume
- Two letters of recommendation from faculty members or individuals who have first-hand knowledge of the applicant’s academic or professional capabilities
- A two-page (maximum) statement of intent and goals
- Portfolio that demonstrates work experience (optional)
- Applicants may be interviewed by at least one member of the program faculty or Admissions Committee

Policies
Please see College of Visual and Performing Arts (p. 803) for college academic policies.

Requirements

Degree Requirements
Total credits: 36

Core Requirements
Elective courses at the 600 or higher course level may be taken only after a candidate has completed and/or registered for at least 12 core course credits. Students are required to successfully complete AMGT 602 Seminar in Arts Management within their first 12 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMGT 601</td>
<td>Fund Raising/Development I</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 602</td>
<td>Seminar in Arts Management</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 603</td>
<td>Arts and Society</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 604</td>
<td>Public Relations and Marketing Strategies for the Arts I</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 606</td>
<td>Governance and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 704</td>
<td>Finance and Budgeting for Arts I</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 705</td>
<td>Finance and Budgeting for Arts II</td>
<td>2</td>
</tr>
<tr>
<td>AMGT 710</td>
<td>Arts Policy</td>
<td>3</td>
</tr>
<tr>
<td>AMGT 795</td>
<td>Capstone in Arts Management</td>
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Internship

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AMGT 742</td>
<td>Internship I</td>
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</table>

Total Credits 24

Electives

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMGT 504</td>
<td>Professional Development Arts Management</td>
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</tr>
<tr>
<td>AMGT 511</td>
<td>Introduction to Grant Writing</td>
<td></td>
</tr>
<tr>
<td>AMGT 513</td>
<td>Technology in the Arts</td>
<td></td>
</tr>
<tr>
<td>AMGT 599</td>
<td>Special Topics in Arts Management</td>
<td></td>
</tr>
<tr>
<td>AMGT 609</td>
<td>Performing Arts Management</td>
<td></td>
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<tr>
<td>AMGT 610</td>
<td>Visual Arts Management</td>
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</tr>
<tr>
<td>AMGT 620</td>
<td>Legal Aspects in Arts Management</td>
<td></td>
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<tr>
<td>AMGT 640</td>
<td>Programming and Project Arts Management</td>
<td></td>
</tr>
<tr>
<td>AMGT 706</td>
<td>Festivals and Special Events</td>
<td></td>
</tr>
<tr>
<td>AMGT 711</td>
<td>Directed Readings and Project</td>
<td></td>
</tr>
<tr>
<td>AMGT 752</td>
<td>Arts Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>AMGT 792</td>
<td>Internship II</td>
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</tr>
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</table>

Total Credits 9

Accelerated Master's

Art and Visual Technology, BA/Arts Management, Accelerated MA

Overview
Undergraduates in Art may apply to the accelerated master’s degree in Arts Management. If accepted, students will be able to earn an Art and Visual Technology, BA (p. 831) and an Arts Management, MA (p. 813) after satisfactory completion of 150 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete all requirements.

This accelerated option is offered through joint cooperation between the School of Art (p. 825) and the Arts Management Program (p. 812).

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).
Admissions Requirements
Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Academic Affairs Office. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

Accelerated Option Requirements
As an undergraduate, the accelerated master’s student is required to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, candidates submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing and must meet all master’s degree requirements except for the two courses (6 credits) completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Art. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 credit hours of graduation and must be approved by the Dean’s Office.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

Art and Visual Technology, BFA/Arts Management, Accelerated MA
Overview
Undergraduates in Art may apply to the accelerated master’s degree in Arts Management. If accepted, students will be able to earn an Art and Visual Technology, BFA (p. 835) and an Arts Management, MA (p. 813) after satisfactory completion of 150 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete all requirements.

This accelerated option is offered through joint cooperation between the School of Art (p. 825) and the Arts Management Program (p. 812).

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admissions Requirements
Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Academic Affairs Office. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

Accelerated Option Requirements
As an undergraduate, the accelerated master’s student is required to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, candidates submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing and must meet all master’s degree requirements except for the two courses (6 credits) completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Art. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 credit hours of graduation and must be approved by the Dean’s Office.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

Music, BA/Arts Management, Accelerated MA
Overview
Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete all requirements.
This accelerated option is offered through joint cooperation between the School of Music and the Arts Management Program.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees. For policies governing all graduate degrees, see the Academic Policies section of the catalog.

**Application Requirements**

Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Graduate Studies. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

**Accelerated Option Requirements**

As an undergraduate, the accelerated master’s student is to complete the two graduate courses indicated on their Accelerated Option Requirements.

As an undergraduate, the accelerated master’s student is to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of B in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

**Reserve Graduate Credits**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Music. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation and must be approved by the Dean’s Office.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

**Music, BM/Arts Management, Accelerated MA**

**Overview**

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete all requirements.

This accelerated option is offered through joint cooperation between the School of Music and the Arts Management Program.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees. For policies governing all graduate degrees, see the Academic Policies section of the catalog.

**Admissions**

Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Graduate Studies. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

**Accelerated Option Requirements**

As an undergraduate, the accelerated master’s student is to complete the two graduate courses indicated on their Accelerated Option Requirements.

As an undergraduate, the accelerated master’s student is to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of B in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

**Reserve Graduate Credits**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Music. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation and must be approved by the Dean’s Office.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.
Theater, BA/Arts Management, Accelerated MA

Overview
Undergraduates in Theater may apply to the accelerated master’s degree in Arts Management. If accepted, students will be able to earn a BA in Theater (p. 882) and an MA in Arts Management (p. 813) after satisfactory completion of 150 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and the completion in the Summer five years later, but longer time frames may also be available.

See AP 6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program. For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admission Requirements
Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 90 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Graduate Studies. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

Accelerated Option Requirements
As an undergraduate, the accelerated master’s student is to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. The Internal Internship (AMGT 740 Internal Internship) will be within Theater at Mason (generally with the School of Theater). Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Theater. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation and must be approved by the Dean’s Office.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

Computer Game Design Program
Sang Nam, Director
2019 Art and Design Building
Fairfax Campus
Phone: 703-993-5734
Website: game.gmu.edu

Undergraduate Program
The 120-credit Computer Game Design program enables students to focus on the artistic components of computer game design while providing them with the technical skills prerequisite to the field. Required courses include computer science, art and visual technology, music, the humanities, and computer game design. The required internship provides students with practical experience that enhances their employability post-graduation.

Graduate Program
The MA in Computer Game Design prepares graduate students who may have studied game design at the undergraduate level or who have degrees in a related technology, humanities, or arts disciplines for a career in game development and design. The program’s intention is to prepare students for employment and further study in the computer game design and development fields with a curriculum that reflects the gaming industry’s demand for an academically rigorous, technical program coupled with an understanding of the artistic and creative elements of the evolving field of study.

Faculty

Program Faculty
Associate Professor
Martin (director VSGI), Willis
Assistant Professors
Dieterich, Grimsby, Hudson, Lebowitz, Nam (director, graduate coordinator), Nolan, Piccione (associate director), Prawat
Administrative Faculty (Instructional)
Casey (associate director, Virginia Serious Game Institute)

Requirements & Policies
Undergraduate Program
Admissions
A writing sample will be reviewed prior to admission into the Game Design Program. Students will either be accepted, provisionally accepted, or denied. Visit the department website (http://game.gmu.edu) for further instruction.
Writing-Intensive Requirement
The university requires all undergraduate students to complete at least one course designated “writing intensive” in their majors at the 300 level or above. Students in the BFA in computer game design fulfill this requirement by successfully completing GAME 332 RS: Story Design for Computer Games.

Upper-Level Credits
All undergraduate students are required to complete a minimum of 45 credits of upper-division courses at the 300-499 level. Fulfilling degree requirements does not guarantee this requirement will be met.

Major GPA
All GAME undergraduate students must earn a minimum 2.00 cumulative GPA in their major.

All GAME courses except GAME 101 Introduction to Game Design (Mason Core) (p. 142), GAME 250 Music for Film and Video and GAME 367 Writing and Editing Music and Sound must be passed with a grade of C or better.

Academic Policies
All GAME majors are required to adhere to the George Mason University Honor code. Failure to do so may result in academic sanctions up to an including dismissal from the University.

Please see College of Visual and Performing Arts (p. 803) for college academic policies.

Graduate Program
Admissions
Admission is competitive. An offer of admission is valid only for the semester for which the student applies. For application requirements and deadlines, applicants should visit the Computer Game Design website (http://game.gmu.edu). Mason encourages early applications from prospective students who wish to be considered for academic scholarships or grants.

Programs
• Computer Game Design Minor
• Computer Game Design, BFA
• Computer Game Design, MA
• Sport and Computer Game Design Minor (CVPA)

Computer Game Design, BFA
Banner Code: AR-BFA-GAME
Jeremy Tuohy, Academic Advisor
2020 Art and Design Building
Fairfax Campus
Phone: 703-993-2041
Email: wtuohy@gmu.edu
Website: game.gmu.edu/undergraduate/

The 120-credit Computer Game Design program enables students to focus on the artistic components of computer game design while providing them with the technical skills prerequisite to the field.

Admissions & Policies

Policies
Upper-Level Credits
All undergraduate students are required to complete a minimum of 45 credits of upper-division courses at the 300-499 level. Fulfilling degree requirements does not guarantee this requirement will be met.

Major GPA
All GAME undergraduate students must earn a minimum 2.00 cumulative GPA in their major. All GAME courses except GAME 101 Introduction to Game Design (Mason Core) (p. 142), GAME 250 Music for Film and Video, and GAME 367 Writing and Editing Music and Sound must be passed with a grade of C or better.

Requirements

Degree Requirements
Total credits: 120

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>AVT 180</td>
<td>New Media in the Creative Arts (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CS 105</td>
<td>Computer Ethics and Society (Mason Core)</td>
<td>1</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 103</td>
<td>Physics and Everyday Phenomena I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 160 &amp; PHYS 161</td>
<td>University Physics I (Mason Core) (p. 142) and University Physics I Laboratory (Mason Core) (p. 142) (or another laboratory science course approved by advisor)</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21

1 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ENGH 101 Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) or ENGH 101 Composition (Mason Core) (p. 142), as well as ENGH 302 Advanced Composition (Mason Core) (p. 142), to fulfill degree requirements.
### Non-Specific Mason Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Communication</td>
<td>(p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Science</td>
<td>(p. 148)</td>
<td>4</td>
</tr>
<tr>
<td>Western Civilization/World History</td>
<td>(p. 151)</td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding</td>
<td>(p. 146)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 19

1 including laboratory

Approved courses may be found under the Mason Core section of this catalog.

### Major Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 104</td>
<td>Two-Dimensional Design and Color (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GAME 210</td>
<td>Basic Game Design</td>
<td>3</td>
</tr>
<tr>
<td>GAME 230</td>
<td>History of Computer Game Design</td>
<td>3</td>
</tr>
<tr>
<td>GAME 231</td>
<td>Computer Animation for Games</td>
<td>3</td>
</tr>
<tr>
<td>GAME 232</td>
<td>Online and Mobile Gaming</td>
<td>3</td>
</tr>
<tr>
<td>GAME 250</td>
<td>Music for Film and Video</td>
<td>3</td>
</tr>
<tr>
<td>GAME 300</td>
<td>Portfolio Preparation</td>
<td>1</td>
</tr>
<tr>
<td>GAME 310</td>
<td>Game Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>GAME 330</td>
<td>Computer Game Platform Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GAME 331</td>
<td>Consumer Gaming Platform Analysis Lab</td>
<td>1</td>
</tr>
<tr>
<td>GAME 332</td>
<td>RS: Story Design for Computer Games</td>
<td>3</td>
</tr>
<tr>
<td>GAME 367</td>
<td>Writing and Editing Music and Sound</td>
<td>3</td>
</tr>
<tr>
<td>GAME 398</td>
<td>Advanced Game Design Animation</td>
<td>3</td>
</tr>
<tr>
<td>GAME 410</td>
<td>Advanced Game Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>GAME 489</td>
<td>Pre-Internship Seminar</td>
<td>1</td>
</tr>
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</table>

Six credits of

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 490</td>
<td>Senior Game Design Capstone (Mason Core) (p. 142) (Must be taken twice for 3 credits each)</td>
<td>6</td>
</tr>
<tr>
<td>GAME 491</td>
<td>Internship</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Credits: 53-54

### Digital Media Electives

Select at least 12 credits from the following (or another course approved by your advisor):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 280</td>
<td>Introduction to New Media Arts</td>
<td></td>
</tr>
<tr>
<td>AVT 354</td>
<td>Digital Photography II</td>
<td></td>
</tr>
<tr>
<td>AVT 382</td>
<td>2D Experimental Animation</td>
<td></td>
</tr>
<tr>
<td>AVT 383</td>
<td>3D Experimental Animation</td>
<td></td>
</tr>
<tr>
<td>AVT 390</td>
<td>Video Art</td>
<td></td>
</tr>
<tr>
<td>AVT 482</td>
<td>Advanced Image Making</td>
<td></td>
</tr>
<tr>
<td>AVT 487</td>
<td>Advanced Topics: New Media Art</td>
<td></td>
</tr>
<tr>
<td>ENGH 372</td>
<td>Introduction to Film (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

### Visual Arts Electives

Select 6-8 credits from the following (or another course approved by your advisor):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 215</td>
<td>Typography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 217</td>
<td>Introduction to Web Design</td>
<td></td>
</tr>
<tr>
<td>AVT 222</td>
<td>Drawing I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 232</td>
<td>Painting I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 243</td>
<td>Printmaking I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 252</td>
<td>Darkroom Photography I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 262</td>
<td>Sculpture I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 311</td>
<td>Graphic Design Methods and Principles</td>
<td></td>
</tr>
<tr>
<td>AVT 323</td>
<td>Drawing II</td>
<td></td>
</tr>
<tr>
<td>AVT 324</td>
<td>Figure Drawing</td>
<td></td>
</tr>
<tr>
<td>AVT 333</td>
<td>Painting II</td>
<td></td>
</tr>
<tr>
<td>AVT 337</td>
<td>Figurative Painting</td>
<td></td>
</tr>
<tr>
<td>AVT 343</td>
<td>Printmaking II</td>
<td></td>
</tr>
<tr>
<td>AVT 353</td>
<td>Darkroom Photography II</td>
<td></td>
</tr>
<tr>
<td>AVT 363</td>
<td>Sculpture II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6-8

### General Electives

Select 6-9 credits of General Electives

Total Credits: 6-9

### Computer Game Design Minor

Banner Code: GAME

Jeremy Tuohy, Academic Advisor

2020 Art and Design Building
Fairfax Campus

Phone: 703-993-2041
Email: wtuohy@gmu.edu
Website: game.gmu.edu/undergraduate/

The minor embodies the core components discovered in the larger game design field. It offers a core of foundational studies with intermediate and advanced course options in game animation, game sound and music, or game design and development. Students pursuing the minor will be able to participate in game program events, special activities, game design competitions, and in most projects hosted in the Computer Game Design Research Studio.
Admissions & Policies

Policies

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18-19

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 101</td>
<td>Introduction to Game Design (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GAME 210</td>
<td>Basic Game Design</td>
<td>3</td>
</tr>
<tr>
<td>GAME 230</td>
<td>History of Computer Game Design</td>
<td>3</td>
</tr>
<tr>
<td>GAME 400</td>
<td>Game Design Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>

Select a two or three-course sequence from the following: 6-7

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 231 &amp; GAME 398</td>
<td>Computer Animation for Games and Advanced Game Design Animation</td>
<td></td>
</tr>
<tr>
<td>GAME 232 &amp; GAME 330 &amp; GAME 331</td>
<td>Online and Mobile Gaming and Computer Game Platform Analysis and Consumer Gaming Platform Analysis Lab</td>
<td></td>
</tr>
<tr>
<td>GAME 250 &amp; GAME 367</td>
<td>Music for Film and Video and Writing and Editing Music and Sound</td>
<td></td>
</tr>
</tbody>
</table>

6-7 credits selected from GAME 200-499

Total Credits 18-19

Computer Game Design, MA

Banner Code: AR-MA-GAME

Sang Nam, Director

2025 Art and Design Building
Fairfax Campus

Phone: 703-993-4362
Email: snam5@gmu.edu
Website: game.gmu.edu/graduate/

The MA in Computer Game Design prepares graduate students, who may have studied game design at the undergraduate level, or who have degrees in a related technology, humanities, or arts discipline. The program's intention is to prepare students for employment and further study in the computer game design and development fields, with a curriculum that reflects the gaming industry’s demand for an academically rigorous, technical program coupled with an understanding of the artistic and creative elements of the evolving field of study.

Admissions

Admission is competitive. An offer of admission is valid only for the semester for which the student applies. Application for graduate admission is made to the Office of Graduate Admissions. The application deadline for fall admission is March 1; the application deadline for the spring semester is November 1. Mason encourages early applications from prospective students who wish to be considered for academic scholarships, grants or teaching assistantships.

Eligibility

Admission is contingent on satisfactory completion of in-progress coursework, and graduation with a Bachelor degree, with a 3.00 GPA or higher, from an accredited undergraduate institute of higher education.

Application Requirements

The following items are required with applications for admission in the MA in Computer Game Design:

- Evidence of computer programming knowledge. A minimum of 3 credits (undergraduate or graduate) of Pearl or Python and 3 credits of Java or C# is required (subject to change as fields develop);
- Completed online application for graduate study;
- Application fee;
- Official transcripts from all undergraduate institutions attended;
- Three letters of recommendation: letters from instructors, professional supervisors, who can evaluate the applicant’s academic potential;
- International students must meet University criteria for the TOEFL (current University standard: 230 for computer-based, 88 for internet based tests), or other English proficiency examination;
- Goals statement: 1000 words, double spaced, 12 font;
- Writing sample: essay, review, project written within the last 3 years for academic course, college publication or competition, or for professional or community activity;
- Portfolio: must display 20 examples of the applicants’ most accomplished work. The applicant’s portfolio is a major selection criterion for graduate admission. Applicants’ portfolio items are considered part of the application for admission and, thus, cannot be returned. The portfolio and all other application materials will be submitted to the Office of Graduate Admissions. See website for submission instructions.

Policies

See College of Visual and Performing Arts (p. 803) for college academic policies.

Requirements

Degree Requirements

Total credits: 36
Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 600</td>
<td>Research Methodologies in Game Design</td>
<td>3</td>
</tr>
<tr>
<td>Four credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GAME 605</td>
<td>Game Design Graduate Seminar</td>
<td>6</td>
</tr>
<tr>
<td>Six credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GAME 610</td>
<td>Game Production</td>
<td>3</td>
</tr>
<tr>
<td>GAME 617</td>
<td>Teaching Practicum</td>
<td>3</td>
</tr>
<tr>
<td>GAME 626</td>
<td>Game Business, Entrepreneurship and Practice</td>
<td>3</td>
</tr>
<tr>
<td>GAME 710</td>
<td>Graduate Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 22

Electives

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 590</td>
<td>Topics in Folk Narrative</td>
<td>9</td>
</tr>
<tr>
<td>ENGH 685</td>
<td>Selected Topics, Movements, or Genres of Literature in English</td>
<td></td>
</tr>
<tr>
<td>GAME 628</td>
<td>Advanced Game Art</td>
<td>3</td>
</tr>
<tr>
<td>GAME 630</td>
<td>Advanced Game Animation</td>
<td>3</td>
</tr>
<tr>
<td>GAME 635</td>
<td>Issues in Interactive Entertainment</td>
<td>3</td>
</tr>
<tr>
<td>GAME 638</td>
<td>Game Studio Management</td>
<td>3</td>
</tr>
<tr>
<td>GAME 650</td>
<td>Advanced Music and Sound for Games</td>
<td>3</td>
</tr>
<tr>
<td>GAME 658</td>
<td>Interactive Game Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 614</td>
<td>Sociology of Culture</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 619</td>
<td>Applied Behavior Analysis: Principles, Procedures, and Philosophy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

Comprehensive Experience

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 796</td>
<td>Directed Reading</td>
<td>1</td>
</tr>
<tr>
<td>GAME 797</td>
<td>Proposal Writing</td>
<td>1</td>
</tr>
<tr>
<td>GAME 798</td>
<td>Project and Applied Research</td>
<td>3-4</td>
</tr>
<tr>
<td>or GAME 799</td>
<td>Thesis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 5-6

Film and Video Studies Program

Giovanna Chesler, Director

C100 College Hall
Fairfax Campus
Phone: 703-993-3287
Website: film.gmu.edu

The Film and Video Studies Program offers a multidisciplinary Bachelor of Arts degree in cinematic arts production. We emphasize Directing, Producing, Cinematography, Screenwriting, Sound Design and Editing, along with business, ethics, history, and theory of film and media. Students engage with many genres of cinematic storytelling, including short fiction, documentary, video art, television, web series and interactive video.

Students take most of their courses in Film and Video Studies with additional coursework in Film and Media Studies, Art, Communication, Computer Game Design, Music, Theater, and many other departments. Students engage with emerging technologies alongside entrepreneurship and industry standards to prepare for our vibrant, ever-changing field. Screening events, guest lectures, pitching competitions, and production work on a teaching film set (our Mason Film Lab) allow students to earn credits while they learn.

Film at Mason is a community of cinematic storytellers that fosters creativity, analysis, and diverse perspectives, professional practice and socially-conscious filmmaking. The Film and Video Studies Program is grounded in flexible thinking, critical engagement, interpersonal communication and regional storytelling. Graduates apply their skills on film sets, in corporate environments, and with community organizations with professionalism that is creative, entrepreneurial, and adaptable.

Faculty

Program Faculty

Program Director
Giovanna Chesler

Program Faculty
Britt, Charles, Chesler, Jusu, Kraus, Steger, Thrasher, Ugarte

Affiliated Faculty
Fuchs, Hinton, Kehoe, McDonald, Murray, Wood

Requirements & Policies

Requirements

Portfolio
Admission to Film and Video Studies is considered separately from admission to the university and only through a digital portfolio review. Information about the portfolio process, including submission deadlines and portfolio application requirements, can be found on the program’s website (https://film.gmu.edu) or by calling the Film office at 703-993-3287. Admission to the university is determined by the Admissions Office.

Writing-Intensive
The university requires all students to complete at least one course designated “writing-intensive” in their majors at the 300 level or above. Students seeking a BA in Film and Video Studies fulfill this requirement by completing ENGH 373 Film and Video Forms, FAVS 380 TV Writing, FAVS 498 Development for Senior Project or THR 482 Advanced Screenplay Workshop.

Major GPA
All Film and Video Studies undergraduate students must earn a minimum grade of C in all courses in their major.

Policies

Upper-Level Credits
All undergraduate students are required to complete a minimum of 45 credits of upper-division courses at the 300-499 level.
Termination from the Major

No Film and Video Studies course that is required for the major may be unsuccessfully attempted more than three times. A grade lower than a C constitutes an unsuccessful attempt in any given course. Those students who do not successfully complete such a course within three attempts will be terminated from the major. For more information, see the “Termination from the Major” section under AP5 Undergraduate Policies (p. 87).

Academic Policies

Please see College of Visual and Performing Arts (p. 803) for college academic policies.

Programs

• Film and Video Studies, BA

Film and Video Studies, BA

Banner Code: AR-BA-FAVS

Lori Yi, Academic Advisor

C100 College Hall
Fairfax Campus

Phone: 703-993-3287
Email: film@gmu.edu
Website: film.gmu.edu/students/undergraduate-program/

The Film and Video Studies degree is the first multidisciplinary undergraduate degree in Virginia focusing on cinematic arts production and film theory and history with core courses in ethics, business, writing for the moving image, fiction, documentary, interactive storytelling and episodic television.

Students complete courses in the Film Core. To fine-tune their craft, students select advanced courses of study from four concentrations:

• Directing
• Producing
• Production/Post-Production (Cinematography or Editing/Sound)
• Screenwriting

Each concentration includes a capstone experience wherein students are mentored by faculty on original projects in their senior year that prepare them for work in the cinematic arts.

Admissions & Policies

Admissions

All students are admitted to the Film and Video Studies (FAVS) program of study separately from their admission to the university and only by portfolio review.

Policies

Major GPA

All Film and Video Studies undergraduate students must earn a minimum grade of C in all courses in their major.

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87). See College of Visual and Performing Arts (p. 803) for policies specific to the college.

Requirements

Degree Requirements

Total credits: 120

Students must earn a minimum grade of C in all core and required FAVS courses.

Mason Core

Film majors may not double-count Literature and Art courses toward both the Film major and Mason Core requirements. The synthesis requirement is part of the Film core requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>Oral Communication (p. 142)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td></td>
<td>3</td>
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<tr>
<td>Information Technology (p. 143)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
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<td>7</td>
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<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
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<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
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<tr>
<td>Total Credits</td>
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</table>

1 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ENGH 101 Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) or ENGH 101 Composition (Mason Core) (p. 142), as well as ENGH 302 Advanced Composition (Mason Core) (p. 142), to fulfill degree requirements.

2 including one laboratory science

Major

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>AVT 204</td>
<td>Visual Thinking</td>
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<tr>
<td>ENGH 373</td>
<td>Film and Video Forms</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 225</td>
<td>The History of World Cinema (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
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<td>Credits</td>
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<td>-------------</td>
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</tr>
<tr>
<td>FAVS 250</td>
<td>Business of Film and Video</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 255</td>
<td>Video Production for Film</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 280</td>
<td>Writing for the Moving Image</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 311</td>
<td>Producing I</td>
<td>3</td>
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<tr>
<td>FAVS 352</td>
<td>Ethics of Film and Video (Mason Core)</td>
<td>3</td>
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<tr>
<td>FAVS 400</td>
<td>Career Development Seminar</td>
<td>3</td>
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<tr>
<td>FAVS 450</td>
<td>Internship in Film and Video Studies</td>
<td>3</td>
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</tbody>
</table>

**Analysis, History, Theory**

Choose one course from the following:

- AVT 377 Cyberpunk
- COMM 380 Media Criticism
- COMM 399 Special Topics in Communication
- ENGH 319 Popular Culture
- ENGH 370 Introduction to Documentary (Mason Core) (p. 142)
- ENGH 371 Television Studies (Mason Core) (p. 142)
- ENGH 372 Introduction to Film (Mason Core) (p. 142)
- ENGH 470 RS: Topics in Film/Media History (Mason Core) (p. 142)
- ENGH 472 Topics in Film/Media Theory
- ENGH 474 Topics in Film/Media Studies
- FAVS 399 Special Topics in Film and Video Studies
- HIST 389 Topics in U.S. History
- HIST 393 Topics in Film and History
- INTS 308 American Landscapes in Fiction, Film, and History (Mason Core) (p. 142)
- MUSI 301 Music in Motion Pictures (Mason Core) (p. 142)
- THR 411 Great Film Directors (Mason Core) (p. 142)
- THR 412 Great Film Performances (Mason Core) (p. 142)
- Other courses as approved by Program Director

**Diversity of Perspectives**

Choose one course from the following:

- ARAB 360 Topics in Arabic Cultural Production
- COMM 365 Gender, Race, and Class in the Media
- COMM 399 Special Topics in Communication
- ENGH 318 Introduction to Cultural Studies
- ENGH 319 Popular Culture
- ENGH 362 Global Voices (Mason Core) (p. 142)
- ENGH 418 Cultural Constructions of Sexualities
- FAVS 300 Global Horror Film (Mason Core) (p. 142)
- FAVS 399 Special Topics in Film and Video Studies
- FREN 470 French and Francophone Cinema
- FRLN 331 Topics in World Cinema (Mason Core) (p. 142)
- HIST 357 Postwar Japan (Mason Core) (p. 142)
- INTS 347 Gender Representation in Popular Culture (Mason Core) (p. 142)
- JAPA 320 Japanese Cinema
- WMST 300 Current Issues in Women and Gender Studies
- WMST 450 Current Topics in Women and Gender Studies
- Other courses as approved by Program Director

**Concentration**

Select one of the following concentrations:

- Directing
- Producing
- Production and Post-Production
- Screenwriting

**Total Credits** 66

1. Must be approved by Program Director.
2. May not be used to fulfill Mason Core.

### Concentration in Directing (DIR)

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tr>
<td>FAVS 260</td>
<td>Video Editing for Film</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 331</td>
<td>Cinematography</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 333</td>
<td>Sound Editing and Recording</td>
<td>3</td>
</tr>
</tbody>
</table>

**Fundamental Courses**

- AVT 382 2D Experimental Animation
- AVT 383 3D Experimental Animation
- FAVS 356 Film Marketing
- FAVS 380 TV Writing
- FAVS 460 Advanced Video Editing
- FAVS 483 Feature-Length Scriptwriting
- MUSI 301 Music in Motion Pictures (Mason Core) (p. 142)
- THR 210 Acting I (Mason Core) (p. 142)
- Other courses as approved by Program Director

**Authoring Courses**

- FAVS 365 Documentary Filmmaking
- FAVS 375 Fiction Film Directing

**Authoring Electives**

Choose two courses from the following:

- AVT 390 Video Art
- AVT 457 Documentary Photography
- FAVS 312 Film Lab
- FAVS 377 Interactive Storytelling for Social Change
- FAVS 378 Web Series
- FAVS 399 Special Topics in Film and Video Studies
- FAVS 475 Advanced Fiction Directing
- THR 329 Directing
- THR 340 Advanced Studies in Directing
- Other courses as approved by Program Director

**Required Core**

- FAVS 498 Development for Senior Project
- FAVS 499 Senior Project (Mason Core) (p. 142)

**Total Credits** 30

1. Must be approved by Program Director.
**Concentration in Producing (PRD)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FAVS 260</td>
<td>Video Editing for Film</td>
<td>3</td>
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<td>FAVS 356</td>
<td>Film Marketing</td>
<td>3</td>
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<tr>
<td>FAVS 380</td>
<td>TV Writing</td>
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**Fundamental Courses**

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<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>FAVS 260</td>
<td>Video Editing for Film</td>
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<td>FAVS 356</td>
<td>Film Marketing</td>
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<tr>
<td>FAVS 380</td>
<td>TV Writing</td>
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**Fundamental Electives**

Select two courses from the following:

<table>
<thead>
<tr>
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<td>AMGT 471</td>
<td>Introduction to Grant Writing</td>
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<td>BULE 303</td>
<td>Legal Environment of Business</td>
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<td>COMM 305</td>
<td>Foundations of Intercultural</td>
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<td></td>
<td>Communication (Mason Core)</td>
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<tr>
<td></td>
<td>(p. 142)</td>
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<tr>
<td>COMM 204</td>
<td>Introduction to Public Relations</td>
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<td>COMM 350</td>
<td>Mass Communication and Public Policy</td>
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<tr>
<td>COMM 359</td>
<td>Media Management</td>
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<tr>
<td>COMM 375</td>
<td>Mass Communication Advertising and</td>
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<td></td>
<td>Promotions</td>
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<td>COMM 430</td>
<td>Persuasion</td>
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<tr>
<td>COMM 435</td>
<td>Digital Communication</td>
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<tr>
<td>FAVS 331</td>
<td>Cinematography</td>
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<tr>
<td>INTS 404</td>
<td>Ethics and Leadership</td>
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<td>INTS 405</td>
<td>Women and Leadership</td>
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<td>INTS 431</td>
<td>Principles of Fund Raising</td>
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<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
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<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in</td>
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<tr>
<td></td>
<td>a Global Economy</td>
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<td>MBUS 304</td>
<td>Entrepreneurship: Starting and</td>
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<td></td>
<td>Managing a New Enterprise</td>
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<td>MBUS 305</td>
<td>Introduction to International Business</td>
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<td></td>
<td>(Mason Core)</td>
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<td>Other courses as approved by Program Director</td>
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**Authoring Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>FAVS 312</td>
<td>Film Lab</td>
<td>3</td>
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<tr>
<td>FAVS 375</td>
<td>Fiction Film Directing</td>
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**Authoring Electives**

Choose two courses from the following:

<table>
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<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>FAVS 365</td>
<td>Documentary Filmmaking</td>
<td>6</td>
</tr>
<tr>
<td>FAVS 377</td>
<td>Interactive Storytelling for Social Change</td>
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<tr>
<td>FAVS 378</td>
<td>Web Series</td>
<td></td>
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<tr>
<td>FAVS 399</td>
<td>Special Topics in Film and Video Studies</td>
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<tr>
<td>FAVS 475</td>
<td>Advanced Fiction Directing</td>
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<td></td>
<td>Other courses as approved by Program Director</td>
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**Required Core**

<table>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FAVS 497</td>
<td>Senior Film Practicum (Mason Core) (p. 142)</td>
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**Total Credits**

30

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1 Must be approved by Program Director.

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**Concentration in Production and Post Production (PROP)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>FAVS 260</td>
<td>Video Editing for Film</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 331</td>
<td>Cinematography</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 333</td>
<td>Sound Editing and Recording</td>
<td>3</td>
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</table>

**Fundamental Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FAVS 260</td>
<td>Video Editing for Film</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 356</td>
<td>Film Marketing</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 380</td>
<td>TV Writing</td>
<td>3</td>
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</table>

**Fundamental Electives**

Choose four courses from the following:

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<th>Code</th>
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<tr>
<td>ARTH 101</td>
<td>Introduction to the Visual Arts (Mason Core) (p. 142)</td>
<td>12</td>
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<tr>
<td>or ARTH 102</td>
<td>Symbols and Stories in Art (Mason Core) (p. 142)</td>
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<tr>
<td>or ARTH 200</td>
<td>History of Western Art I (Mason Core) (p. 142)</td>
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<tr>
<td>or ARTH 201</td>
<td>History of Western Art II (Mason Core) (p. 142)</td>
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<tr>
<td>or ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
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<tr>
<td>or ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
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<td>or ARTH 206</td>
<td>Survey of African Art (Mason Core) (p. 142)</td>
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<td>AVT 252</td>
<td>Darkroom Photography I (Mason Core) (p. 142)</td>
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<td>AVT 253</td>
<td>Digital Photography I (Mason Core) (p. 142)</td>
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<td>AVT 311</td>
<td>Graphic Design Methods and Principles</td>
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<td>AVT 328</td>
<td>Mixed Media</td>
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<td>AVT 354</td>
<td>Digital Photography II</td>
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<td>AVT 356</td>
<td>Photo Studio Techniques</td>
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<td>AVT 374</td>
<td>Sound Art I</td>
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<td>AVT 382</td>
<td>2D Experimental Animation</td>
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<tr>
<td>AVT 383</td>
<td>3D Experimental Animation</td>
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<td>AVT 390</td>
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<td>AVT 411</td>
<td>Motion Design</td>
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<td>AVT 458</td>
<td>Advanced Studio Lighting</td>
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<td>AVT 474</td>
<td>Sound Art II</td>
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<td>COMM 358</td>
<td>Multi-Camera Studio Production</td>
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<td>COMM 364</td>
<td>Videography</td>
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<td>COMM 366</td>
<td>Visual Communication</td>
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<td>COMM 397</td>
<td>Special Topics in Production</td>
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<td>FAVS 399</td>
<td>Special Topics in Film and Video Studies</td>
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<tr>
<td>GAME 231</td>
<td>Computer Animation for Games</td>
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<td>GAME 250</td>
<td>Music for Film and Video</td>
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<td>GAME 398</td>
<td>Advanced Game Design Animation</td>
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<td>MUSI 301</td>
<td>Music in Motion Pictures (Mason Core) (p. 142)</td>
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<td>MUSI 355</td>
<td>Recording Techniques</td>
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<td>MUSI 359</td>
<td>Topics in Music Technology</td>
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<td>THR 230</td>
<td>Fundamentals of Production (Mason Core) (p. 142)</td>
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<td>THR 313</td>
<td>Event Technical Production</td>
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<td>THR 314</td>
<td>Lighting Stagcraft</td>
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<tr>
<td>THR 315</td>
<td>Sound Engineering</td>
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<td>THR 333</td>
<td>Scenic Design</td>
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<td>THR 334</td>
<td>Lighting Design</td>
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<td>THR 339</td>
<td>Principles of Design</td>
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</tbody>
</table>
THR 342  Makeup Design
THR 343  Costume Technology
THR 415  Advanced Sound Engineering
THR 434  Advanced Lighting Design
Other courses as approved by Program Director

Authoring Electives
Choose one course from the following: 3
AVT 390  Video Art
AVT 457  Documentary Photography
FAVS 312  Film Lab
FAVS 365  Documentary Filmmaking
FAVS 375  Fiction Film Directing
FAVS 377  Interactive Storytelling for Social Change
FAVS 378  Web Series
FAVS 380  TV Writing
FAVS 483  Feature-Length Scriptwriting
FAVS 399  Special Topics in Film and Video Studies ¹
Other courses as approved by Program Director

Advanced Skills Electives
Choose one course from the following: 3
FAVS 431  Advanced Cinematography
FAVS 460  Advanced Video Editing
Other courses as approved by Program Director

Required Core
FAVS 497  Senior Film Practicum (Mason Core) (p. 142) 3

Total Credits 30

¹ Must be approved by Program Director.

Concentration in Screenwriting (SCWR)

<table>
<thead>
<tr>
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<tr>
<td>ENGH 396</td>
<td>Introduction to Creative Writing (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>FAVS 380</td>
<td>TV Writing</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 483</td>
<td>Feature-Length Scriptwriting</td>
<td>3</td>
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</table>

Elective Course in English
Select one course from the following: 3
ENGH 377  Digital Creative Writing
ENGH 386  Editing for Audience, Style, and Voice
ENGH 398  Fiction Writing
ENGH 399  Creative Nonfiction Writing
ENGH 492  Advanced Fiction Writing Workshop
ENGH 493  Advanced Workshop in Nonfiction
ENGH 497  Topics in Creative Writing
Or other courses as approved by Program Director

Elective Course in Computer Game Design or Communication
Choose one course from the following: 3
COMM 303  Writing across the Media
COMM 397  Special Topics in Production
COMM 399  Special Topics in Communication
GAME 332  RS: Story Design for Computer Games ¹

GAME 399  Special Topics ¹
Or other courses as approved by Program Director

Elective Course in Film and Video Studies
Choose two courses from the following: 6
FAVS 260  Video Editing for Film
FAVS 312  Film Lab
FAVS 365  Documentary Filmmaking
FAVS 375  Fiction Film Directing
FAVS 377  Interactive Storytelling for Social Change
FAVS 378  Web Series
FAVS 399  Special Topics in Film and Video Studies ¹
Or other courses as approved by Program Director

Elective Courses in Theater
Choose two courses from the following: 6
THR 380  Playwriting I
THR 381  Playwriting II
THR 480  Advanced Playwriting
THR 482  Advanced Screenplay Workshop
THR 484  Translation Adaptation for Stage Screen
Or other courses as approved by Program Director

Required Core
FAVS 496  Advanced Visual Storytelling (Mason Core) (p. 142) 3

Total Credits 30

¹ Must be approved by Program Director.

General Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Students must use general electives to complete a minor, a double major or double degree outside their primary major field of study (15-21 credits) or demonstrate intermediate-level proficiency in one foreign language (0-9 credits). After fulfilling one of these options, the remaining general electives may be taken inside or outside of the department.

Total Credits 17

School of Art

2050 Art and Design Building
Fairfax Campus
Phone: 703-993-8898
Website: soa.gmu.edu

Mission

George Mason University’s School of Art is a collaborative academic and professional community focused on advancing creativity through traditional and new media applied to varying social contexts. The School of Art is founded on the premise that art both reflects and inspires a creative society, improving the human condition while describing the world, both as it is and could be. We focus on the role of artists in that conversation. We encourage students to see art both as an individual expression and public interaction. We celebrate historical reference,
current relevance and experimentation-emphasizing innovative ways of thinking that enhance the impact of art on the future of society.

Embedded in a major liberal arts university rich in learning resources, the School of Art plays a vital role in the creative climate of the institution and the region through the cross-disciplinary research it facilitates and the artwork it produces and exhibits. The School's facilities engage an exceptional faculty of practicing artists, an active visiting artist program, and a diverse and intellectually curious graduate and undergraduate student body. Artistic skills and principles of creative practice in all visual media are grounded in a forward-thinking, adaptive curriculum. Faculty and students forge cross-disciplinary experimentation, challenging conventional thinking and blurring the lines between traditional artistic disciplines, indeed, between the arts and other humanities and sciences.

The School of Art educates artists and creative professionals to be responsible contributors to society, preparing them to be agents of change in an increasingly connected, complex, inclusive world. We highly value rigor in conceptual approach, skill in art production, and imaginative methods for implementing projects and engaging audiences. Each student is given a background in aesthetic and analytical judgment, the ethical framework for professional practice, the confidence to be both self-reliant and collaborative, and the mastery of design and production necessary to thrive as a professional artist in a competitive global environment.

Undergraduate Programs
Undergraduate studio degrees offered by the School of Art include the bachelor of arts (BA) and the bachelor of fine arts (BFA). An honors program enhances either degree for selected AVT majors. The school also offers undergraduate minors in art and visual technology, arts and social change, graphic design, photography, and web design.

For students who are interested in a career in teaching art in the public schools, neither the BA nor the BFA program satisfies all requirements for those seeking licensure. Undergraduate students interested in this field are highly encouraged to consider the accelerated degree path for the master of art in teaching and should contact the school's art education advisor to learn more about teacher preparation.

All George Mason University students are welcome to enroll in course work in the School of Art to fulfill Mason Core (p. 142) for requirements for the arts or to pursue minors. Consult the course listings for prerequisites and requirements. Students should carefully examine prerequisites for School of Art courses. Students may be removed from a course if they enroll without having fulfilled the prerequisites.

Studies
The School of Art program is located in the Art and Design Building which houses well-equipped studios for drawing, painting, photography, printmaking, and sculpture, as well as six computer-equipped studios that cross platforms and are installed with current software applications used for two-dimensional imaging, three-dimensional modeling, animation, video production, sound editing, multimedia authoring, photography, and web publishing.

Policies, procedures, and schedules for studio use are established by the AVT studio faculty and are posted in the studios.

Graduate Programs
The MA in Graphic Design offers students a comprehensive study and preparation for the graphic design profession. The program calls for 36 credits, which includes courses in typography, web design, image making, and brand design. The broad range of study is intended to develop professionals prepared for an ever-expanding graphic design field. This degree is the only MA in Graphic Design in the Washington Metropolitan region.

The Art Education Licensure Certificate is a post-baccalaureate program designed for those who currently hold a graduate degree in an art-related field along with those who want a more immediate entrance into the art teaching profession. This 'licensure only' program, which results in a pre K-12 art certification in the Commonwealth of Virginia, is a 21 credit program consisting of graduate education courses, area endorsements, student teaching internships and seminar.

The Master of Arts in Teaching in Art Education is a pre-service degree program that prepares students with a BFA degree or equivalent for pre K-12 art licensure by the Commonwealth of Virginia. Using a studio-based approach to art education and working closely with area public school systems, the MAT degree consists of 30 credits of graduate art education, school practicum experience, studio work, and preserve teaching internship and seminar.

MFA, Visual and Performing Arts
The School of Art offers two concentrations under the Master of Fine Arts, Visual and Performing Arts degree: Graphic Design and Visual Art. Applicants to the program must designate which concentration they intend to apply for on the application. Each concentration has its own unique set of admissions requirements and program requirements. For specific information, please refer to the Visual and Performing Arts, MFA entry.

The MFA is a terminal degree that prepares students to become professional artists, work in technology or arts-related fields, and teach at the university level. Candidates are required to complete 60 credits, of which 30 credits are made up from core requirements and 30 are made up of emphasis and studio requirements.

In the Visual Arts concentration, students may select an emphasis in new media, painting and drawing, photography, printmaking, sculpture, or InterArts. The latter offers students the opportunity to combine art forms in interdisciplinary projects that may be installation, performance, publishing, time-based, or writing-based; and combine creative and critical approaches to their work.

While it is anticipated that students will move through the MFA as described in this catalog, individuals with extensive professional accomplishment may, upon recommendation of the SOA Graduate Committee and with prior approval of the CVPA dean, craft an individualized program within their intended emphasis that meets curricular requirements.

Accelerated Master’s Options
The School of Art offers the following Accelerated Master’s programs:

- Art and Visual Technology, BA/Arts Management, Accelerated MA
- Art and Visual Technology, BFA/Art Education, Accelerated MAT
- Art and Visual Technology, BFA/Arts Management, Accelerated MA
- Art and Visual Technology, BFA/Graphic Design, Accelerated MA

Each program allows undergraduate students to take graduate classes that can be used towards a designated Master’s degree. Undergraduates who wish to pursue the accelerated Master’s route should talk to their academic advisor first to see if they qualify. Students must be within 75-100 credits of their Bachelor’s program to be eligible to apply; those
who have earned more than 100 credits will not be considered. Students must be approved by their academic advisor and formally apply and be accepted to the Master’s program through an Accelerated Master’s application. For more information about admissions requirements and the application process, students should visit the website (http://cvpa.gmu.edu).

**Faculty**

**Faculty**

**Professors**

Carbonneau, Linton, White

**Associate Professors**

Cooley, Crawford, Cui, Endress, Frenn, Karametou, Rothstein, Sheridan, Winant (director), Wrbican

**Assistant Professors**

Carrier, Debuque, Del Popolo, Incerti, Kardambikis, McDermott, Starr (associate director), Sutters

**Research Faculty**

Russell

**Adjunct Faculty**

Adair, Benassi, Bisese, Booth, Bourke, Boyce, Bradley, Carr, Chaudhary, Cole, Cusinner, Davis, Dixon, Guerrieri, Hicks, Ho, Kass, Kenney, Kehoe, Linendoll-Sawyer, McCoy, Micari, Morales, Nesbitt, North, Parada, Petrine, Quigley, Quinones, Sandberg, Sanchez, Sargent, Sawyer, Stanley, Van Meer, Wheeler, Yoder

**Requirements & Policies**

**Requirements & Policies**

**Undergraduate Admission to the School of Art**

Students are admitted to School of Art degree programs separately from their admission to George Mason University and only by portfolio review. The College of Visual and Performing Arts strongly encourages students to apply to the university by November 1 in order to receive maximum scholarship consideration, including merit and talent-based scholarships.

Applicants apply to George Mason University. Admission to George Mason is determined by the Admissions Office and is separate from admission to the School of Art degree programs. All School of Art applicants are encouraged to apply for admission to the university prior to submitting a portfolio for review.

Successfully complete a portfolio review. Please refer to the Portfolio Review Criteria (http://soa.gmu.edu).

**Artsbus Requirement**

All AVT majors must meet the school’s requirement of travel to galleries and museums through the Artsbus program. Students meet this requirement by enrolling in AVT 300 Artsbus Attendance. The procedure and requirements for enrollment in AVT 300 Artsbus Attendance are the same as for any other class.

Freshmen who enroll as AVT majors must register for AVT 300 Artsbus Attendance 5 times during their course of study. Transfer students and students who change their majors to AVT must register for AVT 300 Artsbus Attendance for the equivalent of each semester they are enrolled at Mason, up to a maximum of five semesters. Semesters of enrollment in AVT 300 Artsbus Attendance do not have to be consecutive. Students may take AVT 300 Artsbus Attendance up to three times in a semester if they wish to accelerate their completion of the requirement although this is strongly discouraged.

All rules and requirements to AVT 300 Artsbus Attendance participation are posted on the Artsbus website (http://artsbus.gmu.edu). Students are responsible for being familiar with and following the posted rules and requirements for Artsbus. The site also provides pertinent information for each trip regarding exhibits as well as reviews and articles for exhibitions.

**Visual Voices Requirement**

All AVT majors must fulfill three credits of AVT 301 Visual Voices Colloquium in order to graduate unless they are enrolled at Mason for fewer than three semesters. If enrolled for less than three semesters, students are required to register for AVT 301 Visual Voices Colloquium each semester in which they are enrolled. Visual Voices is an intrinsic part of the major, offering students a chance to meet with and hear nationally and internationally recognized artists speak about their work.

**Writing-Intensive Requirement**

Mason requires all students to complete at least one course designated “writing intensive” in their majors at the 300 level or above. AVT students fulfill this requirement by successfully completing AVT 395 Writing for Artists.

**Upper-Level Credits**

All undergraduate students are required to complete a minimum of 45 credits of upper-division courses at the 300–499 level.

**Major GPA**

All School of Art BA and BFA majors, AVT minor, Arts and Social Change minor, Graphic Design minor, Photography minor, and Web Design minor students must earn a grade of C or better in required AVT coursework, including Studio Foundation, Critical Analysis and Contemporary Practice, Breadth and Experience, Synthesis and Concentrations. All School of Art undergraduate students must earn a minimum 2.00 cumulative GPA in their major. To graduate with a BA or BFA in Art and Visual Technology with a concentration in Graphic Design, students are required to maintain a 2.40 GPA in concentration classes. Students who fail to maintain this minimum may either retake core classes (an earned higher grade replaces the old one) or take concentration special topics classes in order to raise their average to the threshold. The effect of this change will be that very weak students will have to return to required classes to master core skills, and marginally weak students will be able to meet the requirement while expanding the breadth of their education.

**Policies**

See CVPA Requirements and Policies (p. 803).

**Honors Program**

Students interested in the Honors Program in School of Art should contact the director of the school. Both BA and BFA students are eligible to apply for admission to the program. Honors students must complete at least 4 credits AVT 394 Honors Seminar. They must have a cumulative
GPA of at least 3.00 and at least 3.50 in AVT 394 Honors Seminar and the AVT major.

Programs

• Animation Minor
• Art Education Licensure Graduate Certificate
• Art Education, MAT
• Art and Visual Technology, BA
• Art and Visual Technology, BFA
• Arts and Social Change Minor
• Digital Media and Web Design Minor (CVPA)
• Graphic Design Minor
• Graphic Design Undergraduate Certificate
• Graphic Design, MA
• Illustration Minor
• Photography Minor
• Studio Art Minor
• Web Design Minor

Art Education, MAT

Banner Code: AR-MAT-ARTE

2005 Art and Design Building
Fairfax Campus
Phone: 703-993-8898
Website: soa.gmu.edu

The Master of Arts in Teaching in Art Education (MAT I) is a pre-service degree program that prepares students with a BFA degree or equivalent for PreK-12 art licensure by the Commonwealth of Virginia. Using a studio-based approach to art education and working closely with area public school systems, the MAT degree consists of 30 credits of graduate art education, school practicum experience, studio work, and pre-service teaching internship and seminar.

Available Concentrations

This degree program has two concentrations: one concentration for those seeking certification (MAT I) as well as a one for licensed art teachers who are continuing education (MAT II). The concentration for licensed art teachers (MAT II) is designed for PreK-12 licensed art teachers who currently hold an undergraduate degree in art education and a current teaching license in Art Education. Applicants should be interested in obtaining a graduate art education degree for further professional development. Students take graduate art education courses, approved graduate level studio art courses, education courses, and complete a capstone project.

Admissions

Admissions

In addition to meeting the general university admission requirements for graduate study, admission to this program is contingent on completion of a BFA in visual art or approved equivalent. Candidates must have a minimum 3.00 cumulative undergraduate GPA.

Eligibility

Eligibility for the MAT I in Art Education program may demand additional course work to establish proficiency in visual arts. Students lacking a strong background in the visual arts or pedagogy, or those who earned a BFA or BA at an institution other than Mason, may be required to satisfy prerequisite courses prior to entry into the graduate program. Applicants must complete an endorsement worksheet through the College of Education and Human Development in order to prove that their previous coursework satisfies the prerequisite requirements for Virginia licensure and/or for entry into the Master’s program.

Students interested in pursuing the degree with the concentration for licensed art teachers must meet the above with the following exceptions: admission is contingent upon the completion of a BFA or BA in art or art education with a minimum 3.00 cumulative undergraduate GPA, maintaining a current PreK-12 license to teach art education with at least one or more years of art teaching experience.

Application Materials and Deadlines

Applications will be accepted for fall and spring semesters. The deadline for receipt of application materials is October 1 and March 1. Each applicant must provide the following materials:

• Completed application form
• Certified copies of all undergraduate transcripts and any graduate transcripts
• Statement of intent and professional goals for entering the field
• Three letters of reference from faculty members or individuals who have firsthand knowledge of the applicant's academic or professional capabilities
• Official scores on Praxis Core or SAT equivalent (MAT I only)
• Endorsement Worksheet (MAT I only)
• TOEFL score (for international applicants only)
• Portfolio Requirement:
  • MAT I: portfolio must include 15 to 20 images that reflect artistic breadth and depth, including drawing skills of the applicant's art.
  • MAT II: portfolio must include 10 images of the applicant's personal art that reflect artistic breadth and depth, including drawing skills, along with 10 student art works displaying a variety of 2-D and 3-D media. Student artwork is to be accompanied by a brief description of the lesson content.

All portfolios should be submitted through SlideRoom. All portfolios must include title, date, medium, and size of each work. Incomplete portfolios will not be considered.

All application materials should be submitted to the Office of Graduate Admissions. Qualified applicants may be invited to an on-campus interview. Applicants should visit the School of Art's website for more details.

Admissions & Policies

Diversity among students is another consideration for acceptance into the program. Applicants with degrees in areas other than art are welcome, although they may be required to complete additional undergraduate core, studio, and art history courses.
Policies
See College of Visual and Performing Arts (p. 803) for policies specific to the college.

Requirements

Degree Requirements
Total Credits: 30

Students must earn a B- or higher in licensure coursework.

Required Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 605</td>
<td>Issues and Research in Art Education</td>
<td>3</td>
</tr>
<tr>
<td>AVT 667</td>
<td>Two-Dimensional Art Making and Differentiated Instruction</td>
<td>3</td>
</tr>
<tr>
<td>AVT 668</td>
<td>Three-Dimensional Art Making Across Cultures</td>
<td>3</td>
</tr>
<tr>
<td>CVPA 600</td>
<td>CVPA Graduate ProSeminar (must be taken within a student’s first 2 semesters)</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Credits: 9

MAT (I) Required Courses
Coursework meets licensure and Master’s degree requirements. The listing below follows the recommended sequencing for licensure.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 615</td>
<td>Technology for Art Teachers</td>
<td>3</td>
</tr>
<tr>
<td>AVT 691</td>
<td>Elementary Art Education</td>
<td>3</td>
</tr>
<tr>
<td>AVT 692</td>
<td>Secondary Art Education</td>
<td>3</td>
</tr>
<tr>
<td>AVT 695</td>
<td>Internship in Art Education (Student Teaching)</td>
<td>5</td>
</tr>
<tr>
<td>AVT 696</td>
<td>Internship in Art Education Seminar</td>
<td>1</td>
</tr>
<tr>
<td>EDRD 501</td>
<td>Literacy and Curriculum Integration, PK-12</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 511</td>
<td>Child and Adolescent Development in Global Contexts</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21

MAT (II) Concentration for Licensed Art Teachers (LAT) Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 596</td>
<td>Independent Study ¹</td>
<td>4</td>
</tr>
<tr>
<td>or AVT 599</td>
<td>Special Topics in Art and Visual Technology</td>
<td>4</td>
</tr>
<tr>
<td>AVT 599</td>
<td>Special Topics in Art and Visual Technology (topic: Prints/Paper/Books as Language)</td>
<td>4</td>
</tr>
<tr>
<td>AVT 606</td>
<td>Creativity and Cognition in the Arts and Media</td>
<td>3</td>
</tr>
<tr>
<td>AVT 615</td>
<td>Technology for Art Teachers</td>
<td>3</td>
</tr>
<tr>
<td>AVT 698</td>
<td>Independent Study/Directed Readings</td>
<td>1</td>
</tr>
<tr>
<td>EDUC 537</td>
<td>Introduction to Culturally Linguistically Diverse Learners</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 3 credits of graduate education courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 511</td>
<td>Child and Adolescent Development in Global Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 522</td>
<td>Foundations of Secondary Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 542</td>
<td>Foundations of Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 543</td>
<td>Children, Family, Culture, and Schools, 4-12 Year Olds</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 597</td>
<td>Special Topics in Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 606</td>
<td>Education and Culture</td>
<td></td>
</tr>
<tr>
<td>EDUC 613</td>
<td>How Students Learn</td>
<td></td>
</tr>
<tr>
<td>EDUC 614</td>
<td>Designing and Assessing Teaching and Learning</td>
<td></td>
</tr>
<tr>
<td>EDUC 615</td>
<td>Educational Change</td>
<td></td>
</tr>
</tbody>
</table>

Or other course as approved by director

Total Credits: 21

Note:
MAT I students will receive ongoing evaluation reviews by the MAT faculty to determine whether they have achieved satisfactory progress toward their degree.

MAT (I) Teacher Endorsement
MAT I students originally admitted under provisional status must complete all endorsements and any assigned art education foundational courses (which may include AVT 494 Strategies in Art Room: PK-12 and AVT 495 Introduction to Art Teaching and Learning) by the date indicated on the student’s provisional admission agreement and prior to admission to degree status. These courses may be taken concurrently with other MAT courses, but may not exceed a total of 9 credits. All MAT I students should meet all testing and coursework requirements prior to starting their student teaching internship.

Students must have a studio major in the Visual Arts and meet the Virginia Department of Education’s required semester credit hours in the following specific areas: 12 hours of two-dimensional media, 12 hours of three-dimensional media, 9 hours of cultural context and art history, judgment and criticism, aesthetics, and 3 hours of related areas of the fine arts.

Note:
MAT I students will receive ongoing evaluation reviews by the MAT faculty to determine whether they have achieved satisfactory progress toward their degree.

MAT (I) Professional Teaching Portfolio
The comprehensive experience for the MAT I includes the following:

1. a group exhibition, "The Art of Teaching Art Showcase," in which MAT candidates display and formally present works of PreK–12 student art completed during the internship, along with exemplars of the MAT candidate's own artwork, and
2. a culminating review of the intern’s competencies as reflected in a professional teaching portfolio, accomplished during the internship seminar course that accompanies student teaching.

A committee of MAT faculty will determine whether the student has mastered the field of study based on the final portfolio and exhibition. Students who are unable to successfully complete the full student teaching internship in art education and seminar for student teachers will be terminated from the MAT in Art Education program.

¹ Prior to internships, students must pass: Praxis II, VCLA, technology & child abuse standards.
Capstone:
LAT concentration students must complete a Capstone Project. Under the guidance of a faculty advisor, students will select a topic in a personal area of interest in art education pedagogy, carry out in-depth research, and prepare a capstone final project in the form of a written report and visual presentation.

Student Teaching Placement Requirement
All MAT students must pass Praxis II and Virginia Communication and Language Assessment (VCLA) to receive placement for student teaching in the final semester.

Accelerated Master's

Art and Visual Technology, BFA/Art Education, Accelerated MAT

Overview
Undergraduates in art may apply to the accelerated master's degree in Art Education. If accepted, students will be able to earn an Art and Visual Technology, BFA (p. 835) and an Art Education, MAT (p. 828) after satisfactory completion of 144 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and the completion in the Fall semester five and a half years later, but longer time frames may also be available.

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admissions Requirements
Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Academic Affairs Office. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

In addition to meeting the general university requirements for admission for graduate study, applicants must submit:

- Statement of intent and professional goals for entering the field
- Three letters of reference from faculty members or individuals who have firsthand knowledge of the applicant’s academic or professional capabilities
- Official score on Praxis Core or SAT equivalent
- MAT (for BFA students) portfolio must include 15 to 20 images that reflect artistic breadth and depth, including samples of work with ample attention to drawing and painting from observation. These works must be submitted through SlideRoom. All pieces must include the title of the piece, date, medium, and size of each work. Incomplete portfolios will not be considered.

Teacher Endorsement
Students for the MAT (for BFA students) must complete ALL endorsements, as well as the Praxis Core Exam and the PLUS art education foundational courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 493</td>
<td>Teaching Visual Thinking Through Media, PK-12</td>
<td>3</td>
</tr>
<tr>
<td>AVT 494</td>
<td>Strategies in Room: PK-12</td>
<td>3</td>
</tr>
<tr>
<td>AVT 495</td>
<td>Introduction to Art Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Students must meet Virginia Department of Education’s required semester credit hours in the following specific areas:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12 hours of two-dimensional media</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>12 hours of three-dimensional media</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>9 hours of cultural context and art history, judgment and criticism, aesthetics</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>3 hours of related areas of fine arts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>36</td>
</tr>
</tbody>
</table>

Students should work closely with their advisor to ensure they complete these course requirements through the BFA in Art and Visual Technology (p. 835) and MAT (p. 828) degrees.

Accelerated Option Requirements
As an undergraduate, the accelerated master’s student is required to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated on the application, candidates submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing and must meet all master’s degree requirements except for the two courses (6 credits) completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high-achieving undergraduates with permission of the School of Art. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 credit hours of graduation and must be approved by the Dean’s Office.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.
Art Education Licensure Graduate Certificate
Banner Code: AR-CERG-ARTL

2005 Art and Design Building
Fairfax Campus
Phone: 703-993-8898
Website: soa.gmu.edu

Following this curriculum does not guarantee entry into the Master of Art Teaching (MAT) Program (p. 828). Prospective MAT students must meet all MAT admissions requirements. Students must also complete a minimum of 18 credits in degree status after admission to the degree program.

This certificate may be earned either on a part time or full time basis.

Admissions & Policies

Admissions

Admission Requirements

In addition to meeting the general university admission requirements, admission to the licensure program is contingent on completion of a BFA, BA in art or approved equivalent along with a minimum 3.00 cumulative undergraduate GPA. Eligibility for the certificate may demand additional coursework to establish proficiency in visual arts. Students will be required to satisfy the required state endorsement courses prior to student teaching.

Applications will be accepted for fall and spring semesters. The deadline for receipt of application materials is October 1 for Spring and April 1 for Fall. Each applicant must provide the following materials:

- Completed application form
- Certified copies of all undergraduate transcripts and any graduate transcripts
- Statement of intent and professional goals for entering the field
- Three letters of reference from faculty members or individuals who have firsthand knowledge of the applicant’s academic or professional capabilities
- Official passing score on Praxis Core or SAT equivalent
- TOEFL score, if required by Mason policies
- Portfolio of 15-20 images that reflect artistic breadth and depth, including drawing skills of the applicant’s art. The work should be submitted via SlideRoom. All portfolios must include a written image sheet with the corresponding number, title, date, medium, and size of each work. Incomplete portfolios will not be considered. Applicants’ portfolio items are considered part of the application for admission and, thus, cannot be returned. Please do not send original materials.

The all application materials should be submitted to the Office of Graduate Admissions (https://www2.gmu.edu/admissions-aid/how-apply/graduate). Applicants refer to the graduate page of the School of Art website (http://soa.gmu.edu/graduateprograms) for more details.

Diversity among students is another consideration for acceptance into the program. Applicants with degrees in areas other than art are welcome, although they may be required to complete undergraduate core and studio and art history courses.

The certificate is a post-baccalaureate program designed for those who currently hold an undergraduate degree in an art-related field along with those who want a more immediate entrance into the art teaching profession. This “licensure only” program, which results in a pre K-12 art certification in the Commonwealth of Virginia, is a 21-credit program consisting of graduate education courses, art endorsements, student teaching internships and seminar.

International students may be required to undergo an additional audit of their undergraduate transcripts.

Policies

Students must earn a B- or higher in all coursework.

Certificate Requirements

Total credits: 21

This certificate may be pursued on a full-or part-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 595</td>
<td>Introduction to Art Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>AVT 691</td>
<td>Elementary Art Education</td>
<td>3</td>
</tr>
<tr>
<td>AVT 692</td>
<td>Secondary Art Education</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 501</td>
<td>Literacy and Curriculum Integration, PK-12</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 539</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>AVT 695</td>
<td>Internship in Art Education (Student Teaching)</td>
<td>5</td>
</tr>
<tr>
<td>AVT 696</td>
<td>Internship in Art Education Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 21

1 Prior to internship, student must pass: Praxis II, VCLA, technology and child abuse standards to receive placement for student teaching.

All Licensure Certificate students will receive ongoing evaluations by the art education faculty to determine their readiness for student teaching.

In addition, applicants who did not take equivalent undergraduate courses will be required to take AVT 180 New Media in the Creative Arts (Mason Core) (p. 142), art education endorsements, plus any additional studio or art history course work to meet Virginia licensure requirements.

Art and Visual Technology, BA

Banner Code: AR-BA-AVT

2050 Art and Design Building
Fairfax Campus
Phone: 703-993-8898
Email: avt@gmu.edu
Website: soa.gmu.edu
Requirements

Degree Requirements
Total credits: 120

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Oral Communication (p. 142) 3
Quantitative Reasoning (p. 143) 3
Information Technology (p. 143) 3

Core Requirements

| Literature (p. 147) | 3 |
| Arts (p. 144) | 3 |
| Natural Science (p. 148) | 7 |
| Western Civilization/World History (p. 151) | 3 |
| Global Understanding (p. 146) | 3 |
| Social and Behavioral Sciences (p. 150) | 3 |

Total Credits 37

1 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ENGH 101 Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) or ENGH 101 Composition (Mason Core) (p. 142), as well as in ENGH 302 Advanced Composition (Mason Core) (p. 142), to fulfill degree requirements.

2 All students concentrating in new media art must take AVT 180 New Media in the Creative Arts (Mason Core) (p. 142).

3 AVT majors may not choose AVT courses to meet this requirement, and they may not double-count ARTH courses toward both the AVT major and the Mason Core arts requirement.

4 Including at least one laboratory science

5 AVT majors may not double-count ARTH courses toward both AVT major requirements and the Mason Core global understanding requirement.

AVT Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 101</td>
<td>New Majors Colloquium</td>
<td>1</td>
</tr>
<tr>
<td>AVT 104</td>
<td>Two-Dimensional Design and Color (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>AVT 105</td>
<td>Three-Dimensional Design and Beyond</td>
<td>4</td>
</tr>
<tr>
<td>AVT 222</td>
<td>Drawing I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>AVT 323</td>
<td>Drawing II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or AVT 324 Figure Drawing</td>
<td></td>
</tr>
</tbody>
</table>

Art History, Critical Analysis, Contemporary Practice

Select one from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 200</td>
<td>History of Western Art I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 350</td>
<td>History of Photography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 318</td>
<td>History of Graphic Design</td>
<td></td>
</tr>
<tr>
<td>AVT 410</td>
<td>Experiential Design History</td>
<td></td>
</tr>
<tr>
<td>ARTH 201</td>
<td>History of Western Art II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ARTH 374</td>
<td>Art Now</td>
<td></td>
</tr>
</tbody>
</table>

Three credits of

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 301</td>
<td>Visual Voices Colloquium</td>
<td>3</td>
</tr>
<tr>
<td>AVT 307</td>
<td>Aesthetics</td>
<td>3</td>
</tr>
<tr>
<td>AVT 395</td>
<td>Writing for Artists</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or AVT 396 Writing for Designers</td>
<td></td>
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</table>

Breadth and Experience

Select three to four courses from the following: 4 12-13

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 215</td>
<td>Typography (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>AVT 217</td>
<td>Introduction to Web Design</td>
<td></td>
</tr>
<tr>
<td>AVT 232</td>
<td>Painting I (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>AVT 243</td>
<td>Printmaking I (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>AVT 252</td>
<td>Darkroom Photography I (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>AVT 253</td>
<td>Digital Photography I (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>AVT 254</td>
<td>Photography</td>
<td></td>
</tr>
<tr>
<td>AVT 262</td>
<td>Sculpture I (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>AVT 272</td>
<td>Interdisciplinary Arts (Mason Core)</td>
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<tr>
<td>AVT 280</td>
<td>Introduction to New Media Arts</td>
<td></td>
</tr>
<tr>
<td>AVT 326</td>
<td>Nontraditional Approaches to Drawing</td>
<td></td>
</tr>
<tr>
<td>AVT 327</td>
<td>Illustration</td>
<td></td>
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<tr>
<td>AVT 346</td>
<td>Digital Printmaking</td>
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<tr>
<td>AVT 374</td>
<td>Sound Art I</td>
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<tr>
<td>AVT 385</td>
<td>EcoArt (Mason Core)</td>
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</tr>
<tr>
<td>AVT 496</td>
<td>Special Topics</td>
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</tbody>
</table>

Other courses as approved by program director

Professional Practices

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 413</td>
<td>Professional Design Practices</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or AVT 453 Professional Practices</td>
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</tbody>
</table>

Synthesis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AVT 497</td>
<td>Senior Project (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or AVT 498 Senior Design Project (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 52-53

1 Students concentrating in Graphic Design must take either AVT 318 History of Graphic Design or AVT 410 Experiential Design History to fulfill this requirement. Students concentrating in photography must complete ARTH 350 History of Photography to fulfill this requirement.

2 Must be taken for a total of 3 credits or each semester, if less than 3 semesters
Students concentrating in Graphic Design must take AVT 396 Writing for Designers to fulfill this requirement.

At least one course must be a 200-level studio course. See each concentration for individual requirements.

All students concentrating in graphic design must complete AVT 413 Professional Design Practices.

**Artsbus Requirement**

All AVT majors must meet the school’s requirement of travel to galleries and museums through the Artsbus program. Students meet the requirement by enrolling in AVT 300 Artsbus Attendance. The procedure and requirements for enrollment in AVT 300 are the same as for any other class.

Freshmen who enroll as AVT majors must register for AVT 300 Artsbus Attendance 5 times during their course of study. Transfer students and students who change their majors to AVT must register for AVT 300 Artsbus Attendance for the equivalent of each semester they are enrolled at Mason, up to a maximum of five semesters.

**Concentrations**

Select one concentration and complete the requirements therein.

**Concentrations**

- Drawing (DRW) (p. 833)
- Graphic Design (GD) (p. 833)
- New Media Art (NMA) (p. 833)
- Painting (PNT) (p. 833)
- Photography (PHO) (p. 833)
- Printmaking (PM) (p. 834)
- Sculpture (SCL) (p. 834)

**Drawing (DRW)**

All AVT majors concentrating in drawing must complete AVT 232 Painting I (Mason Core) (p. 142) under Breadth and Experience.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 422</td>
<td>Drawing III</td>
<td>3</td>
</tr>
<tr>
<td>AVT 423</td>
<td>Drawing IV</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 6 credits from the following:

- AVT 324 Figure Drawing
- AVT 326 Nontraditional Approaches to Drawing
- AVT 328 Mixed Media
- AVT 333 Painting II
- AVT 336 Experimental Painting
- AVT 337 Figurative Painting
- AVT 432 Painting III
- AVT 433 Advanced Painting I
- AVT 496 Special Topics

Other courses as approved by program director

Total Credits 12

**Photography (PHO)**

All AVT majors concentrating in photography must complete AVT 252 Darkroom Photography I (Mason Core) (p. 142) under Breadth and Experience.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 333</td>
<td>Painting II</td>
<td>3</td>
</tr>
<tr>
<td>AVT 432</td>
<td>Painting III</td>
<td>3</td>
</tr>
<tr>
<td>AVT 433</td>
<td>Advanced Painting I</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 3 credits from the following:

- AVT 336 Experimental Painting
- AVT 337 Figurative Painting
- AVT 434 Advanced Painting II
- AVT 435 Advanced Painting III

Other courses as approved by program director

Total Credits 12
Art and Visual Technology, BA

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 353</td>
<td>Darkroom Photography II</td>
<td>3</td>
</tr>
<tr>
<td>AVT 356</td>
<td>Photo Studio Techniques</td>
<td>3</td>
</tr>
<tr>
<td>AVT 359</td>
<td>Photography Seminar</td>
<td>3</td>
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<tr>
<td>Select 3 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVT 354</td>
<td>Digital Photography II</td>
<td>3</td>
</tr>
<tr>
<td>AVT 357</td>
<td>Photobook: Concepts Form</td>
<td></td>
</tr>
<tr>
<td>AVT 454</td>
<td>Alternative Photo Processes</td>
<td></td>
</tr>
<tr>
<td>AVT 455</td>
<td>Digital Printing Techniques</td>
<td></td>
</tr>
<tr>
<td>AVT 457</td>
<td>Documentary Photography</td>
<td></td>
</tr>
<tr>
<td>AVT 458</td>
<td>Advanced Studio Lighting</td>
<td></td>
</tr>
<tr>
<td>Other courses as approved by program director</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

Printmaking (PM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 343</td>
<td>Printmaking II</td>
<td>3</td>
</tr>
<tr>
<td>Select 9 credits from the following:</td>
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<td></td>
</tr>
<tr>
<td>AVT 344</td>
<td>Bookmaking: Books Enclosures</td>
<td></td>
</tr>
<tr>
<td>AVT 345</td>
<td>Paper/Print/Book as Language</td>
<td></td>
</tr>
<tr>
<td>AVT 346</td>
<td>Digital Printmaking</td>
<td></td>
</tr>
<tr>
<td>AVT 442</td>
<td>Printmaking III</td>
<td></td>
</tr>
<tr>
<td>AVT 443</td>
<td>Printmaking IV</td>
<td></td>
</tr>
<tr>
<td>Other courses as approved by program director</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

Sculpture (SCL)

All AVT majors concentrating in sculpture must complete AVT 262 Sculpture I (Mason Core) (p. 142) under Breadth and Experience.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 363</td>
<td>Sculpture II</td>
<td>3</td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVT 393</td>
<td>Field Experience in the Arts</td>
<td>3</td>
</tr>
<tr>
<td>or AVT 489</td>
<td>Internship in Art and Visual Technology</td>
<td></td>
</tr>
<tr>
<td>AVT 462</td>
<td>Sculpture III</td>
<td>3</td>
</tr>
<tr>
<td>AVT 463</td>
<td>Sculpture IV</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration Electives

AVT 496 Special Topics or AVT 491 Independent Study in Art and Visual Technology may be taken with permission of respective program director.

General Electives

BA students must use some/all general electives to complete a

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minor</td>
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<td></td>
<td>Double Major</td>
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<tr>
<td></td>
<td>Double Degree</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intermediate-level proficiency in one foreign language</td>
<td>1</td>
</tr>
<tr>
<td>Remaining electives</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18-19

1. Must be outside student’s primary major field of study.
2. May be taken inside or outside of the department. All students are required to take a minimum of 45 credits of upper-division courses (300 and 400 level); most students will require at least 13 elective credits at the 300 level or above. AVT 393 Field Experience in the Arts and AVT 489 Internship in Art and Visual Technology are not required courses but are highly recommended as electives for BA students.

Accelerated Master’s

Art and Visual Technology, BA/Arts Management, Accelerated MA

Overview

Undergraduates in Art may apply to the accelerated master’s degree in Arts Management. If accepted, students will be able to earn an Art and Visual Technology, BA (p. 831) and an Arts Management, MA (p. 813) after satisfactory completion of 150 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete all requirements.

This accelerated option is offered through joint cooperation between the School of Art (p. 825) and the Arts Management Program (p. 812).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admissions Requirements

Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Academic Affairs Office. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

Accelerated Option Requirements

As an undergraduate, the accelerated master’s student is required to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, candidates submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing and must meet all master’s degree requirements except for the two courses (6 credits) completed as undergraduates. Students will begin
their master's program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Art. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 credit hours of graduation and must be approved by the Dean's Office.

To apply these credits to the master's degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master's Transition Form.

**Art and Visual Technology, BFA**

**Banner Code:** AR-BFA-AVT

2050 Art and Design Building
Fairfax Campus
Phone: 703-993-8898
Email: avt@gmu.edu
Website: soa.gmu.edu

**Requirements**

**Degree Requirements**

Total credits: 120

**Mason Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology (p. 143)</td>
<td>3</td>
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<tr>
<td></td>
<td>ENGH 101 Composition (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td></td>
<td>ENGH 302 Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Core Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Western Civilization (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>

1 All students concentrating in graphic design or new media art must take AVT 180 New Media in the Creative Arts (Mason Core) (p. 142).

2 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ENGH 101 Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) or ENGH 101 Composition (Mason Core) (p. 142), as well as in ENGH 302 Advanced Composition (Mason Core) (p. 142), to fulfill degree requirements.

3 AVT majors may not choose AVT courses to meet this requirement, and they may not double-count ARTH courses toward both the AVT major and the Mason Core arts requirement.

4 including at least one laboratory science

5 AVT majors may not double-count ARTH courses toward both AVT major requirements and the Mason Core global understanding requirement.

**AVT Major Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 101</td>
<td>New Majors Colloquium</td>
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<tr>
<td>AVT 104</td>
<td>Two-Dimensional Design and Color (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>AVT 105</td>
<td>Three-Dimensional Design and Beyond</td>
<td>4</td>
</tr>
<tr>
<td>AVT 222</td>
<td>Drawing I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>AVT 323</td>
<td>Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>or AVT 324</td>
<td>Figure Drawing</td>
<td></td>
</tr>
<tr>
<td>ARTH 201</td>
<td>History of Western Art II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 374</td>
<td>Art Now</td>
<td>3</td>
</tr>
<tr>
<td>Three credits of:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AVT 301</td>
<td>Visual Voices Colloquium</td>
<td>3</td>
</tr>
<tr>
<td>AVT 307</td>
<td>Aesthetics</td>
<td>3</td>
</tr>
<tr>
<td>AVT 395</td>
<td>Writing for Artists</td>
<td>3</td>
</tr>
<tr>
<td>or AVT 396</td>
<td>Writing for Designers</td>
<td></td>
</tr>
<tr>
<td>AVT 472</td>
<td>Critical Theory in the Visual Arts</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ARTH 200</td>
<td>History of Western Art I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 203</td>
<td>Survey of Asian Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 204</td>
<td>Survey of Latin American Art (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 350</td>
<td>History of Photography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>AVT 318</td>
<td>History of Graphic Design</td>
<td></td>
</tr>
<tr>
<td>AVT 410</td>
<td>Experiential Design History</td>
<td></td>
</tr>
</tbody>
</table>

Select one from the following: | 4       |
| AVT 204 | Visual Thinking | 3       |
| AVT 305 | Creative Processes |         |
| AVT 309 | Art as Social Action |         |
| AVT 370 | Entrepreneurship in the Arts |         |
| AVT 371 | Visual Perception and the Arts |         |
| AVT 372 | Hip Hop Culture |         |
| AVT 374 | Sound Art I |         |
| AVT 380 | Thinking Through Animation |         |
AVT 407 Advanced Aesthetics
AVT 408 Visual Communication Theories
AVT 493 Teaching Visual Thinking Through Media, PK-12

3 credits of 300-400 level ARTH (p. 1240)

Breadth and Experience
Select three to four courses from the following: 5

AVT 215 Typography (Mason Core) (p. 142)
AVT 217 Introduction to Web Design
AVT 232 Painting I (Mason Core) (p. 142)
AVT 243 Printmaking I (Mason Core) (p. 142)
AVT 252 Darkroom Photography I (Mason Core) (p. 142)
AVT 253 Digital Photography I (Mason Core) (p. 142)
AVT 254 Photography
AVT 262 Sculpture I (Mason Core) (p. 142)
AVT 272 Interdisciplinary Arts (Mason Core) (p. 142)
AVT 280 Introduction to New Media Arts
AVT 326 Nontraditional Approaches to Drawing
AVT 327 Illustration
AVT 346 Digital Printmaking
AVT 374 Sound Art I
AVT 385 EcoArt (Mason Core) (p. 142)
AVT 496 Special Topics

Other courses as approved by program director

Professional Practices
AVT 413 Professional Design Practices 6
or AVT 453 Professional Practices

Synthesis
AVT 497 Senior Project (Mason Core) (p. 142)
or AVT 498 Senior Design Project (Mason Core) (p. 142)

Total Credits 58-59

1 Transfer students with less than three semesters remaining must take AVT 301 Visual Voices Colloquium for each remaining semester.
2 Students concentrating in Graphic Design must take AVT 396 Writing for Designers to fulfill this requirement.
3 Students concentrating in Graphic Design must take either AVT 318 History of Graphic Design or AVT 410 Experiential Design History to fulfill this requirement. Students concentrating in photography must complete ARTH 350 History of Photography (Mason Core) (p. 142) to fulfill this requirement.
4 Students concentrating in graphic design must take either AVT 370 Entrepreneurship in the Arts or AVT 408 Visual Communication Theories to meet this requirement. Students concentrating in photography must take AVT 204 Visual Thinking to fulfill this requirement.
5 At least one course must be a 200-level studio course. See each concentration for individual requirements.
6 All students concentrating in graphic design must complete AVT 413 Professional Design Practices.

Artbus Requirement
All AVT majors must meet the school's requirement of travel to galleries and museums through the Artbus program. Students meet the requirement by enrolling in AVT 300 Artbus Attendance. The procedure and requirements for enrollment in AVT 300 are the same as for any other class.

Freshman who enroll as AVT majors must register for AVT 300 Artbus Attendance 5 times during their course of study. Transfer students and students who change their majors to AVT must register for AVT 300 Artbus Attendance for the equivalent of each semester they are enrolled at Mason, up to a maximum of five semesters.

Concentrations
Select one concentration and complete the requirements therein.

Concentrations
• Drawing (DRW) (p. 836)
• Graphic Design (GD) (p. 836)
• InterArts (IA) (p. 837)
• New Media Art (NMA) (p. 837)
• Painting (PNT) (p. 837)
• Printmaking (PM) (p. 837)
• Sculpture (SCL) (p. 838)

Drawing (DRW)
All AVT majors concentrating in drawing must complete AVT 232 Painting I (Mason Core) (p. 142) under Breadth and Experience.

Code Title Credits
AVT 422 Drawing III 3
AVT 423 Drawing IV 3
Select 12 credits from 300-400 level AVT (p. 1250) 12
Select 6 credits from the following: 6

AVT 324 Figure Drawing
AVT 326 Nontraditional Approaches to Drawing
AVT 328 Mixed Media
AVT 333 Painting II
AVT 336 Experimental Painting
AVT 337 Figurative Painting
AVT 432 Painting III
AVT 433 Advanced Painting I
AVT 496 Special Topics 1

Other courses as approved by program director

Total Credits 24

1 Topic must be in Drawing.

Graphic Design (GD)
All AVT majors concentrating in graphic design must complete AVT 217 Introduction to Web Design and AVT 252 Darkroom Photography I (Mason Core) (p. 142) or AVT 253 Digital Photography I (Mason Core) (p. 142) under Breadth and Experience.

Code Title Credits
AVT 311 Graphic Design Methods and Principles 3
AVT 313 Editorial Design 3
AVT 414 Corporate Design and Branding 3
Select 15 credits from the following: 1
AVT 319 Mobile App Design
AVT 411 Motion Design
AVT 412 Advanced Typography
AVT 415 Web Design and Usability
AVT 416 Advertising Design
AVT 417 Package Design
AVT 419 Topics in Graphic Design
AVT 420 Advanced Web Design
Other courses as approved by program director

Total Credits 24

1 AVT 491 Independent Study in Art and Visual Technology or AVT 496 Special Topics may be taken with permission of the Area Director.

InterArts (IA)
The concentration in InterArts is an individualized program of study focused on arts research with multidisciplinary goals. Students concentrating in InterArts are engaged with both creative and conceptual inquiry in the development of artistic practice bolstered by knowledge of other disciplines. Often, this work exists at the interstices of artforms, and focuses on research on areas of interest to the student. InterArts students draw on the large resources of the School of Art and the university in creating an individualized program of studio courses and complementary courses for a total of 24 credits (12 credits of disciplinary focus and 12 credits of complementary study). In consultation with a faculty advisor, the student drafts a curriculum contract outlining the course of study, which is approved by the InterArts faculty. Admission to the concentration is based on acceptance into the BFA program via a portfolio review process and project approval from the InterArts faculty.

Code Title Credits
Twelve credits of disciplinary focus 12
Twelve credits of complementary study 12
Total Credits 24

New Media Art (NMA)
All majors concentrating in new media art must complete AVT 280 Introduction to New Media Arts under Breadth and Experience and AVT 180 New Media in the Creative Arts (Mason Core) (p. 142) for their IT Mason Core requirement.

Code Title Credits
Select 12 credits from 300-400 level AVT (p. 1250) 12
Select 12 credits from the following: 12
AVT 374 Sound Art I
AVT 376 Live Movies
AVT 382 2D Experimental Animation
AVT 383 3D Experimental Animation
AVT 385 EcoArt (Mason Core) (p. 142)
AVT 390 Video Art
AVT 482 Advanced Image Making
AVT 483 RS: Art and Interactivity
AVT 487 Advanced Topics: New Media Art

Other courses as approved by program director

Total Credits 24

Photography (PHO)
All AVT majors concentrating in photography must complete AVT 252 Darkroom Photography I (Mason Core) (p. 142) under Breadth and Experience.

Code Title Credits
AVT 353 Darkroom Photography II 3
AVT 356 Photo Studio Techniques 3
AVT 359 Photography Seminar 3
Select 6 credits from 300-400 level AVT (p. 1250) 6
Select 9 credits from the following: 9
AVT 354 Digital Photography II
AVT 357 Photobook: Concepts Form
AVT 454 Alternative Photo Processes
AVT 455 Digital Printing Techniques
AVT 457 Documentary Photography
AVT 458 Advanced Studio Lighting
Other courses as approved by program director

Total Credits 24

Printmaking (PM)

Code Title Credits
AVT 343 Printmaking II 3
Select 12 credits from 300-400 level AVT (p. 1250) 12
Select 9 credits from the following: 9
AVT 344 Bookmaking: Books Enclosures
AVT 345 Paper/Print/Book as Language
AVT 346 Digital Printmaking
AVT 442 Printmaking III
AVT 443 Printmaking IV
Other courses as approved by program director

Total Credits 24
Sculpture (SCL)

All AVT majors concentrating in sculpture must complete AVT 262 Sculpture I (Mason Core) (p. 142) under Breadth and Experience.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 363</td>
<td>Sculpture II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Three credits of</td>
<td></td>
</tr>
<tr>
<td>AVT 393</td>
<td>Field Experience in the Arts</td>
<td>3</td>
</tr>
<tr>
<td>or AVT 489</td>
<td>Internship in Art and Visual Technology</td>
<td></td>
</tr>
<tr>
<td>AVT 462</td>
<td>Sculpture III</td>
<td>3</td>
</tr>
<tr>
<td>AVT 463</td>
<td>Sculpture IV</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Additional coursework as approved by program director</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>24</td>
</tr>
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</table>

General Electives

<table>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Select 0-1 credits from General Electives</td>
<td>0-1</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>0-1</td>
</tr>
</tbody>
</table>

### Accelerated Master's

#### Art and Visual Technology, BFA/Art Education, Accelerated MAT

**Overview**

Undergraduates in art may apply to the accelerated master’s degree in Art Education. If accepted, students will be able to earn an Art and Visual Technology, BFA (p. 835) and an Art Education, MAT (p. 828) after satisfactory completion of 144 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and the completion in the Fall semester five and a half years later, but longer time frames may also be available.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admissions Requirements**

Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Academic Affairs Office. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

In addition to meeting the general university requirements for admission for graduate study, applicants must submit:

- Statement of intent and professional goals for entering the field
- Three letters of reference from faculty members or individuals who have firsthand knowledge of the applicant’s academic or professional capabilities
- Official score on Praxis Core or SAT equivalent
- MAT (for BFA students) portfolio must include 15 to 20 images that reflect artistic breadth and depth, including samples of work with ample attention to drawing and painting from observation. These works must be submitted through SlideRoom. All pieces must include the title of the piece, date, medium, and size of each work. Incomplete portfolios will not be considered.

**Teacher Endorsement**

Students for the MAT (for BFA students) must complete ALL endorsements, as well as the Praxis Core Exam and the PLUS art education foundational courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 493</td>
<td>Teaching Visual Thinking Through Media, PK-12</td>
<td>3</td>
</tr>
<tr>
<td>AVT 494</td>
<td>Strategies in Art Room: PK-12</td>
<td>3</td>
</tr>
<tr>
<td>AVT 495</td>
<td>Introduction to Art Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9</td>
</tr>
</tbody>
</table>

Students must meet Virginia Department of Education’s required semester credit hours in the following specific areas:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12 hours of two-dimensional media</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>12 hours of three-dimensional media</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>9 hours of cultural context and art history, judgment and criticism, aesthetics</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>3 hours of related areas of fine arts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>36</td>
</tr>
</tbody>
</table>

Students should work closely with their advisor to ensure they complete these course requirements through the BFA in Art and Visual Technology (p. 835) and MAT (p. 828) degrees.

**Accelerated Option Requirements**

As an undergraduate, the accelerated master’s student is required to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated on the application, candidates submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing and must meet all master’s degree requirements except for the two courses (6 credits) completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high-achieving undergraduates with permission of the School of Art. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 credit hours of graduation and must be approved by the Dean’s Office.
To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

Art and Visual Technology, BFA/Arts Management, Accelerated MA

Overview
Undergraduates in Art may apply to the accelerated master’s degree in Arts Management. If accepted, students will be able to earn an Art and Visual Technology, BFA (p. 835) and an Arts Management, MA (p. 813) after satisfactory completion of 150 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete all requirements.

This accelerated option is offered through joint cooperation between the School of Art (p. 825) and the Arts Management Program (p. 812).

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admissions Requirements
Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Academic Affairs Office. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

Accelerated Option Requirements
As an undergraduate, the accelerated master’s student is required to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, candidates submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing and must meet all master’s degree requirements except for the two courses (6 credits) completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Art. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 credit hours of graduation and must be approved by the Dean’s Office.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

Art and Visual Technology, BFA/Graphic Design, Accelerated MA

Overview
Undergraduates in Art may apply to the accelerated master’s degree in Graphic Design. If accepted, students will be able to earn an Art and Visual Technology, BFA (p. 835) and a Graphic Design, MA (p. 841) after satisfactory completion of 150 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The standard timeframe would be a start in the Fall and the completion in the Fall semester five and a half years later, but longer time frames may also be available.

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admissions Requirements
Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Academic Affairs Office. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

In addition to meeting the general university requirements for admission for graduate study, applicants must submit three letters of recommendation from faculty, or those who can evaluate the applicant’s academic potential; a sample of academic writing about art or graphic design, such as a paper from an art or design history course; and 20 examples of original design works in a format that is viewable via SlideRoom.

Accelerated Option Requirements
As an undergraduate, the accelerated master’s student is required to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, candidates submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing and must meet all master’s degree requirements except for the two courses (6 credits) completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.
**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Art. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 credit hours of graduation and must be approved by the Dean's Office.

To apply these credits to the master's degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master's Transition Form.

**Arts and Social Change Minor**

**Banner Code:** ASC

2050 Art and Design Building
Fairfax Campus
Phone: 703-993-8898
Email: avt@gmu.edu
Website: soa.gmu.edu

The minor leverages artistic and creative practice in an array of academic and social contexts. The goal is to infuse these practices into territories outside the traditional art world through research, participatory experimentation and documentary aesthetic aspects of social practice. With a focus on creative research and project production students experience direct engagement with communities while developing skills toward fostering positive change in communities via the arts.

**Admissions & Policies**

**Policies**

Students must complete an approved AVT course for their Mason Core Arts requirement.

Special topics courses will be noted in Patriot Web as a designated Arts and Social Change course.

Twelve credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 21

**Coursework**

<table>
<thead>
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<th>Code</th>
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<tr>
<td>AVT 390</td>
<td>Video Art</td>
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<tr>
<td>AVT 393</td>
<td>Field Experience in the Arts</td>
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</tr>
<tr>
<td>AVT 496</td>
<td>Special Topics 1</td>
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<tr>
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1 Must be a designated Arts and Social Change section.

**Two Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two courses from the following:</td>
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<td></td>
</tr>
<tr>
<td>AVT 309</td>
<td>Art as Social Action</td>
<td></td>
</tr>
<tr>
<td>AVT 345</td>
<td>Paper/Print/Book as Language</td>
<td></td>
</tr>
<tr>
<td>AVT 363</td>
<td>Sculpture II</td>
<td></td>
</tr>
<tr>
<td>AVT 374</td>
<td>Sound Art I</td>
<td></td>
</tr>
<tr>
<td>AVT 385</td>
<td>EcoArt (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 457</td>
<td>Documentary Photography</td>
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<td>Total Credits</td>
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**Two Courses**

<table>
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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Select two courses from the following:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>AMGT 410</td>
<td>Arts Advocacy and Community</td>
<td></td>
</tr>
<tr>
<td>AMGT 471</td>
<td>Introduction to Grant Writing</td>
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<tr>
<td>ANTH 370</td>
<td>Environment and Culture</td>
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</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
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<tr>
<td>CONF 302</td>
<td>Culture, Identity, and Conflict</td>
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<td>CONF 325</td>
<td>Dialogue and Difference</td>
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<td>FAVS 365</td>
<td>Documentary Filmmaking</td>
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<tr>
<td>FAVS 399</td>
<td>Special Topics in Film and Video Studies 1</td>
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<tr>
<td>FRLN 385</td>
<td>Multilingualism, Identity, and Power (Mason Core) (p. 142)</td>
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<td>INTS 337</td>
<td>Social Justice Consciousness and Personal Transformation</td>
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<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core) (p. 142)</td>
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<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
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<td>THR 490</td>
<td>Special Topics in Theater 1</td>
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<td>Or other courses as approved by program director</td>
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<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

1 Must be a designated Arts and Social Change section.

**Graphic Design Minor**

**Banner Code:** GD

2050 Art and Design Building
Fairfax Campus
Phone: 703-993-8898
Email: avt@gmu.edu
Website: soa.gmu.edu

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).
This minor is available to AVT majors. AVT majors must complete 12 credits unique to the minor.

It is recommended that non-AVT majors take AVT 104 Two-Dimensional Design and Color (Mason Core) (p. 142) for their Art Mason Core requirement as well as AVT 180 New Media in the Creative Arts (Mason Core) (p. 142) for the Information Technology (IT, except ethics) requirement. These courses are prerequisites for Graphic Design coursework.

### Requirements

#### Minor Requirements

Total credits: 15

Note: Students pursuing the Graphic Design minor are only responsible for the prerequisites required in the minor curriculum. Please contact the department for questions or issues when registering for classes.

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 215</td>
<td>Typography (Mason Core) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AVT 311</td>
<td>Graphic Design Methods and Principles</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AVT 313</td>
<td>Editorial Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or AVT 414</td>
<td>Corporate Design and Branding</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AVT 318</td>
<td>History of Graphic Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or AVT 410</td>
<td>Experiential Design History</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 15

#### Certificate Requirements

Total credits: 24

This certificate may be pursued on a full-or part-time basis.

<table>
<thead>
<tr>
<th>Foundation Courses</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 215</td>
<td>Typography (Mason Core) (p. 142)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AVT 217</td>
<td>Introduction to Web Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AVT 311</td>
<td>Graphic Design Methods and Principles</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or AVT 410</td>
<td>Experiential Design History</td>
<td>3</td>
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</table>

Total Credits 12

<table>
<thead>
<tr>
<th>Advanced Design Specialties Tracks</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Select 3 courses from one of the following tracks:</td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Branding &amp; Advertising Design</td>
<td>AVT 414</td>
<td>Corporate Design and Branding</td>
<td></td>
</tr>
<tr>
<td>AVT 416</td>
<td>Advertising Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or AVT 417</td>
<td>Package Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Design</td>
<td>AVT 319</td>
<td>Mobile App Design</td>
<td></td>
</tr>
<tr>
<td>AVT 411</td>
<td>Motion Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or AVT 415</td>
<td>Web Design and Usability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVT 420</td>
<td>Advanced Web Design</td>
<td></td>
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</table>

Total Credits 9

<table>
<thead>
<tr>
<th>Publication Design</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 313</td>
<td>Editorial Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVT 327</td>
<td>Illustration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or AVT 412</td>
<td>Advanced Typography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or AVT 414</td>
<td>Corporate Design and Branding</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

<table>
<thead>
<tr>
<th>Capstone</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 413</td>
<td>Professional Design Practices</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

#### Graphic Design Undergraduate Certificate

Banner Code: AR-CERB-GD

2050 Art and Design Building
Fairfax Campus

Phone: 703-993-8898
Email: avt@gmu.edu
Website: soa.gmu.edu

The Graphic Design Undergraduate Certificate is for prospective students with a 4-year baccalaureate undergraduate degree from an accredited institution who seek to gain the skills and competency to advance into a career in graphic design. It encompasses a specific body of knowledge and practice that prepares candidates for rewarding positions in the design field.

This certificate may be completed under part or full time basis.

#### Admissions & Policies

**Admissions**

There is not a portfolio review required for admission, but prospective students—with graphic design experience—should consider scheduling an interview with the program director prior to applying. Tuition is billed at the undergraduate rate, and most students complete certificate requirements in four semesters.

Students entering the certificate must be able to demonstrate basic skills in visual language and should have working knowledge of professional graphic design software, or must take AVT 180 New Media in the Creative Arts (Mason Core) (p. 142) in addition to other required courses.

#### Graphic Design, MA

Banner Code: AR-MA-GD

2005 Art and Design Building
Fairfax Campus

Phone: 703-993-8898
The MA in Graphic Design offers students a comprehensive study and preparation for the graphic design profession. The program calls for 36 credits, which includes courses in typography, web design, image making, and brand design. The broad range of study is intended to develop professionals prepared for an ever-expanding graphic design field.

Admissions & Policies

Admissions

Application deadlines are as published by the University. Applicants should have an earned BA or BFA degree in Graphic Design from an accredited college or university, with a GPA of 3.00 in art courses. However, applicants with a BA or BS in another discipline, and work experience in the field may also apply for admission. Student should schedule an interview with design faculty prior to admission.

In addition to meeting the general university requirements for admission for graduate study, applicants must submit three letters of recommendation from faculty members, or those who can evaluate the applicant’s academic potential; a sample of academic writing about art or graphic design, such as a paper from an art or design history course; and a portfolio with 20 examples of design works that are SlideRoom-compatible.

Portfolio Guidelines

The applicant’s portfolio is a major selection criterion for graduate admission and should represent the applicant’s most accomplished work.

Applicants’ portfolio items are considered part of the application for admission and, thus, cannot be returned. Please do not send original materials. The portfolio and all other application materials should be submitted to the Office of Graduate Admissions. For more information, contact the School of Art at 703-993-8898.

Studios

The School of Art is located in the Art and Design Building which houses well equipped studios for drawing, painting, photography, printmaking, and sculpture, as well as six computer-equipped studios that cross platforms and are installed with current software applications used for two dimensional imaging, three-dimensional modeling, animation, video production, sound editing, multimedia authoring, photography, and web publishing.

Policies

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

See College of Visual and Performing Arts (p. 803) for policies specific to the college.

Requirements

Degree Requirements

Total credits: 36

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 8 credits from the following:</td>
<td></td>
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</tr>
<tr>
<td>AVT 519</td>
<td>Special Topics in Graphic Design</td>
<td>8</td>
</tr>
<tr>
<td>AVT 596</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>AVT 599</td>
<td>Special Topics in Art and Visual Technology</td>
<td></td>
</tr>
<tr>
<td>Or other course as approved by director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVT 611</td>
<td>Graduate Design Seminar</td>
<td>3</td>
</tr>
<tr>
<td>AVT 612</td>
<td>Independent Project Research</td>
<td>1</td>
</tr>
<tr>
<td>AVT 613</td>
<td>Experiential Design History</td>
<td>3</td>
</tr>
<tr>
<td>AVT 617</td>
<td>Advanced Typography</td>
<td>4</td>
</tr>
<tr>
<td>CVPA 600</td>
<td>CVPA Graduate ProSeminar (Must be taken within the student's first 2 semesters)</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Credits 19

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 13 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVT 519</td>
<td>Special Topics in Graphic Design (1-13 credits)</td>
<td>13</td>
</tr>
<tr>
<td>AVT 614</td>
<td>Brand Identity Design</td>
<td></td>
</tr>
<tr>
<td>AVT 619</td>
<td>Advanced Web Design</td>
<td></td>
</tr>
<tr>
<td>AVT 596</td>
<td>Independent Study (1-5 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 13

Final Project

The final steps for completion of the MA in Graphic Design are a substantial final project that calls upon all the skills of a working designer.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 794</td>
<td>Graphic Design Project</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 4

Accelerated Master’s

Art and Visual Technology, BFA/Graphic Design, Accelerated MA

Overview

Undergraduates in Art may apply to the accelerated master’s degree in Graphic Design. If accepted, students will be able to earn an Art and Visual Technology, BFA (p. 835) and a Graphic Design, MA (p. 841) after satisfactory completion of 150 credits.
Students choosing the accelerated option must fulfill all university requirements for the master's degree. The standard timeframe would be a start in the Fall and the completion in the Fall semester five and a half years later, but longer time frames may also be available.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admissions Requirements
Applicants to accelerated master's programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master's Program Application, available from the College of Visual and Performing Arts (CVPA) Academic Affairs Office. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

In addition to meeting the general university requirements for admission for graduate study, applicants must submit three letters of recommendation from faculty, or those who can evaluate the applicant's academic potential; a sample of academic writing about art or graphic design, such as a paper from an art or design history course; and 20 examples of original design works in a format that is viewable via SlideRoom.

Accelerated Option Requirements
As an undergraduate, the accelerated master's student is required to complete the two graduate courses indicated on their Accelerated Master's Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, candidates submit the Bachelor's/Accelerated Master's Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing and must meet all master's degree requirements except for the two courses (6 credits) completed as undergraduates. Students will begin their master's program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Art. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 credit hours of graduation and must be approved by the Dean's Office.

To apply these credits to the master's degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master's Transition Form.

Illustration Minor
Banner Code: ILLU

Admissions & Policies

Admissions
Prospective Illustration Minor applicants are required to earn a 3.0 GPA in both AVT 222 Drawing I (Mason Core) (p. 142) and AVT 323 Drawing II prior to applying. A portfolio review is required for admission.

Policies
Eight credits of coursework must be unique to the minor, with a minimum 2.00 GPA earned in all courses applied to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

Requirements

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 324</td>
<td>Figure Drawing</td>
<td>3</td>
</tr>
<tr>
<td>AVT 327</td>
<td>Illustration</td>
<td>3</td>
</tr>
<tr>
<td>AVT 346</td>
<td>Digital Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>AVT 382</td>
<td>2D Experimental Animation</td>
<td>3</td>
</tr>
<tr>
<td>AVT 370</td>
<td>Entrepreneurship in the Arts</td>
<td>3</td>
</tr>
<tr>
<td>AVT 413</td>
<td>Professional Design Practices</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

Photography Minor
Banner Code: PHO

2050 Art and Design Building
Fairfax Campus
Phone: 703-993-8898
Email: avt@gmu.edu
Website: soa.gmu.edu

The minor provides opportunities for students to develop a personal vision in response to photography's role in contemporary art and culture. Various studio classes emphasize a range of techniques in the production of traditional, digital and experimental imagery. Critical thinking combined with studio/lab experience enhance this comprehensive introduction to the field and practice of photography.

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor with a minimum 2.00 GPA earned in all courses applied to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

This minor is available to AVT majors. AVT majors must complete 12 credits unique to the minor.
### Requirements

#### Minor Requirements

**Total credits: 16**

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 252</td>
<td>Darkroom Photography I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>or AVT 253</td>
<td>Digital Photography I (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

| AVT 353 | Darkroom Photography II | 3       |
| or AVT 354 | Digital Photography II |         |

| AVT 356 | Photo Studio Techniques | 3       |

**Total Credits**

**10**

**Two Courses**

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 350</td>
<td>History of Photography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>AVT 353</td>
<td>Darkroom Photography II (if not used above)</td>
<td>3</td>
</tr>
<tr>
<td>AVT 354</td>
<td>Digital Photography II (if not used above)</td>
<td></td>
</tr>
<tr>
<td>AVT 355</td>
<td>Photography Seminar</td>
<td></td>
</tr>
<tr>
<td>AVT 453</td>
<td>Professional Practices</td>
<td></td>
</tr>
<tr>
<td>AVT 454</td>
<td>Alternative Photo Processes</td>
<td></td>
</tr>
<tr>
<td>AVT 455</td>
<td>Digital Printing Techniques</td>
<td></td>
</tr>
<tr>
<td>AVT 457</td>
<td>Documentary Photography</td>
<td></td>
</tr>
<tr>
<td>AVT 458</td>
<td>Advanced Studio Lighting</td>
<td></td>
</tr>
</tbody>
</table>

Or other courses as approved by program director

**Total Credits**

**6**

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#### Web Design Minor

**Banner Code: WDSN**

2050 Art and Design Building
Fairfax Campus

Phone: 703-993-8898
Website: soa.gmu.edu

### Admissions & Policies

#### Policies

Art and Visual Technology (AVT) majors must complete 12 credits unique to the minor. It is recommended that non-AVT majors take AVT 104 Two-Dimensional Design and Color (Mason Core) (p. 142) for their Mason Core (p. 142) Arts requirement as well as AVT 180 New Media in the Creative Arts (Mason Core) (p. 142) for the Mason Core (p. 142) Information Technology (IT, except ethics) requirement. These courses are prerequisites for Web Design coursework. For policies governing all minors, see the Undergraduate Policies (p. 87) section of this catalog.

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### Requirements

#### Minor Requirements

**Total credits: 15**

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT 215</td>
<td>Typography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>AVT 217</td>
<td>Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>AVT 311</td>
<td>Graphic Design Methods and Principles</td>
<td>3</td>
</tr>
<tr>
<td>AVT 411</td>
<td>Motion Design</td>
<td>3</td>
</tr>
<tr>
<td>or AVT 420</td>
<td>Advanced Web Design</td>
<td></td>
</tr>
<tr>
<td>AVT 415</td>
<td>Web Design and Usability</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**

**15**

**Note:** Students pursuing the Web Design minor are responsible for fulfilling the prerequisites required in the minor curriculum. Please contact the department for questions or issues when registering for classes.

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#### School of Dance

**Susan Shields, Director**

A300 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1114
Website: dance.gmu.edu

### Faculty

#### School Faculty

**Professors**

Lepore, Miller, Shields (director)

**Associate Professors**

d’Amboise (Heritage Professor), Joyce, Price, Reedy

**Assistant Professor**

Jeffery

**Adjunct Faculty**

Boyle D’Arcy, Brown, Clark, Hansen-Honeycutt, Kennedy, Matthews, Pilkington, Rocher, Rowley, Salters, Spatz, Summerall, Windom, Zukeri

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### Requirements & Policies

#### Requirements & Policies

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#### BFA/BA Admissions Requirements

The School of Dance offers a BFA and a BA. Entrance to either program is by audition. Information about the audition process, including dates and audition application, can be found on the School of Dance website.
Master of Fine Arts, Visual and Performing Arts, Concentration in Dance

A Visual and Performing Arts, Master of Fine Arts with a concentration in Dance is offered by the College of Visual and Performing Arts. For specific information, please refer to the Visual and Performing Arts, MFA (p. 806).

Writing-Intensive Requirement

The university requires all students to complete at least one course designated “writing intensive” in their major at the 300-level or above. Students in the Dance, BFA and BA fulfill this requirement by successfully completing DANC 390 Dance History I (Mason Core) (p. 142) or DANC 391 Dance History II (Mason Core) (p. 142).

Policies

See CVPA Requirements and Policies (p. 803).

Programs

- Dance Appreciation Minor
- Dance, BA
- Dance, BFA
- World Dance Minor

Dance, BA

Banner Code: AR-BA-DANC

A300 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1114
Email: dance@gmu.edu
Website: dance.gmu.edu/academics/dance-programs

The BA degree is a 120-credit general program of dance study within a liberal arts degree framework.

Admissions & Policies

Admissions

Entrance to the program is by audition. Information about the audition process, including dates and audition application, can be found on the school webpage (http://dance.gmu.edu), or by calling the dance office at 703-993-1114. Admission to the university is determined by the Admissions Office.

Policies

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements

Total credits: 120

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
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</table>

Foundation Requirements

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td>Information Technology (p. 143)</td>
<td>3</td>
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</table>

Core Requirements

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
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</table>

Synthesis

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthesis (p. 153)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 34

1 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ENGH 101 Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) or ENGH 101 Composition (Mason Core) (p. 142), as well as in ENGH 302 Advanced Composition (Mason Core) (p. 142), to fulfill degree requirements.

2 must include a laboratory science

Dance Major Core

Additional technique and performance credits beyond those required in the major core may be applied to dance electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 114</td>
<td>Rhythmic Analysis and Music Resources for Dance</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>DANC 318</td>
<td>Global Perspectives: World Dance Forms (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>DANC 418</td>
<td>Global Dance Intensive (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>Approved university global understanding requirement (p. 146)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANC 150</td>
<td>Dance Improvisation</td>
<td>3</td>
</tr>
<tr>
<td>DANC 170</td>
<td>Orientation to Dance Production</td>
<td>1</td>
</tr>
<tr>
<td>DANC 190</td>
<td>First Year Seminar</td>
<td>0</td>
</tr>
<tr>
<td>DANC 210</td>
<td>Anatomy and Kinesiology for Dance</td>
<td>3</td>
</tr>
<tr>
<td>DANC 251</td>
<td>Dance Composition I</td>
<td>3</td>
</tr>
<tr>
<td>DANC 252</td>
<td>Dance Composition II</td>
<td>3</td>
</tr>
</tbody>
</table>
DAN 270 Dance Production Lab 1

Two credits of
DAN 370 Dance Performance 2
or DAN 371 Residency Workshop

DAN 390 Dance History I (Mason Core) (p. 142) 3
DAN 391 Dance History II (Mason Core) (p. 142) 3
DAN 454 Methods of Teaching Dance (Mason Core) (p. 142) 3

Select 9 credits from the following: 9
DAN 325 Modern/Contemporary Dance III (Mason Core) (p. 142) 2
DAN 425 Modern/Contemporary Dance IV (Mason Core) (p. 142) 2

Select 6 credits from the following: 6
DAN 345 Ballet III (Mason Core) (p. 142)
DAN 445 Ballet IV (Mason Core) (p. 142)

Dance Electives
Select 10 credits from the following: 10
DAN 118 World Dance (Mason Core) (p. 142)
DAN 119 Dance in Popular Culture: Afro-Latino Dance (Mason Core) (p. 142)
DAN 120 Special Topics in Dance
DAN 131 Beginning Jazz Technique (Mason Core) (p. 142)
DAN 161 Beginning Tap Dance (Mason Core) (p. 142)
DAN 225 Modern/Contemporary Dance II (Mason Core) (p. 142)
DAN 231 Intermediate Jazz Technique (Mason Core) (p. 142)
DAN 245 Ballet II (Mason Core) (p. 142)
DAN 318 Global Perspectives: World Dance Forms (Mason Core) (p. 142)
DAN 324 Introduction to Dance Conditioning
DAN 325 Modern/Contemporary Dance III (Mason Core) (p. 142)
DAN 331 Advanced Jazz Dance (Mason Core) (p. 142)
DAN 345 Ballet III (Mason Core) (p. 142)
DAN 370 Dance Performance
DAN 371 Residency Workshop
DAN 399 Independent Study
DAN 418 Global Dance Intensive (Mason Core) (p. 142)
DAN 420 Special Topics in Dance
DAN 425 Modern/Contemporary Dance IV (Mason Core) (p. 142)
DAN 445 Ballet IV (Mason Core) (p. 142)
DAN 453 Teaching Creative Movement
Or other courses as approved by the School of Dance Director or Advisor

Total Credits 56

1. Meets Mason Core (p. 142) global understanding requirement.
2. Three credits will meet the Mason Core (p. 142) arts requirement.

**Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAN 390</td>
<td>Dance Performance</td>
<td>2</td>
</tr>
<tr>
<td>DAN 391</td>
<td>Dance History II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DAN 454</td>
<td>Methods of Teaching Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 9 credits from the following: 9
DAN 325 Modern/Contemporary Dance III (Mason Core) (p. 142) 2
DAN 425 Modern/Contemporary Dance IV (Mason Core) (p. 142) 2

Select 6 credits from the following: 6
DAN 345 Ballet III (Mason Core) (p. 142)
DAN 445 Ballet IV (Mason Core) (p. 142)

Dance Electives
Select 10 credits from the following: 10
DAN 118 World Dance (Mason Core) (p. 142)
DAN 119 Dance in Popular Culture: Afro-Latino Dance (Mason Core) (p. 142)
DAN 120 Special Topics in Dance
DAN 131 Beginning Jazz Technique (Mason Core) (p. 142)
DAN 161 Beginning Tap Dance (Mason Core) (p. 142)
DAN 225 Modern/Contemporary Dance II (Mason Core) (p. 142)
DAN 231 Intermediate Jazz Technique (Mason Core) (p. 142)
DAN 245 Ballet II (Mason Core) (p. 142)
DAN 318 Global Perspectives: World Dance Forms (Mason Core) (p. 142)
DAN 324 Introduction to Dance Conditioning
DAN 325 Modern/Contemporary Dance III (Mason Core) (p. 142)
DAN 331 Advanced Jazz Dance (Mason Core) (p. 142)
DAN 345 Ballet III (Mason Core) (p. 142)
DAN 370 Dance Performance
DAN 371 Residency Workshop
DAN 399 Independent Study
DAN 418 Global Dance Intensive (Mason Core) (p. 142)
DAN 420 Special Topics in Dance
DAN 425 Modern/Contemporary Dance IV (Mason Core) (p. 142)
DAN 445 Ballet IV (Mason Core) (p. 142)
DAN 453 Teaching Creative Movement
Or other courses as approved by the School of Dance Director or Advisor

Total Credits 30

2. After fulfilling one of these options, the remaining general electives may be taken inside or outside of the school. All students are required to take a minimum of 45 credits of upper-division courses (300 and 400 level).

**Dance, BFA**

Banner Code: AR-BFA-DANC

A300 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1114
Email: dance@gmu.edu
Website: dance.gmu.edu/academics/dance-programs

The BFA in Dance is a performance-oriented contemporary dance program designed to prepare students professionally as performers, choreographers, educators, and active leaders of the dance community. Students in this program demonstrate technical mastery and devote their college study to an intensive and comprehensive dance curriculum.

Daily technical training in modern dance and ballet, and numerous performance opportunities develops a versatile dancer. Student progress in the BFA program is assessed consistently. Because of the professional nature of the BFA degree, the program requires completion of 126 credits of coursework.

**Admissions & Policies**

**Admissions**

Entrance to the program is by audition. Information about the audition process, including dates and audition application, can be found on the school web page (http://dance.gmu.edu), or by calling the dance office at 703-993-1114. Admission to the university is determined by the Admissions Office.

**Policies**

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).
Requirements

Degree Requirements
Total credits: 126

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Foundation Requirements

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td>Information Technology (p. 143)</td>
<td>3</td>
</tr>
</tbody>
</table>

Core Requirements

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 28

1 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ENGH 101 Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) or ENGH 101 Composition (Mason Core) (p. 142), as well as in ENGH 302 Advanced Composition (Mason Core) (p. 142), to fulfill degree requirements.

2 must include one laboratory science

Dance Major Core

Additional technique and performance credits beyond those required in the major core may be applied to dance electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 114</td>
<td>Rhythmic Analysis and Music Resources for Dance</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 318</td>
<td>Global Perspectives: World Dance Forms (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 418</td>
<td>Global Dance Intensive (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Approved university global understanding requirement (p. 146)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 150</td>
<td>Dance Improvisation</td>
<td>3</td>
</tr>
<tr>
<td>DANC 170</td>
<td>Orientation to Dance Production</td>
<td>1</td>
</tr>
<tr>
<td>DANC 190</td>
<td>First Year Seminar</td>
<td>0</td>
</tr>
<tr>
<td>DANC 210</td>
<td>Anatomy and Kinesiology for Dance</td>
<td>3</td>
</tr>
<tr>
<td>DANC 251</td>
<td>Dance Composition I</td>
<td>3</td>
</tr>
<tr>
<td>DANC 252</td>
<td>Dance Composition II</td>
<td>3</td>
</tr>
<tr>
<td>DANC 270</td>
<td>Dance Production Lab</td>
<td>1</td>
</tr>
<tr>
<td>DANC 360</td>
<td>Choreography</td>
<td>3</td>
</tr>
<tr>
<td>DANC 362</td>
<td>RS: Directed Choreography</td>
<td>1</td>
</tr>
</tbody>
</table>

Four credits of

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 370 or DANC 371</td>
<td>Dance Performance Residency Workshop</td>
<td>4</td>
</tr>
<tr>
<td>DANC 372</td>
<td>Advanced Dance Production</td>
<td>1</td>
</tr>
<tr>
<td>DANC 390</td>
<td>Dance History I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 391</td>
<td>Dance History II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 410</td>
<td>Introduction to Contemporary Movement Theories</td>
<td>3</td>
</tr>
<tr>
<td>DANC 454</td>
<td>Methods of Teaching Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 490</td>
<td>Senior Dance Seminar (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 18 credits from the following: 18

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 325</td>
<td>Modern/Contemporary Dance III (Mason Core) (p. 142)</td>
<td>2</td>
</tr>
<tr>
<td>DANC 425</td>
<td>Modern/Contemporary Dance IV (Mason Core) (p. 142)</td>
<td>2</td>
</tr>
</tbody>
</table>

Select 9 credits from the following: 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 345</td>
<td>Ballet III (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 445</td>
<td>Ballet IV (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

DANCE Electives

Select 15 credits from the following: 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 119</td>
<td>Dance in Popular Culture: Afro-Latino Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 120</td>
<td>Special Topics in Dance</td>
<td>3</td>
</tr>
<tr>
<td>DANC 131</td>
<td>Beginning Jazz Technique (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 161</td>
<td>Beginning Tap Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 225</td>
<td>Modern/Contemporary Dance II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 231</td>
<td>Intermediate Jazz Technique (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 245</td>
<td>Ballet II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 318</td>
<td>Global Perspectives: World Dance Forms (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 324</td>
<td>Introduction to Dance Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>DANC 325</td>
<td>Modern/Contemporary Dance III (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 331</td>
<td>Advanced Jazz Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 345</td>
<td>Ballet III (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 362</td>
<td>RS: Directed Choreography</td>
<td>3</td>
</tr>
<tr>
<td>DANC 370</td>
<td>Dance Performance</td>
<td>3</td>
</tr>
<tr>
<td>DANC 371</td>
<td>Residency Workshop</td>
<td>3</td>
</tr>
<tr>
<td>DANC 399</td>
<td>Independent Study</td>
<td>3</td>
</tr>
<tr>
<td>DANC 410</td>
<td>Introduction to Contemporary Movement Theories</td>
<td>3</td>
</tr>
<tr>
<td>DANC 318</td>
<td>Global Dance Intensive (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 420</td>
<td>Special Topics in Dance</td>
<td>3</td>
</tr>
<tr>
<td>DANC 425</td>
<td>Modern/Contemporary Dance IV (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 445</td>
<td>Ballet IV (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
Dance Appreciation Minor

Banner Code: DNCA

A300 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1114
Email: dance@gmu.edu
Website: dance.gmu.edu/academics/dance-programs

The minor offers students the opportunity to study a variety of movement styles and understand dance in its historical and cultural context.

Admissions & Policies

Policies

A maximum of four transfer credits may be applied to the minor. Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 21

Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 101</td>
<td>Dance Appreciation (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 6

Three Courses

Select three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 125</td>
<td>Modern/Contemporary Dance I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

Note:

Students with prior experience in ballet and/or modern dance may, with permission of instructor, take all 9 credits of technique courses at the 200 level.

All students pursuing the minor must demonstrate a basic level of training in both modern dance and ballet, and therefore, complete 9 credits of modern and ballet technique.

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVT</td>
<td>(p. 1250)</td>
<td>12</td>
</tr>
<tr>
<td>ARTH</td>
<td>(p. 1240)</td>
<td></td>
</tr>
<tr>
<td>MUSI</td>
<td>(p. 1955)</td>
<td></td>
</tr>
<tr>
<td>THR</td>
<td>(p. 2261)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

DANC 118 World Dance (Mason Core) (p. 142) fulfills the global understanding requirement. Students who choose to take this course twice for the minor must select two different world cultures.

Notes

Mason does not guarantee the availability of these courses every semester; some are offered in alternate years.
World Dance Minor

Banner Code: DNCW

A300 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1114
Website: dance.gmu.edu

The minor in World Dance develops knowledge and appreciation of the vast diaspora of the philosophies, history, and cultural diversity of world dance forms.

Admissions & Policies

For policies governing all minors, see Undergraduate Policies (p. 87).

Requirements

Minor Requirements

Total credits: 21

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 101</td>
<td>Dance Appreciation (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Six credits of 1</td>
<td>World Dance (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>DANC 118</td>
<td>Dance in Popular Culture: Afro-Latino Dance (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

1 Must complete two different world cultures.

Electives

Choose two electives from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 125</td>
<td>Modern/Contemporary Dance I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>DANC 131</td>
<td>Beginning Jazz Technique (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>DANC 145</td>
<td>Ballet I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>DANC 225</td>
<td>Modern/Contemporary Dance II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>DANC 231</td>
<td>Intermediate Jazz Technique (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>DANC 245</td>
<td>Ballet II (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 303</td>
<td>Topics in Ethnomusicology</td>
<td></td>
</tr>
<tr>
<td>DANC 331</td>
<td>Advanced Jazz Dance (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>DANC 418</td>
<td>Global Dance Intensive (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Or other courses approved by the School of Dance Director or Advisor

Total Credits 6

Note:
Mason does not guarantee the availability of these courses every semester.

School of Music

Linda Monson, Director

A417 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1380
Website: music.gmu.edu

Undergraduate Programs

Bachelor's Degrees

The two undergraduate degree programs offered through the School of Music, the bachelor of arts (BA) in music and the bachelor of music (BM), prepare students for graduate work in music and music literature; research and professional work in musical activities; and state licensure, or certification, to teach vocal and choral or instrumental music at the elementary and secondary school levels.

The School of Music enables students to pursue worthwhile vocational goals as teachers, performers, conductors, composers, and in music technology. The School of Music also seeks to educate its students to reflect a concern for cultural and humanistic values as future ambassadors and advocates of music and other arts. Through innovative learning experiences, the School of Music provides all students in the BA and BM programs with opportunities to become effective musicians, teachers, and advocates of music. Teaching music is the principal area in which students can find employment in private studios, public and private schools, academies, and higher education within the ever-changing workplace. Because of this, all music majors at Mason receive some training in the teaching of music.

The School of Music also recognizes the critical outreach role it provides in serving students from all majors, as well as members of the community who significantly benefit from the values and experiences of an education in music. The School of Music seeks to provide unique educational opportunities through its various course offerings, workshops, presentations, and performances for those seeking music enrichment.

Teacher Licensure

Undergraduate students seeking certification to teach vocal and choral or instrumental music at the elementary and secondary levels must earn the BM degree as specified under Concentration in Music Education section in this section. Students who have earned a baccalaureate degree and are seeking state licensure to teach music must also complete this sequence of courses, which constitute a state-approved program for teacher education in music.
Graduate Certificates

Music Education Licensure for PK-12
This graduate certificate is designed as a pathway to music education licensure for music students without an undergraduate degree in music education. Upon completing this certificate students will be equipped with the necessary skills, knowledge, and experience to obtain music teaching licensure from the Commonwealth of Virginia.

Music for Well-Being Graduate Certificate
The Graduate Certificate in Music for Well-Being builds on courses currently offered in the School of Music and on the school-wide initiative around well-being as an important consideration and subject of study for all musicians.

Expanding and supplementing courses developed in connection with the undergraduate minor in Music for Well-Being, the certificate allows students to explore the connections between music and consciousness and between vibration, meditation, and well-being. The graduate certificate gives students a thorough grounding in theory and practice and includes instruction in compositional and improvisational approaches. Although there is some overlap in subject matter, this is not intended as a program in music therapy. The certificate is conceived as a compliment to the programs focused on mindfulness and well-being that are a priority across the university. The success of the long-running Healing Arts Ensemble at the graduate level, as well as the undergraduate level, and the growth in the new minor in Music for Well-Being indicates the potential level of student interest in the program.

This certificate may be pursued in either part-time or full-time status.

Instrumental Performance Artist Graduate Certificate
The certificate is a specialized, graduate-level program for advanced musicians who desire to further develop and refine their performance art. The certificate program is a two-year course of study requiring at least two consecutive semesters of residence. A total of 32 credits is required. Advisor’s approval is required for each semester’s enrollment.

Piano Performance Artist Certificate
The certificate is a specialized, graduate-level program for advanced musicians who desire to further develop and refine their performance art. The certificate program is a two-year course of study requiring at least two consecutive semesters of residence. A total of 32 credits is required. Advisor’s approval is required for each semester’s enrollment.

Vocal Performance Artist Certificate
The certificate is a specialized, graduate-level program for advanced musicians who desire to further develop and refine their performance art. The certificate program is a two-year course of study requiring at least two consecutive semesters of residence. A total of 32 credits is required. Advisor’s approval is required for each semester’s enrollment.

Graduate Programs

Accelerated Master’s Option
The School of Music offers a Music, BM (Performance)/Music, Accelerated MM (Performance) option which allows undergraduate students to take graduate classes that can be used towards a designated master’s degree. Undergraduates who wish to pursue the accelerated master’s route should talk to their academic advisor first to see if they qualify. Students must be within 75-90 credits of their bachelor’s program to be eligible to apply; those who have earned more than 90 credits will not be considered. Students must be approved by their academic advisor and formally apply and be accepted to the master’s program through an accelerated master’s application. For more information about admissions requirements and the application process, students should visit the website (http://cvpa.gmu.edu).

Music, MM
The MM degree is offered as an educational channel to meet the intellectual and career needs of qualified students. It is a comprehensive and advanced program of study with a choice of concentrations in performance, music education, composition, conducting, jazz studies, and pedagogy. The MM with a concentration in music education does not provide licensure to teach music in public or private schools.

Music Education, Ph.D.
The PhD in music education, a research-intensive degree, focuses on the gathering, processing, and interpretation of information. Students in the PhD program take seminars and topics courses in music education, as well as research courses through the College of Education and Human Development. PhD graduates are expected to demonstrate the ability to communicate significant concepts of music education.

The PhD in music education requires 60 credits beyond the master’s degree in music.

Doctor of Musical Arts (DMA)
The DMA concentrations are composition, conducting, and performance. While these concentrations share some required coursework, each is also distinct in course requirements. Professional musicians earn the DMA to enhance and extend their knowledge and practice within their area of specialization. The DMA student focuses on the profession of music performance, conducting, or composition, as well as the theory and practice of those disciplines.

The Doctor of Musical Arts (DMA) degree requires 60 credits beyond the master’s degree in music.

Faculty

School Faculty

Professors
Balakerskaia, Billingham, Camphouse, Carroll, Engebretson, Layendecker (Heritage Chair), Maiello, Miller, Monson (Director), Rendler, G. Smith

Associate Professors
Aler, Ciorba, Gillam, Guessford, Kilkenney, Nickens, T. Owens (Associate Director), G. Robinson

Assistant Professors
Alvarez, D. Purcell, Green, Huang, Lavengood, Mulcahy, Walsh

Administrative Faculty
Freer

Adjunct Faculty
Admission Requirements
Entrance to all music degree programs is by audition. Arrangements for an audition must be made in advance by contacting the School of Music before the scheduled audition date. Auditions are held approximately once per month. Audition dates and audition application forms are available through the School of Music (http://music.gmu.edu).

Program Requirements
A fundamentals of music test is given prior to the first week of classes to all students enrolled in MUSI 115 Introduction to Music Theory. Call for additional information.

Competency placement tests are required of all transfer students who wish to present transfer credit in any of the following areas: music theory, aural skills, and keyboard skills.

Students must earn a minimum 2.00 cumulative GPA in their major or higher, if required by their program.

Policies
See CVPA Requirements and Policies (p. 803).

Termination from the Major
No School of Music course that is required for the major may be unsuccessfully attempted more than three times. A grade of F constitutes an unsuccessful attempt in any given course. Those students who do not successfully complete such a course within three attempts will be terminated from the major. For more information, see AP.5.2.4 Termination from the Major (p. 88).

Writing-Intensive Requirement
Mason requires all students to complete at least one course designated "writing intensive" in their major at the 300 level or above. Students majoring in music may fulfill this requirement by successfully completing MUSI 332 Music History in Society II or MUSI 438 Music History in Society B. Students who transfer this course into Mason may be required to repeat it or enroll in some other suitable course to fulfill the writing intensive requirement.

Programs

Artist Graduate Certificate
Banner Code: AR-CERG-ARTC

Admissions & Policies

Admissions
Application Materials
- An artist certificate application and current résumé
- A bachelor's degree in music or equivalent (as evaluated by the School of Music Admissions Committee)
- Transcripts from previous educational institutions
- One-page written statement of student's goals and interest in the program
- Two letters of recommendation
- Recording of a live performance of solo works from the standard repertory submitted via SlideRoom.

Applicants must perform an audition recital and be interviewed on the Mason Campus. Applicants will be notified of the date and time of the audition and interview.

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements
Certificate Requirements
Total credits: 22-32
This certificate may be pursued on a full- or part-time basis.

Requirements
Students must complete all requirements within a concentration. Total credits varies dependent on the concentration.

Concentration in Instrumental Performance (IPFM)
Total credits: 32

Studies in Performance

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 721</td>
<td>Applied Music</td>
<td></td>
</tr>
<tr>
<td>MUSI 724</td>
<td>Applied Music in Woodwind</td>
<td></td>
</tr>
<tr>
<td>MUSI 725</td>
<td>Applied Music in Brass</td>
<td></td>
</tr>
</tbody>
</table>
MUSI 727 Applied Music in Percussion
MUSI 592 Topics in Music 2
Three credits of 3
MUSI 790 Graduate Recital 1
Total Credits 17
1 Two semesters of solo recitals and one semester of chamber recital.

Support Studies in Literature and Pedagogy

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 630</td>
<td>Topics in Music History and Literature</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 730</td>
<td>Advanced Topics in Music History</td>
<td></td>
</tr>
<tr>
<td>MUSI 551</td>
<td>Keyboard Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 553</td>
<td>Instrumental Pedagogy and Literature</td>
<td></td>
</tr>
<tr>
<td>MUSI 695</td>
<td>Teaching Internship</td>
<td>2</td>
</tr>
</tbody>
</table>
Total Credits 8

Support Studies in Accompanying or Ensemble plus Electives

Code | Title                                      | Credits |
Select Accompanying or Ensemble: 7
Accompanying:
MUSI 571 | Techniques of Accompanying I  |         |
MUSI 685 | Graduate Chamber Ensemble               |         |
500-700 level MUSI electives
Ensemble:
MUSI 682 | Wind Symphony 1                          |         |
MUSI 683 | Symphonic Band 1                         |         |
MUSI 685 | Graduate Chamber Ensemble 1              |         |
MUSI 687 | Symphony Orchestra 1                     |         |
MUSI 689 | Jazz Ensemble 1                          |         |
500-700 level MUSI electives
Total Credits 7
1 One of MUSI 682 Wind Symphony, MUSI 683 Symphonic Band, MUSI 685 Graduate Chamber Ensemble, MUSI 687 Symphony Orchestra or MUSI 689 Jazz Ensemble must be taken twice.

Concentration in Music and Well-Being (MUWB)
Total credits: 22

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 555</td>
<td>Music as a Healing Art</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 577</td>
<td>Music and Consciousness (Three semesters of)</td>
<td>3</td>
</tr>
</tbody>
</table>
Three semesters of 3
| MUSI 685 | Graduate Chamber Ensemble (three semesters of) |         |
| MUSI 699 | Independent Study                          | 3       |
| MUSI 777 | Music and Consciousness 2                  | 3       |
Six credits of 6
| MUSI 728 | Applied Music in Composition               |         |
| MUSI 790 | Graduate Recital                           | 1       |
Total Credits 22

Concentration in Piano Performance (PPFR)
Total credits: 32

Studies in Performance

| Code | Title                                      | Credits |
Select 12 credits of Graduate Applied Music from the following:
|      |                                            |         |
| MUSI 721 | Applied Music                             |         |
| MUSI 722 | Applied Music in Keyboard (over four semesters) | 12       |
Two credits of 2
| MUSI 592 | Topics in Music                           | 3       |
Three credits of 3
| MUSI 790 | Graduate Recital 1                        | 1       |
Total Credits 17

1 Two semesters of solo recital and one semester of chamber recital.

Support Studies in Literature and Pedagogy

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 630</td>
<td>Topics in Music History and Literature</td>
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<tr>
<td>MUSI 551</td>
<td>Keyboard Pedagogy</td>
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</tr>
<tr>
<td>or MUSI 553</td>
<td>Instrumental Pedagogy and Literature</td>
<td></td>
</tr>
<tr>
<td>MUSI 695</td>
<td>Teaching Internship</td>
<td>2</td>
</tr>
</tbody>
</table>
Total Credits 8

Support Studies in Accompanying or Ensemble plus Electives

Code | Title                                      | Credits |
Select Accompanying or Ensemble: 7
Accompanying:
MUSI 571 | Techniques of Accompanying I  |         |
MUSI 685 | Graduate Chamber Ensemble               |         |
500-700 level MUSI electives
Ensemble:
MUSI 682 | Wind Symphony 1                          |         |
MUSI 683 | Symphonic Band 1                         |         |
MUSI 685 | Graduate Chamber Ensemble 1              |         |
MUSI 687 | Symphony Orchestra 1                     |         |
MUSI 689 | Jazz Ensemble 1                          |         |
500-700 level MUSI electives
Total Credits 7
1 One of MUSI 682 Wind Symphony, MUSI 683 Symphonic Band, MUSI 685 Graduate Chamber Ensemble, MUSI 687 Symphony Orchestra or MUSI 689 Jazz Ensemble must be taken twice.

Concentration in Vocal Performance (VPFM)
Total credits: 32

Studies in Performance

| Code | Title                                      | Credits |
Select 12 credits of Graduate Applied Music from the following:
|      |                                            |         |
| MUSI 721 | Applied Music                             |         |
| MUSI 722 | Applied Music in Keyboard (over four semesters) | 12       |
Two credits of 2
| MUSI 592 | Topics in Music                           | 3       |
Three credits of 3
| MUSI 790 | Graduate Recital 1                        | 1       |
Total Credits 17

1 Two semesters of solo recital and one semester of chamber recital.
Ethnomusicology Minor

Banner Code: EMUS

Music Academic Advisor
A417 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/undergraduate/

The minor is designed for those who wish to widen their scope of knowledge about music while deepening their understanding of the world's peoples. Students learn in the classroom, as well as experientially, in the form of applied studies and exercises in field work how music making functions within cultural contexts, conveying varied meanings in bodily action and musical sound worldwide. Students gain skills that will serve them in many fields of endeavor, from developing specific musical expertise to acquiring proficiency with technological and anthropological aspects of ethnographic enquiry.

Admissions & Policies

Admissions
Students must first demonstrate to the Ethnomusicology coordinator a basic level of knowledge and training in some area of Western or non-Western music, or earn a grade of B or higher in MUSI 103 Musics of the World (Mason Core) (p. 142) or MUSI 431 Music History in Society III (Mason Core) (p. 142).

Policies
Eight credits of coursework must be unique to the minor with a minimum 2.00 GPA earned in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>or MUSI 431</td>
<td>Music History in Society III (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 303</td>
<td>Topics in Ethnomusicology</td>
<td>3</td>
</tr>
<tr>
<td>Two credits of</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MUSI 394</td>
<td>Ethnomusicology Internship ¹</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 114</td>
<td>Introduction to Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Select 1 credit from the following:

- Applied Music Options (course list follows)
- Music Ensemble Options (course list follows)

Total Credits: 12

¹ Subject to approval from the Ethnomusicology minor coordinator.

Electives

Electives subject to approval from the Ethnomusicology minor coordinator and should be selected from the following list. Additional electives may include summer travel courses, as appropriate, and must be approved by the minor coordinator.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits from the following:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>MUSI 102</td>
<td>Popular Music in America (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 107</td>
<td>Jazz and Blues in America (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td></td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applied Music Options (course list follows)</td>
<td></td>
</tr>
<tr>
<td>AFAM 200</td>
<td>Introduction to African American Studies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>AFAM 390</td>
<td>Special Topics in African and African</td>
<td></td>
</tr>
<tr>
<td></td>
<td>American Studies</td>
<td></td>
</tr>
<tr>
<td>ANTH 302</td>
<td>Peoples and Cultures of Latin America</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 306</td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 309</td>
<td>Peoples and Cultures of India (Mason Core)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>AVT 378</td>
<td>Digital Media Workshop</td>
<td></td>
</tr>
<tr>
<td>COMM 157</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Jazz Studies Minor

Admissions & Policies

Admissions

No prior experience in jazz is needed, but candidates must pass a music audition.

Policies

Students in the keyboard area use the Keyboard Skills I credit as a music elective.

University policy states that students must earn 8 distinct credits that are not used for their major toward their degree, with a minimum 2.00 GPA earned in all courses applied to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 20

Coursework

Select 2 credits of Applied Music Options (course list follows) 2

MUSI 107 Jazz and Blues in America (Mason Core) (p. 142) 3

MUSI 113 Aural Skills I 1

MUSI 115 Introduction to Music Theory 3

MUSI 116 Theory II 3

MUSI 171 Keyboard Skills I 1

Two semesters of

MUSI 300 Recital Attendance (two semesters) 1

MUSI 311 Jazz Studies 3

Three credits of

MUSI 485 Chamber Ensembles (Mason Core) (p. 142) (Jazz Chamber Ensembles) 3

MUSI 379 Jazz Improvisation 1

Total Credits 20

1 All students who enroll as music minors and jazz studies minors must take MUSI 300 Recital Attendance for two semesters. A grade of S (satisfactory) must be earned each semester.

Applied Music Options

See Music advisor for registration permission and options.

MUSI 242 Applied Music in Keyboard 2

MUSI 243 Applied Music in Voice 2

MUSI 244 Applied Music in Woodwind 2

MUSI 245 Applied Music in Brass 2

MUSI 246 Applied Music in String 2

MUSI 247 Applied Music in Percussion 2

MUSI 248 Applied Music in Composition 2

MUSI 442 Applied Music in Keyboard 2-3

MUSI 443 Applied Music in Voice 2-3

MUSI 444 Applied Music in Woodwind 2-3

MUSI 445 Applied Music in Brass 2-3

MUSI 446 Applied Music in String 2-3

MUSI 447 Applied Music in Percussion 2-3

MUSI 448 Applied Music in Composition 2-3

Music Academic Advisor

A417 deLaski Performing Arts Building

Fairfax Campus

Phone: 703-993-1392

Email: music@gmu.edu

Website: music.gmu.edu/degree-programs/undergraduate/

This minor is open to music and non music majors who wish to explore America’s unique art form. It is open to all instrumentalists and vocalists, including students who perform on instruments not normally associated with jazz.

Total Credits 6

Applied Music Options

See Music advisor for registration permission and options.

MUSI 242 Applied Music in Keyboard 2

MUSI 243 Applied Music in Voice 2

MUSI 244 Applied Music in Woodwind 2

MUSI 245 Applied Music in Brass 2

MUSI 246 Applied Music in String 2

MUSI 247 Applied Music in Percussion 2

MUSI 248 Applied Music in Composition 2

MUSI 442 Applied Music in Keyboard 2-3

MUSI 443 Applied Music in Voice 2-3

Admissions & Policies

Admissions

No prior experience in jazz is needed, but candidates must pass a music audition.

Policies

Students in the keyboard area use the Keyboard Skills I credit as a music elective.

University policy states that students must earn 8 distinct credits that are not used for their major toward their degree, with a minimum 2.00 GPA earned in all courses applied to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 20

Coursework

Select 2 credits of Applied Music Options (course list follows) 2

MUSI 107 Jazz and Blues in America (Mason Core) (p. 142) 3

MUSI 113 Aural Skills I 1

MUSI 115 Introduction to Music Theory 3

MUSI 116 Theory II 3

MUSI 171 Keyboard Skills I 1

Two semesters of

MUSI 300 Recital Attendance (two semesters) 1

MUSI 311 Jazz Studies 3

Three credits of

MUSI 485 Chamber Ensembles (Mason Core) (p. 142) (Jazz Chamber Ensembles) 3

MUSI 379 Jazz Improvisation 1

Total Credits 20

1 All students who enroll as music minors and jazz studies minors must take MUSI 300 Recital Attendance for two semesters. A grade of S (satisfactory) must be earned each semester.

Applied Music Options

See Music advisor for registration permission and options.

MUSI 242 Applied Music in Keyboard 2

MUSI 243 Applied Music in Voice 2

MUSI 244 Applied Music in Woodwind 2

MUSI 245 Applied Music in Brass 2

MUSI 246 Applied Music in String 2

MUSI 247 Applied Music in Percussion 2

MUSI 248 Applied Music in Composition 2

MUSI 442 Applied Music in Keyboard 2-3

MUSI 443 Applied Music in Voice 2-3
Music Education Licensure for PK-12 Graduate Certificate

Banner Code: AR-CERG-MELP

Music Academic Advisor
A417 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/undergraduate/

This certificate may be earned on a full-time or part-time basis.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about the program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure (https://irr2.gmu.edu/gedt/Music_Education_for_PK_12/Gedt.html) page.

Admissions & Policies

Admissions

• In addition to standard requirements through the university's online application, requirements for this program include:
  • Transcript audit that indicates: Bachelor of Music or its equivalent, minimum cumulative G.P.A. of 3.0 (Endorsement Worksheet)
  • Official copy of Praxis Core Academic Skills for Educators Test (or equivalency)¹
  • One page professional goals statement submitted with application
  • Upon application review by music education faculty, the successful applicant will be invited to an interview and music skills proficiency exam.

Coursework completed at other institutions will not be considered for transfer into this graduate certificate program. Applicants who believe they have met requirements for a license are encouraged to apply directly to the Virginia Department of Education (VDOE). Instructions and a type-and-print version of the application for a teaching license can be found on the VDOE website at: http://www.doe.virginia.gov/teaching/licensure/application.pdf

¹ Specifics regarding testing requirements and passing scores are dictated by the College of Education and Human Development (CEHD) and can be found online at https://cehd.gmu.edu/teacher/test/praxis

Required Courses

Upon admission to this graduate certificate the candidate must complete the following:²

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 561</td>
<td>Music Curriculum and Instructional Procedures</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 593</td>
<td>Foundations of Music Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 539</td>
<td>Literacy and Curriculum Integration, PK-12</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 501</td>
<td>Literacy and Curriculum Integration, PK-12</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUSI 566</td>
<td>Instrumental Methods for Band</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 567</td>
<td>Instrumental Methods, Strings</td>
<td></td>
</tr>
<tr>
<td>MUSI 568</td>
<td>Vocal and Choral Methods</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Internship

Upon completion of coursework the candidate must complete a student teaching internship at the elementary and secondary levels in a program-approved public or private school (6 credits). Prior to being permitted to student teach, the candidate must complete and pass the VCLA, the Praxis Subject Assessment (Music Content Knowledge-5113)¹, and the MTEC Competency Check².

¹ Coursework completed at other institutions will not be considered for transfer into this graduate certificate program. Applicants who believe they have met requirements for a license are encouraged to apply directly to the Virginia Department of Education (VDOE). Instructions and a type-and-print version of the application for a teaching license can be found on the VDOE website at: http://www.doe.virginia.gov/teaching/licensure/application.pdf

² The requirements and procedures for applying for an internship as well as the MTEC Competency Checks is outlined in the Music Education Handbook (http://music.gmu.edu). Candidates will be advised to sign up for vocal and/or instrumental technique courses during coursework as needed to help prepare them for these exams. Note that techniques courses are not required and thus cannot be transferred or counted as course substitutions for completion of the certificate.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 595</td>
<td>Internship in Music Education</td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Music Education, PhD

Banner Code: AR-PHD-MUE

Charles Ciorba, Director of Music Education
A417 deLaski Performing Arts Building
The Music Education, PhD is a research-intensive degree, focuses on the gathering, processing, and interpretation of information. Students in the Music Education PhD program take seminars and topics courses in music education, as well as research courses through the College of Education and Human Development (p. 161). Music Education, PhD graduates are expected to demonstrate the ability to communicate significant concepts of music education. The Music Education, PhD requires 90 credits, 60 beyond the master's degree in music.

Admissions & Policies

Admissions

Admission Requirements

In addition to meeting all admission requirements for graduate study, applicants should submit the following:

- Master’s degree in music or its equivalent from an accredited university;
- GPA of 3.00 in master’s-level music course work; 3.50 in courses related to the prospective area of doctoral study (music education, performance, composition, or conducting);
- Three recommendations;
- Satisfactory scores on GRE;
- Sample of academic writing such as a graduate-level paper from a musicology or music history course taken during MM studies.
- Students in performance and conducting must audition. Specific details of those requirements are available from the advisors.
- Composition students must present a portfolio of recent compositions and recordings of performances.
- Music education majors must present a dossier of their teaching experience and activities, a video of sample classroom teaching, and they must schedule an interview with music faculty including the director of graduate studies (DGS) prior to admission.

Applicants should refer to the graduate admissions (https://music.gmu.edu/auditions/masters-auditions) page of the School of Music website for specific details on what is required and how to submit their materials. There is no “provisional” admission. Students must meet appropriate standards prior to commencing doctoral studies.

Policies

Reduction of Credit

Students must have a master’s degree before being admitted. Most students receive a reduction of study of 30 credits based on their previous master’s degree.

Requirements

Degree Requirements

Total credits: 90

The following degree plan is based on a student who receives a full 30 credit reduction. Students who do not receive a full credit reduction should choose additional credits in consultation with their advisor.

Placement Examinations

Prior to the beginning of the first semester of doctoral studies, the student must complete placement examinations in music theory, music history, and musicianship (including aural skills and keyboard skills). Positive scores on the placement exams may reduce or eliminate prerequisites for courses in music history and music theory.

Doctoral Coursework

The doctoral student must maintain a minimum of 3.00 GPA in courses presented on the degree plan, which may include no more than 6 credits with a grade of C. The GPA calculation excludes all transfer courses and Mason extended studies or nondegree credits not formally approved for the degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDRS 810</td>
<td>Problems and Methods in Education Research</td>
<td>9</td>
</tr>
<tr>
<td>EDRS 811</td>
<td>Quantitative Methods in Educational Research</td>
<td></td>
</tr>
<tr>
<td>EDRS 812</td>
<td>Qualitative Methods in Educational Research</td>
<td></td>
</tr>
<tr>
<td>EDRS 820</td>
<td>Evaluation Methods for Educational Programs and Curricula</td>
<td></td>
</tr>
<tr>
<td>EDRS 821</td>
<td>Advanced Applications of Quantitative Methods</td>
<td></td>
</tr>
<tr>
<td>EDRS 824</td>
<td>Mixed Methods Research: Integrating Qualitative and Quantitative Approaches</td>
<td></td>
</tr>
<tr>
<td>MUSI 610</td>
<td>Topics in Music Theory</td>
<td>6</td>
</tr>
<tr>
<td>MUSI 630 or MUSI 730</td>
<td>Topics in Music History and Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 640</td>
<td>Topics in World Musics</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 660</td>
<td>Topics in Music Education (3 credits)</td>
<td>1-6</td>
</tr>
<tr>
<td>MUSI 810 or MUSI 830</td>
<td>Doctoral Seminar in Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 860</td>
<td>Doctoral Seminar in Music Education (12 credits)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 880</td>
<td>Doctoral Major Ensemble (3 credits)</td>
<td>1</td>
</tr>
<tr>
<td>CVPA 600</td>
<td>CVPA Graduate ProSeminar (must be taken within the student's first 2 semesters)</td>
<td>0</td>
</tr>
</tbody>
</table>

Select 6 credits in music theory

Select 6 credits of MUSI 500 - 800 level electives as approved by advisor.

Total Credits

48

Residency

More than half of all credits (minimum 72) must be taken in doctoral degree status, after admission to the degree program. One year (fall and spring) of consecutive full-time study (9 credits per semester) is recommended (18 total credits). Or, the academic residency requirement may be fulfilled by earning 21 credits within 12 months (fall and spring...
semesters and summer term). Academic residency should be completed during the first year of study. Any necessary prerequisite courses at the 500 level can be included to meet the residency requirement. Language courses at the undergraduate level may not be included. Note: The academic residency does not imply meeting the standards of Virginia residency for tuition purposes.

Language Requirements

Reading proficiency is required in a language appropriate to the student's major area of study. Normally, this will be German, French, or Italian. Alternatively, the student may choose to demonstrate proficiency interpreting statistical findings in quantitative-based educational research. The director of graduate studies and the Graduate Committee will determine the appropriate area of study. Reading proficiency may be accomplished by completing a reading examination provided by the music faculty. The reading examination provided by the faculty will normally consist of translation (with dictionary) of appropriate technical passages relevant to the student's area of study within a two-hour period. The language reading proficiency should be completed prior to earning 12 credits of courses at the 600 level or above.

Graduate Committee

The Graduate Committee will evaluate the progress of the student annually. Continuation in the program is subject to the endorsement of this group.

Comprehensive Exams

After the completion of required courses (excluding dissertation credits) or during the semester when completion of those courses is anticipated, the student will take comprehensive examinations. The written exams may also be followed by a one-hour oral exam if needed to clarify issues included in the written exams.

Doctoral Research

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 998</td>
<td>Dissertation Proposal (A minimum of 3 credits)</td>
<td>12</td>
</tr>
<tr>
<td>MUSI 999</td>
<td>Dissertation (A minimum of 6 credits)</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits 12

Advancement to Candidacy

Before doctoral students may be advanced to candidacy by the dean of the College of Visual and Performing Arts, they must complete all coursework required by the program faculty, be certified in all relevant doctoral research skills, pass the comprehensive exams, and be recommended by the Graduate Committee, the director of graduate studies, and the director of the School of Music. Students advanced to candidacy after the add period for a given semester must wait until the following semester to register for MUSI 999 Dissertation.

Dissertation

The dissertation is the capstone experience of doctoral study. The dissertation will be guided by the Dissertation Committee consisting of at least three members of the music faculty. The student’s major professor will chair the committee. The director of graduate studies of the School of Music may be a part of the committee; if not, he or she will serve ex officio. All Dissertation Committee members will be appointed by the dean of the College of Visual and Performing Arts and have graduate faculty status, as approved by the university provost.

Final Defense and Graduation

When all degree requirements have been satisfied, including completion of the doctoral dissertation, the doctoral candidate may request a doctoral defense. Approval for the defense must be obtained from the Dissertation Committee, the director of graduate studies and the director of the School of Music, and the dean of the College of Visual and Performing Arts. Notice of a defense must be circulated to the university community two weeks before the defense date.

All relevant rules regarding schedule, fees, and other matters as described in the catalog must be followed. All copies of the dissertation materials and fees must be paid before the doctoral degree is awarded.

Music Pedagogy Minor

Banner Code: MPED

Music Academic Advisor

A417 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/undergraduate/

Admissions & Policies

Admissions

All students pursuing a music pedagogy minor must pass a music audition and an interview.

Policies

University policy states that students must earn 8 distinct credits that are not used for their major toward their minor, with a minimum grade of C earned in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 20

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 351</td>
<td>Keyboard Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 352</td>
<td>Vocal Pedagogy and Lab</td>
<td></td>
</tr>
<tr>
<td>or MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td></td>
</tr>
<tr>
<td>MUSI 456</td>
<td>Pedagogy II 1</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 457</td>
<td>Pedagogy III 1</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 458</td>
<td>Pedagogy IV</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 494</td>
<td>Pedagogy Internship</td>
<td>2</td>
</tr>
</tbody>
</table>

Select 3 courses from the following: 9
Music Technology Minor

Banner Code: MTEC

Music Academic Advisor
A417 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/undergraduate/

This minor is open to majors from throughout the university who seek to expand their knowledge and skill in this area of study.

Admissions & Policies

Admissions

Entrance requirements
MUSI 100 Fundamentals of Music (Mason Core) (p. 142) or MUSI 115 Theory I with a grade of C or higher. A music audition and interview with music technology faculty is required.

Policies

University policy states that students must earn 8 distinct credits that are not used for their major toward their degree, with a minimum 2.00 GPA earned in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 254</td>
<td>Music and Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 300</td>
<td>Recital Attendance</td>
<td>0</td>
</tr>
<tr>
<td>Two semesters of Applied Music, Ensemble and Skills Courses:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Music Technology Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 354</td>
<td>Electronic Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 355</td>
<td>Recording Techniques</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Music Technology Electives

Select from the following: ¹

Applied Music, Ensemble and Skills Courses:

- Applied Music Options (course list follows)
- Music Ensemble Options (course list follows)
- MUSI 171 Keyboard Skills I
- MUSI 367 Class Guitar
- MUSI 368 Class Voice

Music Technology Topics: ⁰-³

- MUSI 100 Fundamentals of Music (Mason Core) (p. 142)
- MUSI 115 Introduction to Music Theory
- MUSI 102 Popular Music in America (Mason Core) (p. 142)
- MUSI 103 Musics of the World (Mason Core) (p. 142)
- MUSI 104 Music Theory
- MUSI 105 Music History
- MUSI 107 Jazz and Blues in America (Mason Core) (p. 142)
- MUSI 359 Topics in Music Technology

Total Credits: 9

¹ Select 0-3 credits from each category.

Applied Music Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 242</td>
<td>Applied Music in Keyboard</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 243</td>
<td>Applied Music in Voice</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 244</td>
<td>Applied Music in Woodwind</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 245</td>
<td>Applied Music in Brass</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 246</td>
<td>Applied Music in String</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 247</td>
<td>Applied Music in Percussion</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 248</td>
<td>Applied Music in Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 442</td>
<td>Applied Music in Keyboard</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 443</td>
<td>Applied Music in Voice</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 444</td>
<td>Applied Music in Woodwind</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 445</td>
<td>Applied Music in Brass</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 446</td>
<td>Applied Music in String</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 447</td>
<td>Applied Music in Percussion</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 448</td>
<td>Applied Music in Composition</td>
<td>2-3</td>
</tr>
</tbody>
</table>

Music Ensemble Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

¹ Keyboard concentrators substitute MUSI 451 Keyboard Pedagogy II and 1 credit of MUSI (p. 1955) elective for MUSI 456 Pedagogy II and MUSI 457 Pedagogy III.

Note: The Music Pedagogy Minor may not be taken in combination with the BA in Music (p. 859).
Music for Well-Being Graduate Certificate (title change pending SCHEV approval)

Banner Code: AR-CERG-MWB

Phone: 703-993-1380
Website: music.gmu.edu

Admissions & Policies

Note: As of catalog publication in April, the title for this program (formerly known as Music and Well-Being Graduate Certificate) has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia.

Admissions

In addition to standard university requirements, an interview with the director of the program is required for admission. Visit the School of Music website (http://music.gmu.edu) for details on what and how to submit your application.

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements

(Formerly AR-CERG-MUWB)

Note: As of catalog publication in April, the title for this program (formerly known as Music and Well-Being Graduate Certificate) has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia.

Certificate Requirements

Total credits: 22

This certificate may be pursued on a full- or part-time basis.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 555</td>
<td>Music as a Healing Art</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 577</td>
<td>Music and Consciousness</td>
<td>3</td>
</tr>
<tr>
<td>Three semesters of</td>
<td>MUSI 685 Graduate Chamber Ensemble (Healing Arts Ensemble)</td>
<td>3</td>
</tr>
</tbody>
</table>

MUSI 699 Independent Study (Music Healing Practicum for 3 credits) 3

MUSI 777 Music and Consciousness 2 3

Six credits of

MUSI 728 Applied Music in Composition 1

MUSI 790 Graduate Recital 1

Total Credits 22

Music, BA

Banner Code: AR-BA-MUSI

Music Academic Advisor

A417 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/undergraduate/

Degree Requirements

Total credits: 120

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 100</td>
<td>Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication (p. 142) 2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 251</td>
<td>Musical/Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147) 3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science (p. 148) 3,4</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social or Behavioral Sciences (p. 150) 3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Understanding (p. 146) 5</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 31

1 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ENGH 101 Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) or ENGH 101 Composition (Mason Core) (p. 142), as well as in ENGH 302 Advanced Composition (Mason Core) (p. 142), to fulfill degree requirements.

2 All students excluding Music Technology and Pedagogy students must take MUSI 251 Musical/Oral Communication.

3 Also have significant elective choices as per Mason Core listing.

4 Two classes; one must contain a lab. Students completing the Concentration in Music Technology must take PHYS 103 Physics and Everyday Phenomena I (Mason Core) (p. 142).
All students excluding Music Technology and Pedagogy students must take MUSI 431 Music History in Society III (Mason Core) (p. 142)

Remaining Mason Core requirements are fulfilled with major coursework.

### Additional Non-Major coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One of the following:</td>
<td>0-18</td>
</tr>
<tr>
<td></td>
<td>Intermediate-level language proficiency¹</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double Major</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Double Degree</td>
<td>2</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>0-18</td>
</tr>
</tbody>
</table>

¹ See CVPA Requirements and Policies (p. 803) for details regarding foreign language requirement.

² In a discipline other than music.

### Music Major

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 113</td>
<td>Aural Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 114</td>
<td>Aural Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 115</td>
<td>Introduction to Music Theory</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 215</td>
<td>Theory for Pop and Jazz Music (Required for Music Technology Concentration)</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 216</td>
<td>Theory for 20th- and 21st-Century Music</td>
<td></td>
</tr>
<tr>
<td>or MUSI 217</td>
<td>Theory for 18th-Century Music</td>
<td></td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>2</td>
</tr>
</tbody>
</table>

### Music History Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 338</td>
<td>Music History in Society A</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 438</td>
<td>Music History in Society B</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 439</td>
<td>Music History in Society C</td>
<td>3</td>
</tr>
<tr>
<td>All other students:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>MUSI 331</td>
<td>Music History in Society I</td>
<td>2</td>
</tr>
<tr>
<td>or MUSI 432</td>
<td>Music History in Society IV</td>
<td></td>
</tr>
<tr>
<td>MUSI 332</td>
<td>Music History in Society II</td>
<td>4</td>
</tr>
</tbody>
</table>

### Performance and Music Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 300</td>
<td>Recital Attendance</td>
<td>0</td>
</tr>
<tr>
<td>All students except Music Technology Students:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUSI 490</td>
<td>RS: Musical Communication in Context (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Music Technology students only:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUSI 489</td>
<td>Music Technology Capstone</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td>3-5</td>
</tr>
<tr>
<td>Music Technology concentration students only:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 112 &amp; PHIL 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>and Ethics and the Cybersociety (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Electives

All students excluding Music Technology and Pedagogy students:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 259</td>
<td>Music in Computer Technology (Mason Core) (p. 142)</td>
<td>12-13</td>
</tr>
</tbody>
</table>

### Applied Music Options (list follows)² 6-8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 490</td>
<td>RS: Musical Communication in Context (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 489</td>
<td>Music Technology Capstone</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td>3-5</td>
</tr>
<tr>
<td>Music Technology concentration students only:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 112 &amp; PHIL 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>and Ethics and the Cybersociety (Mason Core) (p. 142)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Pedagogy

All students (except for Music Technology and Pedagogy Concentration students) must register for a pedagogy and literature class appropriate to their major instrument or register for a teaching internship.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 395</td>
<td>Teaching Internship (2 credits)</td>
<td>0-3</td>
</tr>
<tr>
<td>MUSI 351</td>
<td>Keyboard Pedagogy¹</td>
<td></td>
</tr>
<tr>
<td>MUSI 352</td>
<td>Vocal Pedagogy and Lab²</td>
<td></td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature³</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>0-3</td>
</tr>
</tbody>
</table>

¹ Required for keyboard students.
² Required for vocal students.
³ Topic varies; students must register for the topic corresponding with their major instrument. Required for strings and guitar students; recommended for wind, brass, or percussion students.

### Concentration in Music Technology (MTEC)

Students pursuing this concentration may not also pursue the Music and Technology minor. Students who wish to complete a concentration in music technology must also complete the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 252</td>
<td>Popular Music Arranging</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 254</td>
<td>Music and Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 354</td>
<td>Electronic Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 355</td>
<td>Recording Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 359</td>
<td>Topics in Music Technology</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
Concentration in Pedagogy (PDGY)

Students pursuing this concentration may not also pursue the Music and Technology minor. Students who wish to complete a concentration in pedagogy must also complete the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 351</td>
<td>Keyboard Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 352</td>
<td>Vocal Pedagogy and Lab</td>
<td></td>
</tr>
<tr>
<td>or MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td></td>
</tr>
<tr>
<td>MUSI 456</td>
<td>Pedagogy II</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 457</td>
<td>Pedagogy III</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 458</td>
<td>Pedagogy IV</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 494</td>
<td>Pedagogy Internship</td>
<td></td>
</tr>
</tbody>
</table>

Choose four credits from the following:

- MUSI 221 Applied Music I
- MUSI 222 Applied Music in Keyboard
- MUSI 223 Applied Music in Voice
- MUSI 224 Applied Music in Woodwind
- MUSI 225 Applied Music in Brass
- MUSI 226 Applied Music in String
- MUSI 227 Applied Music in Percussion
- MUSI 241 Applied Music II
- MUSI 242 Applied Music in Keyboard
- MUSI 243 Applied Music in Voice
- MUSI 244 Applied Music in Woodwind
- MUSI 245 Applied Music in Brass
- MUSI 246 Applied Music in String
- MUSI 247 Applied Music in Percussion
- MUSI 380 Wind Symphony (Mason Core) (p. 142)
- MUSI 381 University Chorale (Mason Core) (p. 142)
- MUSI 382 Piano Ensemble (Mason Core) (p. 142)
- MUSI 383 Symphonic Band (Mason Core) (p. 142)
- MUSI 384 (Mason Core) (p. 142)
- MUSI 385 Chamber Singers (Mason Core) (p. 142)
- MUSI 387 Symphony Orchestra (Mason Core) (p. 142)
- MUSI 389 Jazz Ensemble (Mason Core) (p. 142)
- MUSI 421 Applied Music III
- MUSI 441 Private Music Instruction III
- MUSI 442 Applied Music in Keyboard
- MUSI 443 Applied Music in Voice
- MUSI 444 Applied Music in Woodwind
- MUSI 445 Applied Music in Brass
- MUSI 446 Applied Music in String
- MUSI 447 Applied Music in Percussion
- MUSI 485 Chamber Ensembles (Mason Core) (p. 142)

Choose three credits from the following:

- AMGT 410 Arts Advocacy and Community
- COMM 301 Relational Communication Theory
- EDEP 350 Perspectives on Achievement Motivation
- EDUC 302 Human Growth and Development

Total Credits: 18

1 Keyboard concentrators substitute MUSI 451 Keyboard Pedagogy II and 1 credit of MUSI elective for MUSI 456 Pedagogy II and MUSI 457 Pedagogy III.

General Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Select the amount of elective credit corresponding with degree path:

- Music Technology students: 20-38
- Pedagogy students: 20-38
- All other students: 23-41

1 Electives for all students excluding Pedagogy students may not include additional music courses. Pedagogy students may apply no more than 54 credits of MUSI (p. 1955) courses to their degree.

Applied Music Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 242</td>
<td>Applied Music in Keyboard</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 243</td>
<td>Applied Music in Voice</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 244</td>
<td>Applied Music in Woodwind</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 245</td>
<td>Applied Music in Brass</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 246</td>
<td>Applied Music in String</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 247</td>
<td>Applied Music in Percussion</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 382</td>
<td>Piano Ensemble (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 383</td>
<td>Symphonic Band (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 384</td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 385</td>
<td>Chamber Singers (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 421</td>
<td>Applied Music III</td>
<td></td>
</tr>
<tr>
<td>MUSI 441</td>
<td>Private Music Instruction III</td>
<td></td>
</tr>
<tr>
<td>MUSI 442</td>
<td>Applied Music in Keyboard</td>
<td></td>
</tr>
<tr>
<td>MUSI 443</td>
<td>Applied Music in Voice</td>
<td></td>
</tr>
<tr>
<td>MUSI 444</td>
<td>Applied Music in Woodwind</td>
<td></td>
</tr>
<tr>
<td>MUSI 445</td>
<td>Applied Music in Brass</td>
<td></td>
</tr>
<tr>
<td>MUSI 446</td>
<td>Applied Music in String</td>
<td></td>
</tr>
<tr>
<td>MUSI 447</td>
<td>Applied Music in Percussion</td>
<td></td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Choose three credits from the following:

- AMGT 410 Arts Advocacy and Community
- COMM 301 Relational Communication Theory
- EDEP 350 Perspectives on Achievement Motivation
- EDUC 302 Human Growth and Development

Music Ensemble Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 382</td>
<td>Piano Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 383</td>
<td>Symphonic Band (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 385</td>
<td>Chamber Singers (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Choose three credits from the following:

- AMGT 410 Arts Advocacy and Community
- COMM 301 Relational Communication Theory
- EDEP 350 Perspectives on Achievement Motivation
- EDUC 302 Human Growth and Development

- MBUS 304 Entrepreneurship: Starting and Managing a New Enterprise
- PSYC 211 Developmental Psychology (Mason Core) (p. 142)
Accelerated Master's

Music, BA/Arts Management, Accelerated MA

Overview
Students choosing the accelerated option must fulfill all university requirements for the master's degree. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete all requirements.

This accelerated option is offered through joint cooperation between the School of Music and the Arts Management Program.

For more detailed information, see AP 6.7 Bachelor's/Accelerated Master's Degrees. For policies governing all graduate degrees, see the Academic Policies section of the catalog.

Application Requirements
Applicants to accelerated master's programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master's Program Application, available from the College of Visual and Performing Arts (CVPA) Graduate Studies. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

Accelerated Option Requirements
As an undergraduate, the accelerated master's student is to complete the two graduate courses indicated on their Accelerated Option Requirements.

As an undergraduate, the accelerated master's student is to complete the two graduate courses indicated on their Accelerated Master's Program application with a minimum grade of B in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor's/Accelerated Master's Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. Students will begin their master's program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credits
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation and must be approved by the Dean's Office.

To apply these credits to the master's degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master's Transition Form.

Music, BM

Banner Code: AR-BM-MUSI

Music Academic Advisor
A417 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/undergraduate/

Requirements

Degree Requirements
Total credits: 120

Students must complete all Mason Core (p. 142) requirements and core coursework, as well as the requirements within one selected concentration.

Mason Core
Coursework within the major and concentration fulfills the information technology, global understanding, oral communications, fine arts, and synthesis requirements. Students must fulfill the requirements remaining in the following areas:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 113</td>
<td>Aural Skills I</td>
<td>1</td>
</tr>
<tr>
<td>One credit of MUSI</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MUSI 114</td>
<td>Aural Skills II</td>
<td></td>
</tr>
<tr>
<td>MUSI 115</td>
<td>Introduction to Music Theory</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 213</td>
<td>Aural Skills III</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 251</td>
<td>Musical/Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 273</td>
<td>Keyboard Skills III</td>
<td>1</td>
</tr>
</tbody>
</table>

1 Students in the Music Technology concentration, will fulfill this requirement as part of their concentration requirements.
2 Music Technology concentration students only.

Core Courses Required for All Concentrations

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 113</td>
<td>Aural Skills I</td>
<td>1</td>
</tr>
<tr>
<td>One credit of MUSI</td>
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<tr>
<td>MUSI 115</td>
<td>Introduction to Music Theory</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 213</td>
<td>Aural Skills III</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 251</td>
<td>Musical/Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 273</td>
<td>Keyboard Skills III</td>
<td>1</td>
</tr>
</tbody>
</table>
Five instances of:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 300</td>
<td>Recital Attendance</td>
<td>0</td>
</tr>
<tr>
<td>MUSI 301</td>
<td>Music History in Society III (Mason Core)</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Credits 14

1. Fulfills Mason Core (p. 142) requirement in oral communication for Music, BM students only.

Concentration in Composition (CPO)

Students must complete all concentration requirements as well as requirements for one of the following emphases:

- Brass
- Guitar
- Keyboard
- Percussion
- String
- Voice
- Woodwind

Courses Required for All Emphases

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 214</td>
<td>Aural Skills IV</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 215</td>
<td>Theory for Pop and Jazz Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 216</td>
<td>Theory for 20th- and 21st-Century Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 217</td>
<td>Theory for 18th-Century Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 317</td>
<td>Baroque and Classical Forms</td>
<td>3</td>
</tr>
<tr>
<td>Select 8 credits from MUSI 242-MUSI 248 (see Applied Music Options)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Select 8 credits from MUSI 442-MUSI 448 (see Applied Music Options)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>MUSI 259</td>
<td>Music in Computer Technology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 319</td>
<td>Class Composition and Arranging</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 324</td>
<td>Junior Recital (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 331</td>
<td>Music History in Society I</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 332</td>
<td>Music History in Society II</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 354</td>
<td>Electronic Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 361</td>
<td>Class Strings</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 363</td>
<td>Class Woodwinds</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 365</td>
<td>Class Brass</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 366</td>
<td>Class Percussion</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 396</td>
<td>Conducting II</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 419</td>
<td>Orchestration</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 424</td>
<td>Senior Recital (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Three credits of

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 454</td>
<td>Jazz Arranging</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Four credits of

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142) (Contemporary Ensemble or Healing Arts Ensemble only)</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 491</td>
<td>Musical Communication in Performance (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 438</td>
<td>Music History in Society B</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 439</td>
<td>Music History in Society C</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 2 credits from MUSI 100-MUSI 499

Total Credits 76

1. Additional to Contemporary Ensemble/Healing Arts Ensemble requirement.
2. As approved by Music advisor.

Emphasis Requirement

Composition: Brass Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 4 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 383</td>
<td>Symphonic Band (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 9

Composition: Guitar Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 4 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 385</td>
<td>Chamber Singers (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 9

Composition: Keyboard Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 351</td>
<td>Keyboard Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 371</td>
<td>Techniques of Accompanying I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 372</td>
<td>Techniques of Accompanying II</td>
<td>1</td>
</tr>
</tbody>
</table>

Select 4 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 385</td>
<td>Chamber Singers (Mason Core) (p. 142)</td>
<td>1</td>
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</table>

Total Credits 9

Composition: Percussion Emphasis

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 4 credits from the following:

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>
## Composition: String Emphasis

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 4 credits of:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core)</td>
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</tbody>
</table>

Total Credits 9

## Composition: Voice Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 352</td>
<td>Vocal Pedagogy and Lab</td>
<td>3</td>
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</table>

Select 4 credits from the following:

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MUSI 385</td>
<td>Chamber Singers (Mason Core)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 9

## Composition: Woodwind Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 4 credits from the following:

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<thead>
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<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MUSI 383</td>
<td>Symphonic Band (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 9

## Concentration in Jazz (JAZC)

Students must complete all concentration requirements as well as requirements for one of the following emphases:

- Brass
- Guitar
- Keyboard
- Percussion
- Steel Pan
- Voice
- Woodwind

## Courses Required for All Emphases

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUSI 107</td>
<td>Jazz and Blues in America (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 214</td>
<td>Aural Skills IV</td>
<td>2</td>
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Select 9 credits from:

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<tr>
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<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUSI 215</td>
<td>Theory for Pop and Jazz Music</td>
<td>9</td>
</tr>
<tr>
<td>MUSI 216</td>
<td>Theory for 20th- and 21st-Century Music</td>
<td></td>
</tr>
<tr>
<td>MUSI 217</td>
<td>Theory for 18th-Century Music</td>
<td></td>
</tr>
<tr>
<td>MUSI 317</td>
<td>Baroque and Classical Forms</td>
<td></td>
</tr>
</tbody>
</table>

Select 8 credits from MUSI 242-MUSI 248 (see Applied Music Options)

Select 8 credits from MUSI 442-MUSI 448 (see Applied Music Options)

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUSI 259</td>
<td>Music in Computer Technology (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 274</td>
<td>Jazz/Commercial Piano</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 311</td>
<td>Jazz Studies</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 319</td>
<td>Class Composition and Arranging</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 324</td>
<td>Junior Recital (Mason Core)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 338</td>
<td>Music History in Society A</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
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<tr>
<td>MUSI 424</td>
<td>Senior Recital (Mason Core)</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 438</td>
<td>Music History in Society B</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 439</td>
<td>Music History in Society C</td>
<td>3</td>
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<tr>
<td>MUSI 450</td>
<td>Jazz Improvisation I</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 452</td>
<td>Jazz Improvisation II</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 454</td>
<td>Jazz Arranging</td>
<td>3</td>
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Six credits of:

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<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core)</td>
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<table>
<thead>
<tr>
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<th>Credits</th>
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<tr>
<td>MUSI 491</td>
<td>Musical Communication in Performance (Mason Core)</td>
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Three credits of:

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<th>Credits</th>
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<tbody>
<tr>
<td>MUSI 492</td>
<td>Selected Topics in Music (Topics in Jazz Studies only)</td>
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</tbody>
</table>

Select 4 credits from MUSI 100-MUSI 499

Total Credits 75

1 As approved by Music advisor.

## Jazz: Brass Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
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</table>

Select 8 credits from the following:

<table>
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<tr>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core)</td>
<td>8</td>
</tr>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core)</td>
<td>8</td>
</tr>
<tr>
<td>MUSI 383</td>
<td>Symphonic Band (Mason Core)</td>
<td>8</td>
</tr>
<tr>
<td>MUSI 385</td>
<td>Chamber Singers (Mason Core)</td>
<td>8</td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core)</td>
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</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core)</td>
<td>8</td>
</tr>
</tbody>
</table>

Total Credits 10
### Jazz: Guitar Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
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<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
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</tbody>
</table>

Select 8 credits from the following:

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<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 383</td>
<td>Symphonic Band (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
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<td>Chamber Singers (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 10

### Jazz: Keyboard Emphasis

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUSI 371</td>
<td>Techniques of Accompanying I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 372</td>
<td>Techniques of Accompanying II</td>
<td>1</td>
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Select 8 credits from the following:

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<td>Chamber Singers (Mason Core) (p. 142)</td>
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<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
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</tbody>
</table>

Total Credits: 10

### Jazz: Percussion Emphasis

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<tr>
<th>Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
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<td>Chamber Singers (Mason Core) (p. 142)</td>
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<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td></td>
</tr>
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</table>

Total Credits: 10

### Jazz: Steel Pan Emphasis

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
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Select 8 credits from:

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</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
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</tr>
</tbody>
</table>

Total Credits: 10

### Jazz: Voice Emphasis

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
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<td>Keyboard Skills II</td>
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<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
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</table>

Total Credits: 10

### Jazz: Woodwind Emphasis

<table>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
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Select 8 credits from:

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<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
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</tr>
</tbody>
</table>

Total Credits: 10

### Concentration in Music Education (MUE)

Certification to Teach

The music education concentration at George Mason University is recognized by the Virginia Department of Education (VDOE) as an approved teacher preparation program that imparts licensure. Even though an undergraduate student may declare music education as their major, this is not an official indication of a student’s degree status. In order to be accepted into the degree, students must complete an application, meet all eligibility requirements, and pass the MTEC Interview and Skill Proficiency Exam. All entry requirements are described in Part 1 of the GMUsicEd Handbook located online (https://sites.google.com/site/gmusicedhandbook/Information/part1bme).

The deadline for applying to the BME and taking the MTEC exam is the 4th semester of coursework. The 4th semester is defined as a minimum of 36 attempted credits. Transfer and continuing students entering GMU as an undergraduate with 36 or more credits will be required to apply to the BME no later than their 2nd semester of coursework at GMU.

Student must complete all concentration requirements as well as requirements for one of the following emphases:

- Brass
- Guitar
- Keyboard
- Percussion
- String
- Voice
- Woodwind
### Courses Required for All Emphases

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUSI 214</td>
<td>Aural Skills IV</td>
<td>2</td>
</tr>
</tbody>
</table>

Select 9 credits from:

- MUSI 215  Theory for Pop and Jazz Music
- MUSI 216  Theory for 20th- and 21st-Century Music
- MUSI 217  Theory for 18th-Century Music
- MUSI 317  Baroque and Classical Forms

Select 8 credits from MUSI 242-MUSI 248 (see Applied Music Options)

Select 6 credits from MUSI 442-MUSI 448 (see Applied Music Options)

- MUSI 259  Music in Computer Technology (Mason Core) (p. 142)
- MUSI 319  Class Composition and Arranging
- MUSI 323  Music Education Recital
- MUSI 331  Music History in Society I
- MUSI 332  Music History in Society II
- MUSI 361  Class Strings
- MUSI 366  Class Percussion
- MUSI 367  Class Guitar
- MUSI 370  Laboratory Ensemble (To be repeated six times)
- MUSI 393  Music Administration and Management
- MUSI 432  Music History in Society IV

Six credits of:

- MUSI 495  Internship in Music Education (Mason Core) (p. 142) ¹
- EDRD 300  Literacy and Curriculum Integration
- EDUC 301  Educating Diverse and Exceptional Learners
- EDUC 302  Human Growth and Development or EDUC 539

Total Credits: 60

### Emphasis Requirement

#### Music Education: Brass Emphasis

<table>
<thead>
<tr>
<th>Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
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</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
</tbody>
</table>

Two credits of:

- MUSI 363  Class Woodwinds

Two credits of:

- MUSI 365  Class Brass
- MUSI 368  Class Voice
- MUSI 391  Conducting I
- MUSI 396  Conducting II
- MUSI 464  Instrumental Music Methods I
- MUSI 466  Instrumental Music Methods II

Select 1 credit from MUSI 100-MUSI 499 ¹

Select 7 credits from the following:

- MUSI 363  Class Woodwinds
- MUSI 365  Class Brass
- MUSI 381  University Chorale (Mason Core) (p. 142)
- MUSI 385  Chamber Singers (Mason Core) (p. 142)

Total Credits: 25

¹ As approved by Music advisor.

### Music Education: Guitar Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MUSI 259</td>
<td>Music in Computer Technology (Mason Core) (p. 142) ¹</td>
<td>3</td>
</tr>
</tbody>
</table>
- MUSI 319  Class Composition and Arranging
- MUSI 323  Music Education Recital
- MUSI 331  Music History in Society I
- MUSI 332  Music History in Society II
- MUSI 361  Class Strings
- MUSI 366  Class Percussion
- MUSI 367  Class Guitar
- MUSI 370  Laboratory Ensemble (To be repeated six times)
- MUSI 393  Music Administration and Management
- MUSI 432  Music History in Society IV

Six credits of:

- MUSI 495  Internship in Music Education (Mason Core) (p. 142) ¹
- EDRD 300  Literacy and Curriculum Integration
- EDUC 301  Educating Diverse and Exceptional Learners
- EDUC 302  Human Growth and Development or EDUC 539

Total Credits: 60

### Music Education: Keyboard Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Two credits of:
- MUSI 352  Vocal Pedagogy and Lab
- MUSI 371  Techniques of Accompanying I
- MUSI 372  Techniques of Accompanying II
- MUSI 391  Conducting I
- MUSI 396  Conducting II
- MUSI 461  The Teaching of General Music in the Elementary and Middle School
- MUSI 463  The Teaching of Vocal Music in the Secondary School

Select 1 credit from the following:

- MUSI 363  Class Woodwinds
- MUSI 365  Class Brass

Select 7 credits from the following:

- MUSI 381  University Chorale (Mason Core) (p. 142)
- MUSI 385  Chamber Singers (Mason Core) (p. 142)

Total Credits: 25

### Music Education: Percussion Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| MUSI 352  Vocal Pedagogy and Lab
- MUSI 371  Techniques of Accompanying I
- MUSI 372  Techniques of Accompanying II
- MUSI 391  Conducting I
- MUSI 396  Conducting II
- MUSI 461  The Teaching of General Music in the Elementary and Middle School
- MUSI 463  The Teaching of Vocal Music in the Secondary School

Select 1 credit from the following:

- MUSI 363  Class Woodwinds
- MUSI 365  Class Brass

Select 7 credits from the following:

- MUSI 381  University Chorale (Mason Core) (p. 142)
- MUSI 385  Chamber Singers (Mason Core) (p. 142)

Total Credits: 25
### Two credits of MUSI 363
- **Course:** Class Woodwinds
- **Credits:** 2

### Two credits of MUSI 365
- **Course:** Class Brass
- **Credits:** 2

### MUSI 368
- **Course:** Class Voice
- **Credits:** 1

### MUSI 391
- **Course:** Conducting I
- **Credits:** 2

### MUSI 396
- **Course:** Conducting II
- **Credits:** 2

### MUSI 464
- **Course:** Instrumental Music Methods I
- **Credits:** 3

### MUSI 466
- **Course:** Instrumental Music Methods II
- **Credits:** 3

### Select 1 credit from MUSI 100-MUSI 499
- **Credits:** 1

### Select 7 credits from the following:
- MUSI 380: Wind Symphony (Mason Core) (p. 142)
- MUSI 383: Symphonic Band (Mason Core) (p. 142)
- MUSI 387: Symphony Orchestra (Mason Core) (p. 142)
- MUSI 389: Jazz Ensemble (Mason Core) (p. 142)

### Total Credits: 25

---

1. As approved by Music advisor.

### Music Education: String Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
</tbody>
</table>

Two credits of MUSI 363

Two credits of MUSI 365

MUSI 368
- **Course:** Class Voice
- **Credits:** 1

Seven credits of MUSI 387
- **Course:** Symphony Orchestra (Mason Core) (p. 142)

MUSI 391
- **Course:** Conducting I
- **Credits:** 2

MUSI 396
- **Course:** Conducting II
- **Credits:** 2

MUSI 466
- **Course:** Instrumental Music Methods II
- **Credits:** 3

MUSI 467
- **Course:** Instrumental Music Methods I: Orchestra
- **Credits:** 3

Select 1 credit from MUSI 100-MUSI 499

### Total Credits: 25

1. As approved by Music advisor.

### Concentration in Music Technology (MTEC)

Students must complete all concentration requirements as well as requirements for one of the following emphases:

- Electroacoustic Music
- Engineering
- Recording

### Courses Required for All Emphases

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
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</table>

Select 6 credits from:

- MUSI 215: Theory for Pop and Jazz Music
- MUSI 216: Theory for 20th- and 21st-Century Music
- MUSI 217: Theory for 18th-Century Music
- MUSI 317: Baroque and Classical Forms

Six credits of:

- MUSI 248: Applied Music in Composition
- MUSI 249: Applied Music in Innovation and Technology
- MUSI 250: Computer Music Techniques

1. As approved by Music advisor.
or MUSI 247  Applied Music in Percussion
MUSI 252  Popular Music Arranging  3
MUSI 254  Music and Technology  3
MUSI 338  Music History in Society A  3
MUSI 354  Electronic Composition  3
MUSI 355  Recording Techniques  3
MUSI 358  Music Programming  3
MUSI 359  Topics in Music Technology  3
Music Ensemble Options 2  3
Two credits of
   MUSI 397  Music Technology Internship
MUSI 438  Music History in Society B  3
MUSI 439  Music History in Society C  3
MUSI 489  Music Technology Capstone  3
Lab Science (Mason Core)  4
6-7 credits of general electives  6-7
Total Credits  59

1  See Music advisor for permission and course options.
2  Transfer students must earn at least 2 credits at Mason.

**Emphasis Requirement**

**Music Technology: Electroacoustic Music**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 359</td>
<td>Topics in Music Technology 1</td>
<td>3</td>
</tr>
<tr>
<td>Four credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUSI 448</td>
<td>Applied Music in Composition</td>
<td>4</td>
</tr>
<tr>
<td>Two credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142) (Healing Arts Ensemble or Contemporary Ensemble)</td>
<td>2</td>
</tr>
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</table>

**MATH**

Select one from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 106</td>
<td>Quantitative Reasoning (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 115</td>
<td>Analytic Geometry and Calculus I (Honors) (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Additional Coursework**

Select 13-14 credits from the following: 1 13-14

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUSI 228</td>
<td>Applied Music in Composition</td>
<td></td>
</tr>
<tr>
<td>or MUSI 248</td>
<td>Applied Music in Composition</td>
<td></td>
</tr>
<tr>
<td>or MUSI 448</td>
<td>Applied Music in Composition</td>
<td></td>
</tr>
<tr>
<td>MUSI 359</td>
<td>Topics in Music Technology</td>
<td></td>
</tr>
<tr>
<td>MUSI 397</td>
<td>Music Technology Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142) (1-3 credits)</td>
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</tr>
<tr>
<td>Coursework from any of the following prefixes:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS (p. 1468)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECE (p. 1611)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT (p. 1850)</td>
<td></td>
<td></td>
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<tr>
<td>MATH (p. 1923)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS (p. 2055)</td>
<td></td>
<td></td>
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</tbody>
</table>

Total Credits  27-30

1  Must be electroacoustic music emphasis.
2  At least one credit of additional coursework or general electives must come from 300 or 400 level courses.

**Music Technology: Engineering Emphasis**

A double degree in a STEM field or the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 115</td>
<td>Analytic Geometry and Calculus I (Honors) (Mason Core) (p. 142)</td>
<td></td>
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</table>

**Additional Coursework**

Coursework from any of the following prefixes: 22

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS (p. 1468)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECE (p. 1611)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT (p. 1850)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH (p. 1923)</td>
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<td></td>
</tr>
<tr>
<td>MBUS (p. 1954)</td>
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<tr>
<td>PHYS (p. 2055)</td>
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<td></td>
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</tbody>
</table>

Total Credits  26

1  At least 10 credits from additional coursework or general electives must come from 300 or 400 level courses.

**Music Technology: Recording Emphasis**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUS 100</td>
<td>Business and Society (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 359</td>
<td>Topics in Music Technology 1</td>
<td>3</td>
</tr>
<tr>
<td>Two credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUSI 395</td>
<td>Teaching Internship</td>
<td>2</td>
</tr>
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</table>

**MATH**

Select one from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 106</td>
<td>Quantitative Reasoning (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 115</td>
<td>Analytic Geometry and Calculus I (Honors) (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td></td>
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</tbody>
</table>

**Additional Coursework**

Select 14-15 credits of additional coursework from the following: 14-15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 106</td>
<td>Quantitative Reasoning (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
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<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
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<tr>
<td>MATH 115</td>
<td>Analytic Geometry and Calculus I (Honors) (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

2  At least 10 credits from additional coursework or general electives must come from 300 or 400 level courses.
MUSI 221 Applied Music I (1-4 credits)
MUSI 359 Topics in Music Technology
MUSI 397 Music Technology Internship 1-4
MUSI 485 Chamber Ensembles (Mason Core) (p. 142) (1-3 credits)

Coursework from any of the following prefixes:
ECE (p. 1611)
ECON (p. 1564)
IT (p. 1850)
MATH (p. 1923)
MBUS (p. 1954)
PHYS (p. 2055)

Total Credits 27-30

1 Topic must be in Recording emphasis.
2 At least 5 credits from additional coursework or general electives must come from 300 or 400 level courses.

Concentration in Performance (PFM)
Students must complete all concentration requirements as well as requirements for one of the following emphases:

- Brass
- Guitar
- Keyboard
- Percussion
- String
- Voice
- Woodwind

Courses Required for All Emphases

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 214</td>
<td>Aural Skills IV</td>
<td>2</td>
</tr>
</tbody>
</table>

Select 9 credits from:
- MUSI 215 Theory for Pop and Jazz Music
- MUSI 216 Theory for 20th- and 21st-Century Music
- MUSI 217 Theory for 18th-Century Music
- MUSI 317 Baroque and Classical Forms

Select 8 credits from MUSI 242-MUSI 248 (see Applied Music Options) (8)

Select 8 credits from MUSI 442-MUSI 448 (see Applied Music Options) (8)

MUSI 259 Music in Computer Technology (Mason Core) (p. 142) 3
MUSI 319 Class Composition and Arranging 3
MUSI 324 Junior Recital (Mason Core) (p. 142) 1
MUSI 331 Music History in Society I 3
MUSI 332 Music History in Society II 3
MUSI 424 Senior Recital (Mason Core) (p. 142) 1
MUSI 432 Music History in Society IV 3
MUSI 491 Musical Communication in Performance (Mason Core) (p. 142) 1

Total Credits 45

Emphasis Requirement

Performance: Brass Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
</tbody>
</table>

Two credits of
- MUSI 395 Teaching Internship
- MUSI 396 Conducting II
- MUSI 419 Orchestration 3
- or MUSI 493 Topics in Music Theory

Eight credits of
- MUSI 485 Chamber Ensembles (Mason Core) (p. 142) 3

Select 9 credits from MUSI 100-MUSI 499 9

Select 8 credits from the following:
- MUSI 380 Wind Symphony (Mason Core) (p. 142)
- MUSI 383 Symphonic Band (Mason Core) (p. 142)
- MUSI 387 Symphony Orchestra (Mason Core) (p. 142)
- MUSI 389 Jazz Ensemble (Mason Core) (p. 142)

Total Credits 40

1 As approved by Music advisor.

Performance: Guitar Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
</tbody>
</table>

Two credits of
- MUSI 395 Teaching Internship
- MUSI 396 Conducting II
- MUSI 419 Orchestration 3
- or MUSI 493 Topics in Music Theory

Eight credits of
- MUSI 485 Chamber Ensembles (Mason Core) (p. 142) 3

Select 9 credits from MUSI 100-MUSI 499 9

Select 8 credits from the following:
- MUSI 381 University Chorale (Mason Core) (p. 142)
- MUSI 385 Chamber Singers (Mason Core) (p. 142)
- MUSI 389 Jazz Ensemble (Mason Core) (p. 142)

Total Credits 40

1 As approved by Music advisor.

Performance: Keyboard Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 351</td>
<td>Keyboard Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 371</td>
<td>Techniques of Accompanying I</td>
<td>1</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------------------------------</td>
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</tr>
<tr>
<td>MUSI 372</td>
<td>Techniques of Accompanying II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 373</td>
<td>Advanced Accompanying and Musicianship Skills</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 382</td>
<td>Piano Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>or MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
<tr>
<td>Two credits of</td>
<td>Teaching Internship</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>Three credits of</td>
<td>Selected Topics in Music</td>
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</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
<tr>
<td>Two credits of</td>
<td>Teaching Internship</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 396</td>
<td>Conducting II</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 399</td>
<td>Orchestra</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 493</td>
<td>Topics in Music</td>
<td>2</td>
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<tr>
<td>Eight credits of</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>8</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>6</td>
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<td>Select 9 credits from MUSI 100-MUSI 499</td>
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<td>9</td>
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<tr>
<td>Total Credits</td>
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</table>

1 As approved by Music advisor.

Performance: Percussion Emphasis

<table>
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<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
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</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
<tr>
<td>Two credits of</td>
<td>Teaching Internship</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>Three credits of</td>
<td>Selected Topics in Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
<tr>
<td>Two credits of</td>
<td>Teaching Internship</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 396</td>
<td>Conducting II</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 399</td>
<td>Orchestra</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 493</td>
<td>Topics in Music</td>
<td>2</td>
</tr>
<tr>
<td>Eight credits of</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>8</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>Select 9 credits from MUSI 100-MUSI 499</td>
<td></td>
<td>9</td>
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<tr>
<td>Total Credits</td>
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<td>40</td>
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</table>

1 As approved by Music advisor.

Performance: Voice Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
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<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 325</td>
<td>Performance Seminar and Vocal Literature for Singers and Accompanists I</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 326</td>
<td>Performance Seminar and Vocal Literature for Singers and Accompanists II - German and French</td>
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<tr>
<td>MUSI 341</td>
<td>Diction for Singers I: Italian, English</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 342</td>
<td>Diction for Singers II: German and French</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 352</td>
<td>Vocal Pedagogy and Lab</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 388</td>
<td>Fundamental Techniques of Stagecraft for Opera and Music Theater</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 396</td>
<td>Conducting II</td>
<td>2</td>
</tr>
<tr>
<td>Four credits of</td>
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<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>Select 9 credits from MUSI 100-MUSI 499</td>
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<td>9</td>
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<tr>
<td>Total Credits</td>
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</table>

1 As approved by Music advisor.

Performance: Woodwind Emphasis

<table>
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<tr>
<th>Code</th>
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<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 353</td>
<td>Instrumental Pedagogy and Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 379</td>
<td>Jazz Improvisation</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 391</td>
<td>Conducting I</td>
<td>2</td>
</tr>
<tr>
<td>Two credits of</td>
<td>Teaching Internship</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>Select 9 credits from MUSI 100-MUSI 499</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>

1 As approved by Music advisor.
**Accelerated Master's**

**Music, BM (Performance)/Music, Accelerated MM (Performance)**

**Overview**

Students in the Music, BM (p. 862) (Performance concentration) have the option of obtaining an accelerated Music, MM (p. 873) (Performance concentration).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admissions Requirements**

Applicants to accelerated master's programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit the following:

- An Accelerated Master's Program Application, available from the College of Visual and Performing Arts (CVPA) Graduate Studies
- 1-2 page Goals Statement
- Two letters of recommendation
- In addition, all applicants must complete a live performance audition. Arrangements for an audition must be made in advance by contacting the School of Music before the scheduled audition date. Auditions are held approximately once per month. Audition dates and audition application forms are available through the School of Music website.

Interested students should contact the Senior Academic Advisor, School of Music, for more details about the application process.

**Degree Requirements & Reserve Graduate Credit**

After admission and having earned 90 undergraduate credits, accelerated master's students complete 6 credits of graduate coursework in their field of study (with a 3.00 GPA or better in each course), specified by their undergraduate and graduate advisors. These credits will apply to the undergraduate degree and provide the student advanced standing in the MM Performance program. All graduate course prerequisites must be completed prior to enrollment. While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree.

To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

Students in the BM (Performance)/MM (Performance) accelerated degree program must fulfill all university requirements for the master's degree, including a minimum of 18 applicable graduate credits taken after the bachelor's degree has been completed and posted to the student's academic record. Successful completion of the accelerated MM will require one summer of coursework between years 4 and 5.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of

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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MUSI 396</td>
<td>Conducting II</td>
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<tr>
<td>MUSI 419</td>
<td>Orchestration</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 493</td>
<td>Topics in Music Theory</td>
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</tbody>
</table>

**Eight credits**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Select 9 credits from MUSI 100-MUSI 499**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 383</td>
<td>Symphonic Band (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**

40

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1 As approved by Music advisor.

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**Applied Music Options**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MUSI 242</td>
<td>Applied Music in Keyboard</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 243</td>
<td>Applied Music in Voice</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 244</td>
<td>Applied Music in Woodwind</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 245</td>
<td>Applied Music in Brass</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 246</td>
<td>Applied Music in String</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 247</td>
<td>Applied Music in Percussion</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 248</td>
<td>Applied Music in Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 442</td>
<td>Applied Music in Keyboard</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 443</td>
<td>Applied Music in Voice</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 444</td>
<td>Applied Music in Woodwind</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 445</td>
<td>Applied Music in Brass</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 446</td>
<td>Applied Music in String</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 447</td>
<td>Applied Music in Percussion</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 448</td>
<td>Applied Music in Composition</td>
<td>2-3</td>
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**Music Ensemble Options**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 382</td>
<td>Piano Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 383</td>
<td>Symphonic Band (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 385</td>
<td>Chamber Singers (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>
Music Minor

Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete requirements.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see Academic Policies (p. 77).

Music, BM/Arts Management, Accelerated MA

Overview

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete all requirements.

This accelerated option is offered through joint cooperation between the School of Music and the Arts Management Program.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees. For policies governing all graduate degrees, see the Academic Policies section of the catalog.

Admissions

Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Graduate Studies. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

Accelerated Option Requirements

As an undergraduate, the accelerated master’s student is to complete the two graduate courses indicated on their Accelerated Option Requirements.

As an undergraduate, the accelerated master’s student is to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of C in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students will begin their master’s program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credits

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree.

The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Music. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation and must be approved by the Dean’s Office.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

Music Minor

Banner Code: MUSI

Music Academic Advisor

A417 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/undergraduate/

Admissions & Policies

Admissions

All students pursuing a music minor must pass a music audition. Students in the keyboard area use the Keyboard Skills I credit as a music elective.

Policies

University policy states that students must earn 8 distinct credits that are not used for their major toward their minor, with a minimum grade of C earned in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 21

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 101</td>
<td>Introduction to Classical Music (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 113</td>
<td>Aural Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 115</td>
<td>Introduction to Music Theory</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 215</td>
<td>Theory for Pop and Jazz Music</td>
<td>3</td>
</tr>
<tr>
<td>or MUSI 216</td>
<td>Theory for 20th- and 21st-Century Music</td>
<td></td>
</tr>
<tr>
<td>or MUSI 217</td>
<td>Theory for 18th-Century Music</td>
<td></td>
</tr>
<tr>
<td>MUSI 114</td>
<td>Aural Skills II</td>
<td>1</td>
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<tr>
<td>or MUSI 172</td>
<td>Keyboard Skills II</td>
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<tr>
<td>Select 6 credits from Applied Music Options (course list follows)</td>
<td>6</td>
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<tr>
<td>Two semesters of</td>
<td></td>
<td></td>
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</table>
Select 3 credits from Music Ensemble Options (course list follows) 3

Total Credits 21

All students who enroll as music minors and jazz studies minors must take MUSI 300 Recital Attendance for two semesters. A grade of S (satisfactory) must be earned each semester.

Applied Music Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
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<td>MUSI 242</td>
<td>Applied Music in Keyboard</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 243</td>
<td>Applied Music in Voice</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 244</td>
<td>Applied Music in Woodwind</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 245</td>
<td>Applied Music in Brass</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 246</td>
<td>Applied Music in String</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 247</td>
<td>Applied Music in Percussion</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 248</td>
<td>Applied Music in Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 442</td>
<td>Applied Music in Keyboard</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 443</td>
<td>Applied Music in Voice</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 444</td>
<td>Applied Music in Woodwind</td>
<td>2-3</td>
</tr>
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<td>MUSI 445</td>
<td>Applied Music in Brass</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 446</td>
<td>Applied Music in String</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 447</td>
<td>Applied Music in Percussion</td>
<td>2-3</td>
</tr>
<tr>
<td>MUSI 448</td>
<td>Applied Music in Composition</td>
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Music Ensemble Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MUSI 380</td>
<td>Wind Symphony (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>MUSI 381</td>
<td>University Chorale (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 382</td>
<td>Piano Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 383</td>
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<td>1</td>
</tr>
<tr>
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<td>1</td>
</tr>
<tr>
<td>MUSI 387</td>
<td>Symphony Orchestra (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 389</td>
<td>Jazz Ensemble (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 485</td>
<td>Chamber Ensembles (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>

Music, MM

Banner Code: AR-MM-MUSI

Music Academic Advisor

A417 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/graduate/

The Music, MM degree is offered as an educational channel to meet the intellectual and career needs of qualified students. It is a comprehensive and advanced program of study with a choice of concentrations in performance, music education, composition, conducting, jazz studies, and pedagogy. The Music, MM with a concentration in music education does not provide licensure to teach music in public or private schools.

Admissions & Policies

Admissions

Requirements

In addition to fulfilling admission requirements for graduate study, applicants are expected to hold a baccalaureate degree in music or another discipline, with courses equaling the music requirements (minus the 7- to 8-credit teaching sequence) for the BA in music offered at Mason.

The following admission requirements must also be met:

- Performance: pre-screening submitted through SlideRoom and audition
- Conducting: pre-screening submitted through SlideRoom and audition
- Composition: submission of a portfolio of compositions
- Music Education: interview with music faculty, a video of sample classroom teaching and submission of a two- to three-page paper on the applicant's philosophy of music education.
- Pedagogy: audition in the primary applied teaching area is required. Applicants are expected to have large and small ensemble experience on the major instrument and should have presented a full solo recital or equivalent. All music teaching experience should be summarized.
- Jazz Studies: A portfolio of at least five jazz tunes in contrasting styles, as well as a complete repertoire list of all jazz tunes studied/performed. Submit all jazz materials via SlideRoom and schedule audition.
- Collaborative Piano: pre-screening submitted through SlideRoom and audition

Applicants should refer to the graduate admissions page of the School of Music website for specific details on what is required and how to submit their materials.

Diagnostic Entrance Exam

All students are required to complete diagnostic entrance examinations in music theory, music history, aural skills, and basic keyboard skills. These examinations must be taken prior to the beginning of the first semester of graduate study. A sufficient placement score can reduce or eliminate prerequisites for some of the 600-level and above courses in music theory and history. The exam is offered during a three-hour period prior to the beginning of classes of the fall and spring semesters.

Foreign Language Exams (Vocal Performance Emphasis)

Students in the MM degree program (emphasis in vocal performance) must take proficiency exams in French, German, Italian, and English to demonstrate diction competency. Students may be required to take MUSI 525 Performance Seminar and Vocal Literature for Singers and Accompanists I, MUSI 526 Performance Seminar and Vocal Literature for Singers and Accompanists II.

Comprehensive Exit Exam

All students are required to pass a comprehensive exit exam administered during the graduation semester or, in the case of students selecting the thesis option in the music education concentration,
on completion of 24 credits of course work and immediately before beginning work on the thesis. August graduates must take this exam during the preceding spring term. This exam is usually a three-hour written test, with questions based primarily on course work the student has taken toward the degree at Mason.

Policies
For policies governing all graduate degrees, see AP .6 Graduate Policies (p. 90). See College of Visual and Performing Arts (p. 803) for policies specific to the college.

Program Requirements
A student must successfully complete the appropriate 30 credits in graduate music courses. With approval of the graduate advisor, 3 non-music graduate credits may be taken.

The student is admitted as concentrating in one of six areas: performance, music education, composition, conducting, jazz studies, or pedagogy. All students are required to complete the 11 credits described as General Requirements plus 19 credits in one of the six areas identified as Additional Requirements. There are some limited possibilities for double concentrations. For details, see the director of graduate studies.

Requirements

Degree Requirements
Total credits: 30

General Requirements for All Concentrations
Music Education students will have 9 credits of General Requirements and 21 credits of Concentration Requirements; all other concentrations will have 11 credits of General Requirements and 19 credits of Concentration Requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MUSI 681</td>
<td>Graduate Choral Ensembles</td>
<td>2</td>
</tr>
<tr>
<td>MUSI 682</td>
<td>Wind Symphony</td>
<td></td>
</tr>
<tr>
<td>MUSI 683</td>
<td>Symphonic Band</td>
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<tr>
<td>MUSI 685</td>
<td>Graduate Chamber Ensemble</td>
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<td>MUSI 687</td>
<td>Symphony Orchestra</td>
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<td>MUSI 688</td>
<td>Opera and Musical Theater Ensemble</td>
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<td>MUSI 689</td>
<td>Jazz Ensemble</td>
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<tr>
<td>MUSI 611</td>
<td>Analytical Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 630 or MUSI 640 or MUSI 730</td>
<td>Topics in World Musics or Advanced Topics in Music History</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 662</td>
<td>Introduction to Research in Music</td>
<td>3</td>
</tr>
<tr>
<td>CVPA 600</td>
<td>CVPA Graduate ProSeminar</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Credits 11

Concentration in Composition (CPO)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 728</td>
<td>Applied Music in Composition</td>
<td>9</td>
</tr>
<tr>
<td>MUSI 613</td>
<td>Graduate Orchestration</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 630 or MUSI 640</td>
<td>Topics in Music History or Advanced Topics in Music History</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 730</td>
<td>Advanced Topics in Music History</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 790</td>
<td>Graduate Recital</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 19

1 Students may pass out of MUSI 613 Graduate Orchestration with a satisfactory score on the Graduate Orchestration Placement Exam. In this case, students will take an additional 3 credits of a theory or history elective chosen from: MUSI 610 Topics in Music Theory, MUSI 710 Advanced Topics in Music Theory, MUSI 630 Topics in Music History and Literature, or MUSI 730 Advanced Topics in Music History.

Concentration in Conducting (CDC)
The number of students accepted in the graduate conducting concentration is limited by the extent to which it is possible to provide students with practical experience.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 729</td>
<td>Applied Music in Conducting</td>
<td>9</td>
</tr>
<tr>
<td>MUSI 613</td>
<td>Graduate Orchestration</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 790</td>
<td>Graduate Recital</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 610 or MUSI 710</td>
<td>Topics in Music Theory or Advanced Topics in Music Theory</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 630 or MUSI 640 or MUSI 730</td>
<td>Topics in Music History or World Musics or Advanced Topics in Music History</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 712</td>
<td>Composition for Conductors and Performers</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 19

Concentration in Jazz Studies (JAZZ)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 615</td>
<td>Advanced Jazz Improvisation</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 650</td>
<td>Topics in Jazz Studies</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 721</td>
<td>Applied Music</td>
<td></td>
</tr>
<tr>
<td>MUSI 722</td>
<td>Applied Music in Keyboard</td>
<td></td>
</tr>
<tr>
<td>MUSI 723</td>
<td>Applied Music in Voice</td>
<td></td>
</tr>
<tr>
<td>MUSI 724</td>
<td>Applied Music in Woodwind</td>
<td></td>
</tr>
<tr>
<td>MUSI 725</td>
<td>Applied Music in Brass</td>
<td></td>
</tr>
<tr>
<td>MUSI 726</td>
<td>Applied Music in String</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

1 Must be taken within the student’s first 2 semesters.
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 727</td>
<td>Applied Music in Percussion</td>
<td></td>
</tr>
<tr>
<td>MUSI 790</td>
<td>Graduate Recital</td>
<td>1</td>
</tr>
<tr>
<td>Select 3 credits of graduate electives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>19</td>
</tr>
</tbody>
</table>

### Concentration in Music Education (MUE)

**Code** | **Title** | **Credits** | **Credits** |
----------|-----------|-------------|-------------|
Six credits of | | | 6 |
| MUSI 592 | Topics in Music (or) | | |
| MUSI 660 | Topics in Music Education | | |
| MUSI 661 | Psychology of Music Teaching and Learning | | 3 |
| MUSI 663 | Aesthetics of Music Education | | 3 |
| Select 9 credits of 500 - 800 level MUSI courses | 9 |
| Total Credits | | 21      |

1 Must be approved by advisor.

### Concentration in Performance (PFM)

**Code** | **Title** | **Credits** | **Credits** |
----------|-----------|-------------|-------------|
Select 1 credit of Graduate Ensemble from the following: | | | 1 |
| MUSI 681 | Graduate Choral Ensembles | | |
| MUSI 682 | Wind Symphony | | |
| MUSI 683 | Symphonic Band | | |
| MUSI 685 | Graduate Chamber Ensemble | | |
| MUSI 687 | Symphony Orchestra | | |
| MUSI 688 | Opera and Musical Theater Ensemble | | |
| MUSI 689 | Jazz Ensemble | | |
| Select 8 credits of 500 - 800 level MUSI electives | | 8 |
| Select 9 credits of Graduate Applied Music from the following: | | 9 |
| MUSI 721 | Applied Music | | |
| MUSI 722 | Applied Music in Keyboard | | |
| MUSI 723 | Applied Music in Voice | | |
| MUSI 724 | Applied Music in Woodwind | | |
| MUSI 725 | Applied Music in Brass | | |
| MUSI 726 | Applied Music in String | | |
| MUSI 727 | Applied Music in Percussion | | |
| MUSI 790 | Graduate Recital | | 1 |
| Total Credits | | 19      |

1 Piano Performance requires 3 credits of MUSI 573 Accompanying and Musicianship III and 5 credits of 500 - 800 level MUSIC electives.

### Concentration in Pedagogy (PDGY)

**Code** | **Title** | **Credits** | **Credits** |
----------|-----------|-------------|-------------|
MUSI 573 | Accompanying and Musicianship III (piano pedagogy only; all other areas take 3 elective credits) | | 3 |
| Select 3 credits from the following: | | | 3 |
| MUSI 551 | Keyboard Pedagogy | | |
| MUSI 552 | Vocal Pedagogy and Lab | | |
| MUSI 553 | Instrumental Pedagogy and Literature | | |
| Select 3 credits from the following: | | | 3 |

### Concentration in Collaborative Piano (COLP)

**Code** | **Title** | **Credits** | **Credits** |
----------|-----------|-------------|-------------|
MUSI 573 | Accompanying and Musicianship III | | 3 |
| MUSI 695 | Teaching Internship | | 2 |
| 8 credits of: | | | 8 |
| MUSI 722 | Applied Music in Keyboard | | |
| 2 credits of: | | | 2 |
| MUSI 790 | Graduate Recital | | |
| Select 4 credits of electives from the following: | | | 4 |
| MUSI 525 | Performance Seminar and Vocal Literature for Singers and Accompanists I | | |
| MUSI 526 | Performance Seminar and Vocal Literature for Singers and Accompanists II | | |
| MUSI 541 | Diction for Singers I: Italian Diction and English Diction | | |
| MUSI 542 | Diction for Singers II: German Diction and French Diction | | |
| MUSI 572 | Techniques of Accompanying II | | |
| MUSI 610 | Topics in Music Theory | | |
| MUSI 630 | Topics in Music History and Literature | | |
| or MUSI 640 | Topics in World Musics | | |
| MUSI 685 | Graduate Chamber Ensemble | | |
| MUSI 695 | Teaching Internship | | |
| MUSI 710 | Advanced Topics in Music Theory | | |
| MUSI 730 | Advanced Topics in Music History | | |
| Total Credits | | 19      |
Accelerated Master's

Music, BM (Performance)/Music, Accelerated MM (Performance)

Overview
Students in the Music, BM (p. 862) (Performance concentration) have the option of obtaining an accelerated Music, MM (p. 873) (Performance concentration).

For more detailed information, see AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admissions Requirements
Applicants to accelerated master's programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 100 credits. Applicants should submit the following:

- An Accelerated Master's Program Application, available from the College of Visual and Performing Arts (CVPA) Graduate Studies
- 1-2 page Goals Statement
- Two letters of recommendation
- In addition, all applicants must complete a live performance audition. Arrangements for an audition must be made in advance by contacting the School of Music before the scheduled audition date. Auditions are held approximately once per month. Audition dates and audition application forms are available through the School of Music website.

Interested students should contact the Senior Academic Advisor, School of Music, for more details about the application process.

Degree Requirements & Reserve Graduate Credit
After admission and having earned 90 undergraduate credits, accelerated master's students complete 6 credits of graduate coursework in their field of study (with a 3.00 GPA or better in each course), specified by their undergraduate and graduate advisors. These credits will apply to the undergraduate degree and provide the student advanced standing in the MM Performance program. All graduate course prerequisites must be completed prior to enrollment. While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree.

To apply these credits to the master's degree, students should use the Bachelor's/Accelerated Master's Transition Form.

Students in the BM (Performance)/MM (Performance) accelerated degree program must fulfill all university requirements for the master's degree, including a minimum of 18 applicable graduate credits taken after the bachelor's degree has been completed and posted to the student's academic record. Successful completion of the accelerated MM will require one summer of coursework between years 4 and 5.

As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. The regular designed timeframe would be a start in the Fall and completion of all coursework in the Summer five years later with the exception of Capstone, which is only offered in Fall and Spring. Students may need a longer timeframe to complete requirements.

For more detailed information, see AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 90). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Musical Arts, DMA

Banner Code: AR-DMA-MUAR

Music Academic Advisor
A417 deLaski Performing Arts Building
Fairfax Campus

Phone: 703-993-1392
Email: music@gmu.edu
Website: music.gmu.edu/degree-programs/graduate/

The Doctor of Musical Arts (DMA) requires 90 credits, 60 credits beyond the Master's degree in music. The doctor of musical arts concentrations are composition, conducting, and performance. While these concentrations share some of the required course work, each is also distinct in course requirements. Professional musicians earn the DMA to enhance and extend their knowledge and practice within their area of specialization. The DMA student focuses on the profession of music performance, as well as the theory and practice of the discipline.

Admissions & Policies

Admissions

Requirements
In addition to meeting all admission requirements for graduate study, applicants should submit the following:

- Master's degree in music from an accredited university;
- GPA of 3.00 in master's-level music course work, 3.50 in courses related to the prospective area of doctoral study (performance, composition, or conducting);
- Three recommendations;
- Satisfactory scores on GRE;
- A sample of academic writing such as a graduate-level paper from a (musicology or music history) course taken during MM studies;
- Audition (performance and conducting students only). Specific details of those requirements are available from the advisors.
- A portfolio of recent compositions and recordings of performances (composition students only).

Applicants should refer to the graduate admissions page of the School of Music website for specific details on what is required and how to submit their materials. There is no "provisional" admission. Students must meet appropriate standards prior to commencing doctoral studies.

Policies

For policies governing all graduate degrees, see AP .6 Graduate Policies (p. 90). See College of Visual and Performing Arts (p. 803) for policies specific to the college.
Reduction of Credit
Students must have a master’s degree before being admitted to the Doctor of Musical Arts Program. Most students receive a reduction of study of 30 credits based on their previous master's degree.

Requirements

Degree Requirements
Total credits: 90

The following degree plan is based on a student who receives a full 30 credit reduction. Students who do not receive a full credit reduction should choose additional credits in consultation with their advisor.

Placement Examinations
Prior to the beginning of the first semester of doctoral studies, the student must complete placement examinations in music theory, music history, and musicianship (including aural skills and keyboard skills). Positive scores on the placement exams may reduce or eliminate prerequisites for courses in music history and music theory. Recitals can be scheduled only after completion of any necessary prerequisites in music theory, music history, and musicianship.

Doctoral Coursework
The doctoral student must maintain a minimum of 3.00 GPA in courses presented on the degree plan, which may include no more than 6 credits with a grade of C. The GPA calculation excludes all transfer courses and Mason extended studies or non degree credits not formally approved for the degree.

Students must complete the following required courses as well as those in their chosen concentration:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 685</td>
<td>Graduate Chamber Ensemble</td>
<td>6</td>
</tr>
<tr>
<td>MUSI 810</td>
<td>Doctoral Seminar in Analysis</td>
<td>15</td>
</tr>
<tr>
<td>MUSI 828</td>
<td>Doctoral Applied Music in Composition</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 880</td>
<td>Doctoral Major Ensemble</td>
<td>6</td>
</tr>
<tr>
<td>MUSI 630</td>
<td>Topics in Music History and Literature</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 640</td>
<td>Topics in World Musics</td>
<td>6</td>
</tr>
<tr>
<td>MUSI 730</td>
<td>Advanced Topics in Music History</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits: 39

1 Approved electives could be from music history, music literature, world music, music theory, conducting, music education, secondary Applied Music, ensemble (including chamber music), or relevant nonmusic courses.

Concentration in Conducting (CDC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 630</td>
<td>Topics in Music History and Literature</td>
<td>5</td>
</tr>
<tr>
<td>MUSI 730</td>
<td>Advanced Topics in Music History</td>
<td>6</td>
</tr>
<tr>
<td>MUSI 770</td>
<td>Advanced Topics in Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 810</td>
<td>Doctoral Seminar in Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 829</td>
<td>Doctoral Applied Music in Conducting</td>
<td>15</td>
</tr>
<tr>
<td>MUSI 880</td>
<td>Doctoral Major Ensemble</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 39

1 Approved electives could be from music history, music literature, world music, music theory, conducting, music education, secondary Applied Music, ensemble (including chamber music), or relevant nonmusic courses.

Concentration in Performance (PFM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 622</td>
<td>Doctoral Applied Music in Keyboard</td>
<td>15</td>
</tr>
<tr>
<td>MUSI 623</td>
<td>Doctoral Applied Music in Voice</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 624</td>
<td>Doctoral Applied Music in Woodwind</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 625</td>
<td>Doctoral Applied Music in Brass</td>
<td>4</td>
</tr>
<tr>
<td>MUSI 626</td>
<td>Doctoral Applied Music in String</td>
<td>6</td>
</tr>
<tr>
<td>MUSI 627</td>
<td>Doctoral Applied Music in Percussion</td>
<td>1</td>
</tr>
</tbody>
</table>

Select 3 credits of approved graduate electives | 3 |

Total Credits: 39

1 Approved electives could be from music history, music literature, world music, music theory, conducting, music education, secondary Applied Music, ensemble (including chamber music), or relevant nonmusic courses.

Concentration in Composition (CPO)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 610</td>
<td>Topics in Music Theory</td>
<td>1</td>
</tr>
<tr>
<td>or MUSI 710</td>
<td>Advanced Topics in Music Theory</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 614</td>
<td>Music Theory Pedagogy</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 6 credits from the following: 4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 630</td>
<td>Topics in Music History and Literature</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits: 8

1 Must be taken within the student’s first 2 semesters.
Residency
More than half of all credits (minimum 72) must be taken in doctoral degree status, after admission to the degree program. One year (fall and spring) of consecutive full-time study (9 credits per semester; 18 credits per year) is recommended. Or, the academic residency requirement may be fulfilled by earning 21 credits within 12 months (fall and spring semesters and summer term). Academic residency should be completed during the first year of study. Any necessary prerequisite courses at the 500 level can be included to meet the residency requirement. Language courses at the undergraduate level may not. Note: The academic residency does not imply meeting the standards of Virginia residency for tuition purposes.

Language Requirements
Reading proficiency is required in a language appropriate to the student's major area of study. Normally, this will be German, French, or Italian. The director of graduate studies and the Graduate Committee will determine the appropriate area of study. Reading proficiency may be accomplished by completing a reading examination provided by the music faculty. The reading examination provided by the faculty will normally consist of translation (with dictionary) of appropriate technical passages relevant to the student's area of study within a two-hour period. The language reading proficiency should be completed prior to earning 12 credits of courses at the 600 level or above.

Graduate Committee
The Graduate Committee will evaluate the progress of the student annually. Continuation in the program is subject to the endorsement of this group.

Comprehensive Exams
After the completion of required courses (excluding dissertation credits) or during the semester when completion of those courses is anticipated, the student will take comprehensive examinations. The written exams will be followed by a one-hour oral exam to clarify issues included in the written exams.

Doctoral Research

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 998</td>
<td>Dissertation Proposal (a minimum of 3 credits)</td>
<td></td>
</tr>
<tr>
<td>MUSI 999</td>
<td>Dissertation (a minimum of 7 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 13

Advancement to Candidacy
Before doctoral students may be advanced to candidacy by the dean of the College of Visual and Performing Arts, they must complete all course work required by the program faculty, be certified in all relevant doctoral research skills, pass the comprehensive exams, and be recommended by the Graduate Committee, the director of graduate studies, and the director of the School of Music. Students advanced to candidacy after the add period for a given semester must wait until the following semester to register for MUSI 999 Dissertation.

Dissertation Committee
The dissertation is the capstone experience of doctoral study. The dissertation will be guided by the Dissertation Committee consisting of at least three members of the music faculty. The student's major professor will chair the committee. The director of graduate studies of the School of Music may be part of the committee; if not, he or she will serve ex officio. All Dissertation Committee members will be appointed by the dean of the College of Visual and Performing Arts and have graduate faculty status, as approved by the university provost. Performance and composition recitals are also subject to the approval of the Dissertation Committee.

Final Defense and Graduation
When all degree requirements have been satisfied, including completion of the doctoral dissertation, the doctoral candidate may request a doctoral defense. Approval for the defense must be obtained from the Dissertation Committee, the director of graduate studies and the director of the School of Music, and the dean of the College of Visual and Performing Arts. Notice of a defense must be circulated to the university community two weeks before the defense date.

All relevant rules regarding schedule, fees, and other matters as described in the catalog must be followed. All copies of the dissertation materials and fees must be paid before the doctoral degree is awarded.

School of Theater
Ken Elston, Director
A407 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-1120
Email: theater@gmu.edu
Website: theater.gmu.edu
Undergraduate Programs

Theater BA and BFA

The School of Theater offers BA and BFA degrees and prepares students for graduate study or entry into the profession through rigorous, concentrated, and individualized training; however, students are encouraged to maintain wide-ranging interests within the school and throughout the university's extensive offerings. Theater majors organize their advanced work within the major to include classes in areas of emphasis including performance, design and technical theater, and other theater studies.

Theater BA Concentrations

Theater majors must choose to complete their Bachelor of Arts degree with a concentration in one of the following areas: Design and Technical Theater, Performance (Acting and Directing), Theater Education for Theater Arts PK-12, or Theater Studies. Students must earn a minimum 2.5 cumulative GPA to complete a BA with a concentration.

Certification for Theater Education for Theater Arts PK-12

The Theater Education for Theater Arts PK-12 concentration is approved by the Virginia State Department of Education and administered through the College of Education and Human Development, which is accredited by the National Council for the Accreditation of Teacher Education (NCATE). Upon degree conferral and completion of all requirements, students may be eligible to apply for Virginia State Licensure. Minimum scores on the Praxis Core and VCLA tests must be achieved before state licensure is granted.

Students must be formally accepted into the Theater Education for Theater Arts PK-12 concentration.

Theater BFA Concentrations

In addition to the Mason Core requirements for the Bachelor of Arts degree, students in the Theater BFA must complete a minimum of 76 credits in the major: 46 credits of required core courses and 30 credits in a concentration. Concentrations are: Design for Stage and Screen, Musical Theater Performance, and Performance for Stage and Screen (Acting and Directing). All students pursuing a BFA in Theater must earn a minimum 2.5 cumulative GPA for graduation.

Graduate Programs

Accelerated Master's Program

The School of Theater offers a Theater, BA/Arts Management, Accelerated MA option which allows undergraduate students to take graduate classes that can be used towards a designated Master’s degree. Undergraduates who wish to pursue the accelerated Master’s route should talk to their academic advisor first to see if they qualify. Students must be within 75-90 credits of their Bachelor’s program to be eligible to apply; those who have earned more than 90 credits will not be considered. Students must be approved by their academic advisor and formally apply and be accepted to the Master’s program through an Accelerated Master’s application. For more information about admissions requirements and the application process, students should visit the college website (http://cvpa.gmu.edu).

Visual and Performing Arts, MFA

The School of Theater offers one concentration under the Master of Fine Arts, Visual and Performing Arts degree: Theater. Applicants to the program must designate which concentration they intend to apply for on the application. Each concentration has its own unique set of admissions requirements and program requirements.

Faculty

School Faculty

Professors

Davis, McDonald

Associate Professors

Elston (Director), Gero, Johnsen-Neshati

Assistant Professor

Janis, Moijgani, Sivigny

Administrative Faculty (Instructional)

Lechter, Murray

Adjunct Faculty

Alman, Cadby, Dunayer, Gaines, Gardner, Hart, Kessinger, Lee, Lennon, Male, Messegee, Nanni-Messegee, Ohanian, Robinson Jr., Van Slyke, Walsh, Yamamoto

Requirements & Policies

Admission Requirements

Admission to George Mason University requires application through Mason's Admissions Office. Entrance into all Theater programs is by interview and audition or portfolio review. Information about the audition, portfolio review and interview process, including dates, can be found at the College of Visual and Performing Arts (https://cvpa.gmu.edu/admissions/undergraduate-admissions/school-theater-admissions). Please note that these are two separate processes.

Interviews will be conducted by appointment and candidates must prepare an appropriate resume.

Contact the School of Theater to schedule your interview. Students who audition or present a portfolio at theater conferences (i.e. Virginia Theatre Association, Southeastern Theater Conference, etc.) before or after applying to Mason are required to attend a separate interview on campus.

Writing-Intensive Requirement

The university requires all students to complete at least one course designated writing-intensive in their major at the 300 level or above. Students seeking a BA or BFA in theater fulfill this requirement by successfully completing THR 350 Script Analysis or THR 482 Advanced Screenplay Workshop.

Production Requirements

Participation in Theater at Mason productions is expected of all declared majors. Students must have a minimum 2.5 cumulative GPA to participate in Theater at Mason productions.

Students must also earn four (4) practicum credits, one (1) credit for satisfactory completion (a minimum of 30 hours) of each of four (4) performance and production assignments in the major, including faculty
or guest-directed Mason Players Mainstage, and student-directed Studio productions.

All freshmen, first year transfer, and new Theater majors must register for THR 198 Theatrical Construction Practicum and THR 199 Production Run Crew Practicum during their first academic year.

Assignments for THR 196 Performance or Design Practicum and THR 197 Stage or Literary Practicum will include a presentation of portfolio documents demonstrating a practical analysis of the role, design, or support position to subject area mentors.

- THR 196 Performance or Design Practicum assignments include actor, designer, assistant designer, stage manager, and assistant stage manager.
- THR 197 Stage or Literary Practicum assignments include director, assistant director, dramaturg, master electrician, technical director, playwright, house management, and publicity.
- THR 198 Theatrical Construction Practicum assignments include scenery construction and painting, costume construction, electrician, and props.
- THR 199 Production Run Crew Practicum assignments include stage crew, light board operator, sound board operator, wardrobe, and fly crew.

Unless registered for a Theater course approved as directly connected to production (i.e. THR 196 Performance or Design Practicum, THR 197 Stage or Literary Practicum, THR 198 Theatrical Construction Practicum, THR 199 Production Run Crew Practicum, THR 492 Studio Project or THR 495 Senior Capstone Project) all students (including non-Theater majors) electing to participate in a Theater at Mason production must register for THR 200 Play Production Practicum concurrent with participation.

**Theater Honors Program**

See the Theater, BA (p. 884) or Theater, BFA (p. 887) for specific details.

**Policies**

**BA/BFA Policies**

Students seeking to earn a BA or BFA as a second bachelor’s degree, either concurrently or sequentially, must complete all theater degree requirements. Students must earn a minimum 2.00 cumulative GPA in their major. A student must earn a minimum cumulative GPA of 2.5 to complete a BA with a concentration or a BFA.

**Programs**

- Audio Production Minor
- Event Technical Production Minor (CVPA)
- Teaching Theatre PK-12 Graduate Certificate
- Theater Minor
- Theater Performance Minor
- Theater, BA
- Theater, BFA

**Audio Production Minor**

Banner Code: AUPD

Sara Simanski, Academic Advisor
A407 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-6079
Email: ssimanski@gmu.edu
Website: https://theater.gmu.edu/academics/theater-programs

Those students interested in exploring audio production in a purely music-based experience should consider the minor in Music Technology (p. 858).

**Admissions & Policies**

**Policies**

University policy states that students must earn 8 distinct credits that are not used for their major toward their minor, with a minimum grade of 2.00 earned in all courses applied to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 254</td>
<td>Music and Technology</td>
<td>3</td>
</tr>
<tr>
<td>THR 315</td>
<td>Sound Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Other Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 12 credits from the following:</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>AVT 374</td>
<td>Sound Art I</td>
<td></td>
</tr>
<tr>
<td>FAVS 333</td>
<td>Sound Editing and Recording</td>
<td></td>
</tr>
<tr>
<td>GAME 250</td>
<td>Music for Film and Video</td>
<td></td>
</tr>
<tr>
<td>MUSI 354</td>
<td>Electronic Composition</td>
<td></td>
</tr>
<tr>
<td>MUSI 355</td>
<td>Recording Techniques</td>
<td></td>
</tr>
<tr>
<td>THR 313</td>
<td>Event Technical Production</td>
<td></td>
</tr>
<tr>
<td>THR 337</td>
<td>Sound Design</td>
<td></td>
</tr>
<tr>
<td>THR 415</td>
<td>Advanced Sound Engineering</td>
<td></td>
</tr>
<tr>
<td>or courses as approved by Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

**Event Technical Production Minor (CVPA)**

Banner Code: EVTP

Sara Simanski, Academic Advisor
A407 deLaski Performing Arts Building
Fairfax Campus
This minor is offered by the College of Visual and Performing Arts (p. 803) (School of Theater (p. 878)) and the College of Education and Human Development (p. 161) (School of Recreation, Health, and Tourism (p. 221)). This minor, available to all Mason undergraduate students, offers the opportunity to study special event management and event technologies, design and production for installations and special events. Students will gain insights into industry standards and practices regarding planning, managing, and executing live events and presentations. The required courses in this minor provide students with a foundational overview of management and production. Students can complement that knowledge with specific electives that meet their individual interests in events and areas of design and technology.

### Admissions & Policies

#### Policies

University policy states that students must earn 8 distinct credits that are not used for their major toward their minor, with a minimum grade of 2.00 earned in all courses applied to the minor. For policies governing all minors, see AP .5.3.4 Minors (p. 90).

#### Requirements

### Minor Requirements

**Total credits: 18**

#### Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 230</td>
<td>Fundamentals of Production (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>THR 313</td>
<td>Event Technical Production</td>
<td>3</td>
</tr>
<tr>
<td>or TOUR 313</td>
<td>Event Technical Production</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 220</td>
<td>Introduction to Event Management</td>
<td>3</td>
</tr>
<tr>
<td>TOUR 355</td>
<td>Event Logistics</td>
<td>3</td>
</tr>
<tr>
<td>THR 314</td>
<td>Lighting Stagecraft</td>
<td></td>
</tr>
<tr>
<td>THR 315</td>
<td>Sound Engineering</td>
<td></td>
</tr>
<tr>
<td>THR 333</td>
<td>Scenic Design</td>
<td></td>
</tr>
<tr>
<td>THR 343</td>
<td>Costume Technology</td>
<td></td>
</tr>
<tr>
<td>TOUR 221</td>
<td>Event Implementation and Evaluation</td>
<td></td>
</tr>
<tr>
<td>PRLS 310</td>
<td>Program Planning and Evaluation</td>
<td></td>
</tr>
<tr>
<td>THR 490</td>
<td>Special Topics in Theater</td>
<td></td>
</tr>
<tr>
<td>Or other course by permission of Director.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits: 18**

### Teaching Theatre PK-12 Graduate Certificate

**Banner Code: AR-CERG-THRP**

Kristin Johnsen-Neshati, Dramaturg
The BA degree stresses the breadth of a liberal arts education in the belief that such study, combined with serious practical training and experience, offers the best preparation for a life in theater and screen.

Students complete the theater core. To organize their advance work within the major, students elect a course of study from five concentrations:

- Performance (Acting and Directing)
- Design and Technical Theater
- Playwriting and Dramaturgy
- Theater Education for Theater Arts PK-12
- Theater Studies

The BA degree stresses the breadth of a liberal arts education in the belief that such study, combined with serious practical training and experience, offers the best preparation for a life in theater and screen.

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George Mason University

THR 380  Playwriting I
THR 381  Playwriting II
THR 382  Screenplay Workshop
THR 482  Advanced Screenplay Workshop
THR 484  Translation Adaptation for Stage Screen
or permission of Director

Dramatic Literature  3

THR 351  Dramatic Theory and Criticism
THR 352  Dramatic Literature Seminar
THR 355  Moral Vision in American Theater
THR 359  World Stages (Mason Core) (p. 142)
THR 395  Theater as the Life of the Mind (Mason Core) (p. 142)
THR 424  Contemporary Women Playwrights
or permission of Director

Total Credits  46

1  Must be taken four times during course of study.
2  May fulfill either Mason Core (p. 142) Global Understanding requirement or dramatic literature requirement but not both.

Theater Concentrations

Theater majors earning a BA in Theater must select one of the following concentrations:

Concentrations
- Concentration in Design and Technical Theater (DTT) (p. 883)
- Concentration in Performance (PFM) (p. 883)
- Concentration in Theater Education for Theater Arts PK-12 (THEA) (p. 883)
- Concentration in Theater Studies (THST) (p. 884)

Concentration in Design and Technical Theater (DTT)
Provides a foundation of knowledge, technique, and experience in one or more areas of theater design and technology in preparation for advanced study and professional work in the field.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 339</td>
<td>Principles of Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select two courses from the following:</td>
<td>6</td>
</tr>
<tr>
<td>THR 313</td>
<td>Event Technical Production</td>
<td></td>
</tr>
<tr>
<td>THR 314</td>
<td>Lighting Stagecraft</td>
<td></td>
</tr>
<tr>
<td>THR 315</td>
<td>Sound Engineering</td>
<td></td>
</tr>
<tr>
<td>THR 332</td>
<td>History of Fashion and Dress</td>
<td></td>
</tr>
<tr>
<td>THR 343</td>
<td>Costume Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or permission of Director</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>THR 316</td>
<td>Scene Painting</td>
<td></td>
</tr>
<tr>
<td>THR 330</td>
<td>Seminar in Technical Theater</td>
<td></td>
</tr>
<tr>
<td>THR 331</td>
<td>Drafting and Model Making</td>
<td></td>
</tr>
<tr>
<td>THR 333</td>
<td>Scenic Design</td>
<td></td>
</tr>
<tr>
<td>THR 334</td>
<td>Lighting Design</td>
<td></td>
</tr>
<tr>
<td>THR 335</td>
<td>Costume Design</td>
<td></td>
</tr>
<tr>
<td>THR 337</td>
<td>Sound Design</td>
<td></td>
</tr>
<tr>
<td>THR 342</td>
<td>Makeup Design</td>
<td></td>
</tr>
<tr>
<td>THR 434</td>
<td>Advanced Lighting Design</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or permission of Director</td>
<td></td>
</tr>
</tbody>
</table>

Upper-Level Theater Electives  12
12 credits of 300-400 level THR coursework

Total Credits  24

Concentration in Performance (PFM)
Designed for the serious student of acting and directing with professional aspirations. Solid grounding in the fundamentals of performance analysis and basic training of the actor’s instrument are complemented by a rigorous, sequential instruction in the various facets of the actor’s craft.

At its core, the Performance Concentration is a blend of Modern and Classical actor training using a Stanislavski-grounded approach balanced with techniques for understanding texts written two hundred years before “motivation” and “characterization” entered the critical vocabulary. Rounding out the curriculum is specialized study in vocal production and movement technique. Matriculation in this program expresses a profound commitment to a rigorous intellectual, physical and emotional investigation of the discipline of performance over a two-year period. Professional development is enhanced with ongoing student progress reviews, support and advising from Performance Concentration faculty.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 301</td>
<td>Advanced Study in Voice</td>
<td>3</td>
</tr>
<tr>
<td>THR 310</td>
<td>Acting II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or permission of Director</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>THR 320</td>
<td>Performance Studio</td>
<td></td>
</tr>
<tr>
<td>THR 321</td>
<td>Acting Shakespeare</td>
<td></td>
</tr>
<tr>
<td>THR 340</td>
<td>Advanced Studies in Directing</td>
<td></td>
</tr>
<tr>
<td>THR 410</td>
<td>Acting for the Camera</td>
<td></td>
</tr>
<tr>
<td>THR 420</td>
<td>Advanced Performance Studio</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or permission of Director</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>THR 304</td>
<td>Advanced Movement for Actors</td>
<td></td>
</tr>
<tr>
<td>THR 305</td>
<td>Unarmed Stage Combat</td>
<td></td>
</tr>
<tr>
<td>THR 365</td>
<td>Characterization</td>
<td></td>
</tr>
<tr>
<td>THR 405</td>
<td>Advanced Stage Combat</td>
<td></td>
</tr>
<tr>
<td>THR 421</td>
<td>One-Person Show</td>
<td></td>
</tr>
<tr>
<td>THR 423</td>
<td>Audition Techniques: Stage and Camera</td>
<td></td>
</tr>
<tr>
<td>THR 427</td>
<td>Musical Theater Workshop</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or permission of Director</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Upper-Level Theater Electives</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>12 credits of 300-400 level THR coursework</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>24</td>
</tr>
</tbody>
</table>

Concentration in Theater Education for Theater Arts PK-12 (THEA)
Designed for students interested in pursuing theater education. In addition to transcript review and the submission of an essay detailing goals for the concentration, students must:
- Have earned 45 to 60 credits.
- Submit scores for the Praxis Core (Reading, Writing, and Mathematics) tests to the committee. (It is strongly recommended that students take the Praxis Core tests as soon as ENGH 302
Advanced Composition (Mason Core) (p. 142), a course in literature, and a course in mathematics have been completed.)

- Maintain an overall GPA of 2.80 in all course work completed at Mason and in course work at all institutions of higher learning combined.
- Earn no grade lower than a C in theater and professional education courses needed for graduation.

Upon fulfilling THR 448 Foundations of Theater Education, THR 449 Elementary Theater Education, THR 450 Secondary Theater Education, EDRD 300 Literacy and Curriculum Integration, EDUC 301 Educating Diverse and Exceptional Learners, and EDUC 302 Human Growth and Development students must complete 15 weeks of a full-time student teaching internship (THR 455 Theater Education Internship). Applications for placement, subject to approval of the unit, are submitted to the Field Placement Specialist in the College of Education and Human Development at the beginning of the previous semester. In addition, students must pass the VCLA before student teaching.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 448</td>
<td>Foundations of Theater Education</td>
<td>3</td>
</tr>
<tr>
<td>THR 449</td>
<td>Elementary Theater Education</td>
<td>3</td>
</tr>
<tr>
<td>THR 450</td>
<td>Secondary Theater Education</td>
<td>3</td>
</tr>
<tr>
<td>EDRD 300</td>
<td>Literacy and Curriculum Integration</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 301</td>
<td>Educating Diverse and Exceptional Learners</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 302</td>
<td>Human Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>Six credits of</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>THR 455</td>
<td>Theater Education Internship</td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

**Concentration in Theater Studies (THST)**

Designed for the Theater generalist or the writer specializing in playwriting, screenwriting, production dramaturgy, season planning, theater criticism, and translation/adaptation for the stage. The Concentration in Theater Studies requires each student to work with a faculty adviser to craft an individualized course of study that challenges their development conceptually and creatively for a total of 24 credits of upper-division (300-400 level) THR courses.

**General Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA students must use general electives for one of the following. After fulfilling one of these options, the remaining general electives may be taken inside or outside of the department. All students are required to take a minimum of 45 credits of upper-division courses (300-400 level).</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Demonstrate intermediate-level proficiency in one foreign language (0-9 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete a minor (15-21 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete a double major outside their primary field of study (15-21 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete a double degree outside their primary field of study (15-21 credits)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Honors**

**Honors in the Major**

Highly-qualified students who have completed 75 credits may pursue advanced work leading to graduation with honors in the major. Students apply for Honors in Theater by submitting to the Director (by November 15 or April 15) a two-page written statement outlining their reasons for pursuing advanced coursework and specific professional goals, along with the names of two Mason theater faculty members who have agreed to serve as references.

Students satisfy the honors course sequence by taking three honors-specific courses from their chosen concentration. They must also maintain an overall GPA of 3.50 and a GPA of 3.75 within the major.

**Accelerated Master’s**

**Theater, BA/Arts Management, Accelerated MA**

**Overview**

Undergraduates in Theater may apply to the accelerated master’s degree in Arts Management. If accepted, students will be able to earn a BA in Theater (p. 882) and an MA in Arts Management (p. 813) after satisfactory completion of 150 credits.

Students choosing the accelerated option must fulfill all university requirements for the master’s degree. The regular designed timeframe would be a start in the Fall and the completion in the Summer five years later, but longer time frames may also be available.

See AP.6.7 Bachelor’s/Accelerated Master’s Degree (p. 93) for policies related to this program. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits at Mason) and no more than 90 credits. Applicants should submit an Accelerated Master’s Program Application, available from the College of Visual and Performing Arts (CVPA) Graduate Studies. It includes the proposed conferral date for the undergraduate degree and the two graduate courses that are to be applied to the undergraduate degree.

Interested students should contact the Arts Management Program Office for more details about the application process.

**Accelerated Option Requirements**

As an undergraduate, the accelerated master’s student is to complete the two graduate courses indicated on their Accelerated Master’s Program application with a minimum grade of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. On completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form (which shall incorporate all of the Graduate Admission requirements of the university) and are admitted to graduate status.
As graduate students, accelerated master's students have an advanced standing. They must meet all master's degree requirements except for the two courses (6 credits) they completed as undergraduates. The Internal Internship (AMGT 740 Internal Internship) will be within Theater at Mason (generally with the School of Theater). Students will begin their master's program in the semester immediately following conferral of the undergraduate degree, and they may also begin in the summer term.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with permission of the School of Theater. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation and must be approved by the Dean's Office.

To apply these credits to the master's degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master's Transition Form.

Theater, BFA

Banner Code: AR-BFA-THR

Sara Simanski, Academic Advisor
A407 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-6079
Email: ssimansk@gmu.edu
Website: https://theater.gmu.edu/academics/theater-programs

Admissions & Policies

Policies

Program Requirements
In addition to the Mason Core (p. 142) requirements, Theater majors must complete a minimum of 76 credits in the major: 46 credits of required Theater core courses plus 30 credits in the selected concentration. Concentrations are: Design for Stage and Screen, Musical Theater Performance, Performance for Stage and Screen (Acting and Directing).

Requirements

Degree Requirements
Total credits: 120

Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation Requirements</td>
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</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGH 101 Composition (Mason Core)</td>
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<tr>
<td></td>
<td>ENGH 302 Advanced Composition</td>
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</table>

Core Requirements

<table>
<thead>
<tr>
<th>Literature (p. 147)</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 37

1 Nonnative speakers of English with limited proficiency in the language may substitute ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) for ENGH 101 Composition (Mason Core) (p. 142). Students must attain a minimum grade of C in ENGH 100 Composition for Multilingual Writers (Mason Core) (p. 142) or ENGH 101 Composition (Mason Core) (p. 142), as well as in ENGH 302 Advanced Composition (Mason Core) (p. 142), to fulfill degree requirements.

2 Outside the major. Students earning a concentration in Musical Theater Performance must take DANC 125 Modern/Contemporary Dance I (Mason Core) (p. 142), DANC 131 Beginning Jazz Technique (Mason Core) (p. 142), DANC 145 Ballet I (Mason Core) (p. 142), DANC 161 Beginning Tap Dance (Mason Core) (p. 142), DANC 225 Modern/Contemporary Dance II (Mason Core) (p. 142), DANC 231 Intermediate Jazz Technique (Mason Core) (p. 142), DANC 245 Ballet II (Mason Core) (p. 142), or DANC 331 Advanced Jazz Dance (Mason Core) (p. 142).

3 Including one laboratory science

Mason Core

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 150 Greeks to Restoration (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>THR 151 Romanticism to Present (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>THR 191 Theater Support/Engagement</td>
<td>0</td>
</tr>
<tr>
<td>THR 196 Performance or Design Practicum</td>
<td>1</td>
</tr>
<tr>
<td>THR 197 Stage or Literary Practicum</td>
<td>1</td>
</tr>
<tr>
<td>THR 198 Theatrical Construction Practicum</td>
<td>1</td>
</tr>
<tr>
<td>THR 199 Production Run Crew Practicum</td>
<td>1</td>
</tr>
<tr>
<td>THR 201 Stage Management</td>
<td>3</td>
</tr>
<tr>
<td>THR 210 Acting I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>THR 230 Fundamentals of Production (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>THR 300 Voice and Speech</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following:

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 303 Movement for Actors</td>
<td></td>
</tr>
<tr>
<td>THR 304 Advanced Movement for Actors</td>
<td></td>
</tr>
<tr>
<td>THR 305 Unarmed Stage Combat</td>
<td></td>
</tr>
<tr>
<td>THR 329 Directing</td>
<td>3</td>
</tr>
<tr>
<td>THR 350 Script Analysis</td>
<td>3</td>
</tr>
<tr>
<td>THR 411 Great Film Directors (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
Theater BFA Concentrations

Theater majors earning a BFA in Theater must select one of the following concentrations:

- Design for Stage and Screen Concentration (DSS) (p. 886)
- Musical Theater Performance Concentration (MTPF) (p. 886)
- Performance for Stage and Screen (Acting and Directing) Concentration (PSS) (p. 887)

**Design for Stage and Screen Concentration (DSS)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 339</td>
<td>Principles of Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select 9 courses from the following:</td>
<td>27</td>
</tr>
<tr>
<td>THR 313</td>
<td>Event Technical Production</td>
<td></td>
</tr>
<tr>
<td>THR 314</td>
<td>Lighting Stagecraft</td>
<td></td>
</tr>
<tr>
<td>THR 315</td>
<td>Sound Engineering</td>
<td></td>
</tr>
<tr>
<td>THR 330</td>
<td>Seminar in Technical Theater</td>
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</tr>
</tbody>
</table>

**Musical Theater Performance Concentration (MTPF)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSI 113</td>
<td>Aural Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 114</td>
<td>Aural Skills II</td>
<td>1-2</td>
</tr>
<tr>
<td>MUSI 115</td>
<td>Introduction to Music Theory</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 171</td>
<td>Keyboard Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 172</td>
<td>Keyboard Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 223</td>
<td>Applied Music in Voice</td>
<td>8</td>
</tr>
<tr>
<td>or MUSI 243</td>
<td>Applied Music in Voice (must be taken for a total of 8 credits)</td>
<td>8</td>
</tr>
</tbody>
</table>

Select one course from:

- DANC 331 Advanced Jazz Dance (Mason Core) (p. 142) (200 level prerequisite must be met)
- THR 304 Advanced Movement for Actors
- THR 305 Unarmed Stage Combat
- THR 405 Advanced Stage Combat

or permission of Director

Total Credits 46
The School of Music offers placement tests in Theory, Sight Singing, Ear Training and Keyboard Skills for students with an exceptional level of competency or prior academic experience in these areas. Placement tests are optional. However, students must pass the specific placement tests in order to receive “credit-by-examination” to be applied for credit to the concentration. These exams are only available the semester you begin coursework at Mason and cannot be scheduled for a later time. Opportunities to take the placement exams and additional exam details are posted on the School of Music website: music.gmu.edu (https://music.gmu.edu)

Performance for Stage and Screen (Acting and Directing) Concentration (PSS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 301</td>
<td>Advanced Study in Voice</td>
<td>3</td>
</tr>
<tr>
<td>THR 310</td>
<td>Acting II</td>
<td>3</td>
</tr>
<tr>
<td>THR 365</td>
<td>Characterization</td>
<td>3</td>
</tr>
<tr>
<td>or THR 421</td>
<td>One-Person Show</td>
<td></td>
</tr>
<tr>
<td>THR 410</td>
<td>Acting for the Camera</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 4 courses from the following: 12

- THR 320 Performance Studio
- THR 321 Acting Shakespeare
- THR 340 Advanced Studies in Directing
- THR 342 Makeup Design
- THR 420 Advanced Performance Studio
- THR 490 Special Topics in Theater
- THR 491 Seminar on the Profession
- THR 494 Field Experience
  or permission of Director

Select 2 courses from the following: 6

- THR 304 Advanced Movement for Actors
- THR 305 Unarmed Stage Combat
- THR 306 Movement in Musical Theater
- THR 405 Advanced Stage Combat
- THR 423 Audition Techniques: Stage and Camera
- THR 427 Musical Theater Workshop
  or permission of Director

Total Credits 30

After fulfilling degree requirements, BFA students may use remaining general electives credits inside or outside of the department. All students are required to take a minimum of 45 credits of upper-division courses (300-400 level).

Honors

Honors in the Major

Highly-qualified students who have completed 75 credits may pursue advanced work leading to graduation with honors in the major. Students apply for Honors in Theater by submitting to the Director by November 15 or April 15 a two-page written statement outlining their reasons for pursuing advanced coursework and specific professional goals, along with the names of two Mason theater faculty members who have agreed to serve as references.

Students satisfy the honors course sequence by taking three honors-specific courses from their chosen concentration. They must also maintain an overall GPA of 3.50 and a GPA of 3.75 within the major.

Theater Minor

Banner Code: THR

Sara Simanski, Academic Advisor
A407 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-6079
Email: ssimanski@gmu.edu
Website: https://theater.gmu.edu/academics/theater-programs

Admissions & Policies

Policies

University policy states that students must earn 8 distinct credits that are not used for their major toward the minor, with a minimum grade of 2.00 earned in all courses applied to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 230</td>
<td>Fundamentals of Production (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>THR 310</td>
<td>Acting II</td>
<td>3</td>
</tr>
<tr>
<td>or THR 339</td>
<td>Principles of Design</td>
<td></td>
</tr>
<tr>
<td>THR 350</td>
<td>Script Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following: 3

General Electives

BFA students pursuing a concentration in Musical Theater Performance must use 7 credits of general electives to complete:

- MUSI 381 University Chorale (Mason Core) (p. 142) 1
- THR 306 Movement in Musical Theater
- THR 428 Musical Theater Ensemble
  or THR 495 Senior Capstone Project
  or THR 494 Field Experience

Total Credits 7

Honors in the Major

Highly-qualified students who have completed 75 credits may pursue advanced work leading to graduation with honors in the major. Students apply for Honors in Theater by submitting to the Director by November 15 or April 15 a two-page written statement outlining their reasons for pursuing advanced coursework and specific professional goals, along with the names of two Mason theater faculty members who have agreed to serve as references.

Students satisfy the honors course sequence by taking three honors-specific courses from their chosen concentration. They must also maintain an overall GPA of 3.50 and a GPA of 3.75 within the major.

Theater Minor

Banner Code: THR

Sara Simanski, Academic Advisor
A407 deLaski Performing Arts Building
Fairfax Campus
Phone: 703-993-6079
Email: ssimanski@gmu.edu
Website: https://theater.gmu.edu/academics/theater-programs

Admissions & Policies

Policies

University policy states that students must earn 8 distinct credits that are not used for their major toward the minor, with a minimum grade of 2.00 earned in all courses applied to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 230</td>
<td>Fundamentals of Production (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>THR 310</td>
<td>Acting II</td>
<td>3</td>
</tr>
<tr>
<td>or THR 339</td>
<td>Principles of Design</td>
<td></td>
</tr>
<tr>
<td>THR 350</td>
<td>Script Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following: 3
Theater Performance Minor

Banner Code: THP

Admissions & Policies

University policy states that students must earn 8 distinct credits that are not used for their major toward their minor, with a minimum grade of 2.00 earned in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Minor Requirements

Total credits: 18

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 210</td>
<td>Acting I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>THR 300</td>
<td>Voice and Speech</td>
<td>3</td>
</tr>
<tr>
<td>THR 310</td>
<td>Acting II</td>
<td>3</td>
</tr>
<tr>
<td>THR 350</td>
<td>Script Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Select six credits from the following:</td>
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<tr>
<td>THR 301</td>
<td>Advanced Study in Voice</td>
<td></td>
</tr>
<tr>
<td>THR 303</td>
<td>Movement for Actors</td>
<td></td>
</tr>
<tr>
<td>THR 304</td>
<td>Advanced Movement for Actors</td>
<td></td>
</tr>
<tr>
<td>THR 305</td>
<td>Unarmed Stage Combat</td>
<td></td>
</tr>
<tr>
<td>THR 320</td>
<td>Performance Studio</td>
<td></td>
</tr>
<tr>
<td>THR 321</td>
<td>Acting Shakespeare</td>
<td></td>
</tr>
<tr>
<td>THR 329</td>
<td>Directing</td>
<td></td>
</tr>
<tr>
<td>THR 410</td>
<td>Acting for the Camera</td>
<td></td>
</tr>
<tr>
<td>THR 420</td>
<td>Advanced Performance Studio</td>
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</tr>
<tr>
<td>THR 423</td>
<td>Audition Techniques: Stage and Camera</td>
<td></td>
</tr>
<tr>
<td>THR 427</td>
<td>Musical Theater Workshop</td>
<td></td>
</tr>
<tr>
<td>or other courses with permission of Director</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

School of Business

Enterprise Hall

Phone: 703-993-1880

Website: business.gmu.edu

Administration

- Maury Peiperl, Dean
- Anne Magro, Senior Associate Dean, Strategy and Impact
- Cheryl Druhl, Associate Dean, Faculty
- Richard Klimoski, Associate Dean, Research
- Paige Wolf, Associate Dean, Graduate Programs
- Patrick Soleymani, Associate Dean, Undergraduate Programs
- Diane Vermaaten, Executive Director, Finance and Administration

College Code: BU

The mission of the School of Business is to prepare a diverse student body to succeed in a global business environment. Through the faculty’s creation and dissemination of business knowledge, practice, and pedagogy, we enable our students to develop analytical and communication skills and to practice ethical business behavior.

Business leaders and organizations are actively involved with the School of Business through executive education programs, speaker engagements, classroom lectures, case competitions, internships, and career placement. The School of Business also maintains close connections to the business community through its advisory board and advisory councils to academic programs. 220 business leaders representing 168 different companies serve as advisory board (including Friends of the Alumni Chapter Board) or council members.

The School of Business enrolls more than 4,000 undergraduate students and more than 550 graduate students in its programs.

The School of Business’s programs offer students a variety of opportunities to enhance their professional endeavors.

- Our innovative curriculum meets the demands of the marketplace, focused on business fundamentals, strategic thinking and teamwork.
- Our distinguished faculty are cross-disciplinary collaborators and innovative practitioners that are passionate about education. They bring both theoretical and applied expertise to the classroom.
- Our outstanding career management professionals are dedicated to providing tailored support to promote our students’ professional advancement and leverage their degree over the short- and long-term.
- Our diverse student population offers unique opportunities to network and learn from your fellow classmates. Students at Mason represent over 130 different countries and all 50 states.

Undergraduate

The programs in business education culminate in a BS degree with a concentration in one of five areas: accounting, finance, information systems and operations management, management, or marketing.

Graduate

The School of Business offers an MBA, Executive MBA in National Security, and MS degrees in Accounting, Management, Real Estate Development, Technology Management, and Management of Secure Information Systems.

Highly-qualified Mason Accounting majors may apply to the accelerated master’s degree program and obtain both Accounting, BS (p. 891) and Accounting, MS (p. 897) degrees after satisfactory completion of a total of 144 credits.
Graduate certificates are offered in Business Analytics, Business Fundamentals, Accounting Analytics, Government Accounting, Forensic Accounting, IT Strategy and Digital Transformation, Chief Information Officer, and Global IT Leadership.

For policies governing all accelerated degree programs, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Centers
The School of Business houses four centers. The Center for Innovation and Entrepreneurship provides experiential learning through academic programs as well as hands-on programs for Mason students interested in innovation, invention, early stage startups, and entrepreneurship. The Center for Real Estate Entrepreneurship focuses on real estate research and education in real estate development and finance. The Investor Protection & Corporate Fraud Research Center strives to provide thought leadership on investor protection and fraud risk by sponsoring, conducting, and disseminating research in these areas. The Center for Infrastructure Protection & Homeland Security conducts research, develops projects, and provides expert analysis and insight into policy across a variety of infrastructure sectors and related fields, including energy, transportation, cyber-security, defense and finance. The Center for Government Contracting has established the first-in-the-nation university center to address business, policy, regulatory and other issues in government contracting.

Faculty

Accounting
Aier, Broshars, L. Chen, Conaway, Douthett, Faughnan, Hasan, Hylton, Ingram, Johnson, Kim, Kitching, Koutney, Magro, Nykyforoych, Pawlewicz, Roberts, Roman, Snyder, Sweeney, Visvanathan, Wentland, Wiesen

Business Foundations
Austin, Brown, D’Antonio, Demory, Gring-Pemble, Harris, Hendricks, K. King, Landoll, Lauer, Mink, Moteabbed-Tabarraei, Mungai, Perilla, Pierce, Viccara, Yuckenberg, Zylstra

Finance
Aldatmaz, Anderson, Christophe, Gallay, Hanweck, Horstmeyer, Hsieh, S. Lee, J. Li, Philipp, Pilloff, Requeijo, Sanders

Information Systems and Operations Management
Abdelfattah, Bellos, Cheema, M. Chen, Das, Deans, Druelh, Dutta, Garcia, Jung, M. King, X. Li, Mehta, Menon, Porter, Ren, Sanyal, Singer, Yang, Yao, Ye

Management
Cronin, de Janas, Grady, Joshi, Klimoski, Langfred, C. Lee, H. Lee, Mainkar, Miller, O’Neill, Parker, Peiperl, Rockmann, Rosenbusch, Theeke, Wittman, Wolfe, Yasai

Marketing
Cheng, Harvey, Hopner, Joiner, Josephson, Kulick, Meamber, Mishra, Tretola, Vadakkepatt

Requirements & Policies

Policies

Academic Policies
Students should become familiar with the university’s general academic policies (p. 77) in addition to those specific to each academic unit.

E-mail
George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school/department/program and other administrative units, and check it regularly for important information.

Study Elsewhere Policy
A student who has matriculated at Mason may transfer a limited number of hours (9 for undergraduates, 6 for graduates) of coursework in School of Business disciplines from another institution (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education). Students are permitted to take courses elsewhere under unusual circumstances—these circumstances do not include scheduling or commuting convenience, or financial (lower cost) reasons.

Special instructions for School of Business students: courses that are attempted at a two-year institution may not be used to fulfill upper-level requirements. Any course that a student wished to transfer to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

For additional information, see AP1.4.2 Permission to Study Elsewhere (p. 79).

Undergraduate Internship Policy
The School of Business recognizes the importance of experiential education in both learning to apply theory to practice and positioning students for success in their careers. Because the School of Business is committed to supporting students’ professional success, the School requires that all student internships for credit be registered with the School of Business as one of the following: ACCT 492, BUS 492, FNAN 492 (https://catalog.gmu.edu/search/?scontext=courses&search=FNAN+492) , MGMT 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MGMT+492), MIS 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MIS+492), MKTG 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MKTG+492), OSCM 492 or OM 492 (https://catalog.gmu.edu/search/?scontext=courses&search=OM+492). Students may enroll in a maximum of 6 credits for these courses. For students in catalog years Fall 2016 and beyond, one internship course may apply to the major, and a second internship course would apply as elective credit. For students in catalog years prior to Fall 2016, a maximum of 6 credits of internship may apply to general electives.

Termination from the Major
A grade of C or higher is required in each of the School of Business listed core courses. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment...

Once a student has attempted a School of Business Core or Accounting major course twice unsuccessfully, they must meet with an academic advisor in order to receive an override to register for the third attempt. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare the business minor only, and are not able to declare any other School of Business minors. Student are limited to three attempts at ACCT 330. Any student who is unable to achieve a C or higher in ACCT 330 on the third attempt will not be able to pursue a Major in Accounting or Finance. For more information about this, see AP 5.2.4 Termination from the Major (p. 88).

University Consortium
Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstance. All consortium registration requests must be submitted to the dean's office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Any consortium course that a student wishes to register for to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Non-Business School Student Credit Limitation
Enrolled undergraduate students who are not declared in a School of Business major are limited to 9 credits of upper-level business coursework within the School of Business. This policy applies to any student who is declared in another major or program at Mason. This policy does not apply to students who have declared a School of Business minor and are earning required credit toward that minor.

Undergraduate Course Overload Policy
The School of Business recommends that undergraduate students attempt no more than 18 credits in an academic semester and no more than 14 credits in a summer term. Students wishing to attempt more than 18 credits must submit a Permission to Overload form to their academic advisor.

To be eligible for a course overload, a student must fulfill all of the following criteria:
- At least a 3.0 cumulative GPA at Mason
- Have completed all courses successfully in his/her previous semester with no Fs or incompletes (IN)
- Complete the Permission to Overload form and obtain an academic advisor's signature

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

Transfer Credit Expiration Policy
Transfer credit is not awarded for any business (management, marketing, finance, accounting, management information systems, operations management, foundations, core, or any other School of Business course), courses completed more than ten years prior to Mason enrollment. This includes any older courses completed at RBC or the VCCS.

Appeals Process
The School of Business strives to maintain policies and procedures that are consistent with those of the University, as well as in the best interest of our students. If you have any questions concerning a particular policy or procedure, contact the Office of Student Success & Academic Services, Room 008 of Enterprise Hall (703-993-1880) or visit the website (http://business.gmu.edu).

Courses Excluded from any School of Business BS Degree
Transfer credit is not awarded for any School of Business courses completed more than ten years prior to Mason enrollment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 401</td>
<td>Internship Reflection</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 394</td>
<td>Ethnomusicology Internship</td>
<td>1-4</td>
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<tr>
<td>COMM 450</td>
<td>Internship in Communication</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 450</td>
<td>Internship in Film and Video Studies</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 480</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 496</td>
<td>Internship</td>
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<tr>
<td>CONF 370</td>
<td>Internship Field Experience</td>
<td>1-9</td>
</tr>
<tr>
<td>PHIL 306</td>
<td>Philosophy Internship</td>
<td>3</td>
</tr>
<tr>
<td>RELI 426</td>
<td>Religious Studies Internship</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 393</td>
<td>Art History Internships</td>
<td>3-6</td>
</tr>
<tr>
<td>GCH 498</td>
<td>Global and Community Health Internship</td>
<td>3,6</td>
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<td>GAME 491</td>
<td>Internship</td>
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<td>HAP 498</td>
<td>Health Administration Internship (Mason Core)</td>
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</tr>
<tr>
<td>HDFS 499</td>
<td>Advanced Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
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<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td>1-3</td>
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<tr>
<td>ENGH 459</td>
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<td>MUSI 395</td>
<td>Teaching Internship</td>
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<td>INTS 390</td>
<td>International Internship</td>
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<td>ECON 498</td>
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<tr>
<td>ASTR 409</td>
<td>Astronomy Internship</td>
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<tr>
<td>SPMT 490</td>
<td>Internship (Mason Core) (p. 142)</td>
<td>12</td>
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<tr>
<td>TOUR 490</td>
<td>Hospitality, Tourism, and Events Management Internship (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
<td>3</td>
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<tr>
<td>CHIN 490</td>
<td>Internship in Chinese Studies</td>
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<td>Kinesiology Internship III (Mason Core) (p. 142)</td>
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<td>HHS 480</td>
<td>Research Internship in Health and Human Services</td>
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<td>MUSI 495</td>
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<td>FRSC 406</td>
<td>Forensic Internship</td>
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</tbody>
</table>

- Executive MBA
- Finance Minor
- Finance, BS
- Forensic Accounting Graduate Certificate
- Global IT Leadership Graduate Certificate (pending SCHEV approval)
- Government Accounting Graduate Certificate
- Government Contracting Minor
- IT Strategy and Digital Transformation Graduate Certificate (pending SCHEV approval)
- Information Systems and Operations Management, BS
- International Business Minor
- Management of Secure Information Systems, MS (School of Business)
- Management, BS
- Management, MS
- Marketing Minor
- Marketing, BS
- Real Estate Development, MS
- Technology Management, MS

### Accounting, BS

**Banner Code:** BU-BS-ACCT

#### Academic Advising

Phone: 703-993-1880
Email: masonbus@gmu.edu

#### Administration

- JK Aier, Chair, Accounting Area and Director, Investor Protection & Corporate Fraud Research Center

The Bachelor of Science in Accounting prepares students for professional careers in the private and public sectors. The accounting major is designed to produce accounting professionals who can both generate and apply financial information to solve business problems. Our students learn principles of business and accounting as well as the specific skills and specialized technical knowledge necessary for success in the dynamic field of accounting. Our program emphasizes ethics, critical thinking, written and verbal communication, and effective use and understanding of technology. Our graduates are employed by the assurance, tax advisory, and consulting groups of the top accounting firms as well as Fortune 100 companies. Our proximity to the nation’s capital provides unique opportunities for our graduates to work in government and in the federal practices of public accounting firms. The accounting degree program is separately accredited by AACSB International.

Students interested in CPA certification can apply to the Master of Science in Accounting (p. 897) degree to meet the 150 hour requirement for CPA certification in most states. The MSA (p. 897) allows students to meet the 150 hour requirement for CPA certification in most states in only nine months.

### Programs

- Accounting Analytics Graduate Certificate (pending SCHEV approval)
- Accounting Undergraduate Certificate
- Accounting, BS
- Accounting, MS
- Business Administration, MBA
- Business Analytics Graduate Certificate
- Business Analytics Minor
- Business Fundamentals Graduate Certificate (pending SCHEV approval)
- Business Minor
- Business, BS
- Chief Information Officer Graduate Certificate
- Entrepreneurship Minor
Admissions & Policies

Policies

Academic Policies

Students should become familiar with the university's general academic policies (p. 77) in addition to those specific to each academic unit.

E-mail

George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school/department/program and other administrative units, and check it regularly for important information.

Study Elsewhere Policy

A student who has matriculated at Mason may transfer a limited number of hours (9 for undergraduates, 6 for graduates) of coursework in School of Business disciplines from another institution (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education). Students are permitted to take courses elsewhere under unusual circumstances—these circumstances do not include scheduling or commuting convenience, or financial (lower cost) reasons.

Special instructions for School of Business students: courses that are attempted at a two-year institution may not be used to fulfill upper-level requirements. Any course that a student wished to transfer to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

For additional information, see AP1.4.2 Permission to Study Elsewhere (p. 79).

Undergraduate Internship Policy

The School of Business recognizes the importance of experiential education in both learning to apply theory to practice and positioning students for success in their careers. Because the School of Business is committed to supporting students' professional success, the School requires that all student internships for credit be registered with the School of Business as one of the following: ACCT 492, BUS 492, FNAN 492 (https://catalog.gmu.edu/search/?scontext=courses&search=FNAN+492), MGMT 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MGMT+492), MIS 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MIS+492), MKTG 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MKTG+492), OSCM 492 or OM 492 (https://catalog.gmu.edu/search/?scontext=courses&search=OM+492). Students may enroll in a maximum of 6 credits for these courses. For students in catalog years Fall 2016 and beyond, one internship course may apply to the major, and a second internship course would apply as elective credit. For students in catalog years prior to Fall 2016, a maximum of 6 credits of internship may apply to general electives.

Termination from the Major

A grade of C or higher is required in each of the School of Business listed core courses. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 330 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment of Business, BUS 303 Develop Professional Skills II: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing OM 303 Operations Management and OSCM 303 Operations Management. Once a student has attempted a School of Business Core or Accounting major course twice unsuccessfully, they must meet with an academic advisor in order to receive an override to register for the third attempt. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare the business minor only, and are not able to declare any other School of Business minors. Student are limited to three attempts at ACCT 330. Any student who is unable to achieve a C or higher in ACCT 330 on the third attempt will not be able to pursue a Major in Accounting or Finance. For more information about this, see AP5.2.4 Termination from the Major (p. 88).

University Consortium

Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstance. All consortium registration requests must be submitted to the dean's office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Any consortium course that a student wishes to register for to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Non-Business School Student Credit Limitation

Enrolled undergraduate students who are not declared in a School of Business major are limited to 9 credits of upper-level business coursework within the School of Business. This policy applies to any student who is declared in another major or program at Mason. This policy does not apply to students who have declared a School of Business minor and are earning required credit toward that minor.

Undergraduate Course Overload Policy

The School of Business recommends that undergraduate students attempt no more than 18 credits in an academic semester and no more than 14 credits in a summer term. Students wishing to attempt more than 18 credits must submit a Permission to Overload form to their academic advisor.

To be eligible for a course overload, a student must fulfill all of the following criteria:

- At least a 3.0 cumulative GPA at Mason
- Have completed all courses successfully in his/her previous semester with no Fs or incompletes (IN)
- Complete the Permission to Overload form and obtain an academic advisor's signature

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.
If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

**Transfer Credit Expiration Policy**

Transfer credit is not awarded for any business (management, marketing, finance, accounting, management information systems, operations management, foundations, core, or any other School of Business course), courses completed more than ten years prior to Mason enrollment. This includes any older courses completed at RBC or the VCCS.

**Appeals Process**

The School of Business strives to maintain policies and procedures that are consistent with those of the University, as well as in the best interest of our students. If you have any questions concerning a particular policy or procedure, contact the Office of Student Success & Academic Services, Room 008 of Enterprise Hall (703-993-1880) or visit the website (http://business.gmu.edu).

**Courses Excluded from any School of Business BS Degree**

Transfer credit is not awarded for any School of Business courses completed more than ten years prior to Mason enrollment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>SWE 401</td>
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<td>MUSI 394</td>
<td>Ethnomusicology Internship</td>
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<td>COMM 450</td>
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<td>3</td>
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<td>FAVS 450</td>
<td>Internship in Film and Video Studies</td>
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<td>GOVT 480</td>
<td>Internship</td>
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<td>MUSI 496</td>
<td>Internship</td>
<td>2-6</td>
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<tr>
<td>CONF 370</td>
<td>Internship Field Experience</td>
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<td>PHIL 306</td>
<td>Philosophy Internship</td>
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<td>RELI 426</td>
<td>Religious Studies Internship</td>
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<tr>
<td>ARTH 393</td>
<td>Art History Internships</td>
<td>3-6</td>
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<td>GCH 498</td>
<td>Global and Community Health Internship</td>
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<td>GAME 491</td>
<td>Internship</td>
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<td>Health Administration Internship (Mason Core) (p. 142)</td>
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<td>Advanced Internship and Analysis in Human Development and Family Science</td>
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<td>ENGH 459</td>
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<td>MUSI 395</td>
<td>Teaching Internship</td>
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<td>ECON 498</td>
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<td>TOUR 490</td>
<td>Hospitality, Tourism, and Events Management Internship (Mason Core) (p. 142)</td>
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<td>CLIM 409</td>
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<td>CHIN 490</td>
<td>Internship in Chinese Studies</td>
<td>1-9</td>
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<td>CONS 498</td>
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<td>THR 455</td>
<td>Theater Education Internship</td>
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<td>AFAM 490</td>
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<td>KINE 490</td>
<td>Kinesiology Internship III (Mason Core) (p. 142)</td>
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<td>GGS 480</td>
<td>GGS Internship</td>
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<td>SPAN 490</td>
<td>Internship in Spanish</td>
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<td>AVT 489</td>
<td>Internship in Art and Visual Technology</td>
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<td>USST 490</td>
<td>Internship</td>
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<td>WMST 400</td>
<td>Internship in Women and Gender Studies</td>
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<td>CDS 491</td>
<td>Internship</td>
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<td>HHS 480</td>
<td>Research Internship in Health and Human Services</td>
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<td>RHBS 490</td>
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<td>Internship in Sociology I</td>
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<td>FRSC 406</td>
<td>Forensic Internship</td>
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</table>

**Requirements**

**Degree Requirements**

Total credits: 120

School of Business students pursuing a BS degree must complete a minimum of 120 credits, including the Mason Core requirements, business foundations, business core and major requirements. In addition, the following requirements must be met:

- A minimum of 45 credits at the 300- or 400-level.
- A minimum of 30 credits of School of Business core and major courses at Mason.
- At least 9 credits required for the specific major and BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142) taken at Mason.
A grade of C or higher earned in the business foundations, business core and major requirements.

Students should carefully examine prerequisites for School of Business courses. Students may be removed from a course if they enroll without having fulfilled the prerequisites.

Mason Core Requirements

Some Mason Core requirements may already be fulfilled by the major requirements listed below. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core requirements.

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<td>Arts (p. 144)</td>
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<td>Literature (p. 147)</td>
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<td></td>
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<td>Western Civilization/World History (p. 151)</td>
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</table>

¹ The School of Business natural science requirement must be fulfilled by completing two 4-credit laboratory sciences.
² School of Business students required to complete 8 credits of natural science by completing two 4-credit laboratory sciences.

Business Core

A grade of C or higher is required in each of the School of Business core courses listed below. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment of Business, BUS 303 Develop Professional Skills II: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing and OM 303 Operations Management (also OSCM 303 Operations Management). Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare a business minor. For more information about this, see AP.5.2.4 Termination from the Major (p. 88).

<table>
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<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
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<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements</td>
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<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
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<tr>
<td>MGMT 303</td>
<td>Principles of Management</td>
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<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142) (Satisfies Mason Core Information Technology requirement)</td>
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<td>Principles of Marketing</td>
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<td>OM 303</td>
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General Electives

General electives may be selected from any University or School of Business course, except courses designated for the Business minor (MBUS). Credits awarded as Associate Degree Elective Credit (ADEC) as part of a student's transfer evaluation are also excluded from general electives.

<table>
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<tr>
<th>Code</th>
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Major Requirements in Accounting

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Required Courses ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
ACCT 331 Financial Accounting II 3
ACCT 332 Financial Accounting III 3
ACCT 351 Taxation and Managerial Decision Making 3
ACCT 361 Accounting Analytics 3
ACCT 461 Assurance and Audit Services 3

**Electives**
Select one of the following electives: 

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 370</td>
<td>International Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 372</td>
<td>Financial Statement Analysis</td>
<td></td>
</tr>
<tr>
<td>ACCT 411</td>
<td>Advanced Managerial Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 433</td>
<td>Advanced Financial Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 451</td>
<td>Advanced Federal Taxation</td>
<td></td>
</tr>
<tr>
<td>ACCT 462</td>
<td>Honors Seminar in Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 472</td>
<td>Government and Not-for-Profit Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 491</td>
<td>Seminar in Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 492</td>
<td>Internship in Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 499</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>BULE 402</td>
<td>Commercial Law</td>
<td></td>
</tr>
<tr>
<td>ACCT 611</td>
<td>Advanced Issues in Managerial Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 630</td>
<td>Advanced Financial Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 633</td>
<td>Advanced Issues in Financial Reporting</td>
<td></td>
</tr>
<tr>
<td>ACCT 636</td>
<td>Fraud Examination</td>
<td></td>
</tr>
<tr>
<td>ACCT 651</td>
<td>Advanced Issues in Taxation</td>
<td></td>
</tr>
<tr>
<td>ACCT 672</td>
<td>Governmental and Nonprofit Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 690</td>
<td>Professional Accounting Colloquium</td>
<td></td>
</tr>
<tr>
<td>ACCT 696</td>
<td>Directed Studies in Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 697</td>
<td>Special Topics in Accounting</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 21

1 A grade of C or higher is required in each of the upper-level accounting major courses listed below. Students will not be permitted to make more than three attempts to achieve a C or higher in the following required Accounting courses: ACCT 311 Managerial and Cost Accounting, ACCT 331 Financial Accounting II, ACCT 332 Financial Accounting III, ACCT 351 Taxation and Managerial Decision Making, ACCT 361 Accounting Analytics, and ACCT 461 Assurance and Audit Services. Those who do not successfully complete these required courses within three attempts will not be eligible to receive a degree in Accounting from the School of Business. Students terminated from the BS Accounting program are prohibited from enrolling in any Accounting course.

2 Students who anticipate taking the CPA, CMA, CIA, or other professional exam should consult the applicable regulations and meet with their advisor. State regulations regarding professional examinations may dictate course selections.

3 Students in the MSAccel program and select high performing undergraduates may take graduate courses for undergraduate credit. Enrollment in a graduate level course is not guaranteed. Please contact an academic advisor for additional information.

**Capstone**
Students must successfully complete all Business Core courses to be eligible to enroll in BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142).

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**Advanced Accelerated Accounting Pathway**
The A++ program is designed for incoming freshman who have credit for MATH 108, ECON 103, and ENGH 101 prior to starting at Mason. This is an advanced pathway for high performing accounting majors interested in completing their Bachelor’s and Master’s in Accounting in four years. Students interested in this pathway should discuss requirements with a School of Business academic advisor.

**Second Majors in Accounting**
Students declaring a second major in Accounting must complete the 18 required courses for the major in addition to ACCT 330 Financial Accounting I.

**Second Major Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 330</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 311</td>
<td>Managerial and Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 331</td>
<td>Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 332</td>
<td>Financial Accounting III</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 351</td>
<td>Taxation and Managerial Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 361</td>
<td>Accounting Analytics</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 461</td>
<td>Assurance and Audit Services</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 21

---

**Honors in the Major**
The School of Business Accounting Honors Program provides highly motivated students majoring in accounting with an enriched academic experience integrating curricular, co-curricular and extra-curricular development. Admission to the Honors Program is by invitation only. Students who have been found responsible for an Honor Code violation are not eligible for the program.

**Admission Requirements**

- Minimum 3.0 cumulative GPA and 3.5 GPA in ACCT major.
- Must have a B or higher in each upper level accounting course.
- Two academic/professional references.
- Once admitted to the program, students with a cumulative GPA below 3.0 will be dropped from the program.

**Curricular Requirements**

- ACCT 330 Financial Accounting I with an A- or better.
Honors students must graduate with a 3.0 cumulative GPA and 3.5 GPA in the major.

Co-Curricular Requirements
The student must complete ONE of the following in addition to the curriculum requirements:

- ACCT 462 Honors Seminar in Accounting or a 600-level ACCT course.
- Study abroad (e.g., Aachen Dual Degree, Oxford Honors, China, South America).
- Internship (ACCT 492 Internship in Accounting) Internships where no credit is earned also qualify.
- Significant work experience (e.g., an experience that is comparable to an internship).
- Research paper/Thesis as an independent study (ACCT 499 Independent Study) course. (e.g., faculty research, Mason undergraduate apprentice program, QEP).

Extra-Curricular Requirements
- Attendance at Honors Events, as determined by the Honors Program Director.
- The student must show a high degree of engagement in a School of Business student organization, preferably in a leadership role.

Requirements for Students to Obtain the Honors Designation
- Honors students must meet all curricular, co-curricular, and extracurricular requirements mentioned above at graduation.

Accelerated Master’s

Accounting, BS/Accounting, Accelerated MS
Overview
Highly-qualified Mason Accounting majors may apply to the accelerated master’s degree program and obtain both Accounting, BS (p. 891) and Accounting, MS (p. 897) degrees after satisfactory completion of a total of 144 credits. Graduates will be exceptionally well-prepared for professional school or a PhD program in accounting or a related discipline.

In the accelerated program, six credits of ACCT 600-level courses can be used to meet both bachelor’s and master’s degree requirements. These six credits will replace six credits of general electives in the student’s undergraduate program. Students in the Accelerated MSA program may take any 600-level courses while an undergraduate.

For policies governing all accelerated degree programs, see AP.6 Graduate Policies (p. 90).

On completion and conferral of the undergraduate degree in the semester indicated in the application, the student submits the Bachelor’s/Accelerated Master’s Transition Form and is admitted to graduate standing. As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program director. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

Accounting Undergraduate Certificate
Banner Code: BU-CERB-ACCT

Academic Advising
Phone: 703-993-1880
Email: masonbus@gmu.edu

This program provides an opportunity for nondegree-seeking students to earn the academic credit necessary to sit for the Uniform CPA Examination in Virginia.

This undergraduate certificate may be pursued on a part-time basis. Maintaining full-time status is not guaranteed. Students have four years to complete the certificate.

This certificate program qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure page. (https://irr2.gmu.edu/gedt/Accounting/Gedt.html)
Admissions & Policies

Admissions

The requirement for enrollment is a bachelor’s degree or higher from an accredited college or university.

Policies

Certificate Completion

Students are required to complete a minimum of 30 credits of accounting courses. At least 16 required credits must be taken at Mason after acceptance to the certificate program. Students have four years to complete certificate requirements. Students who are given permission to re-enroll following an absence from Mason may not count the four-year time limit as beginning on the date of re-enrollment.

Successful completion of the certificate program requires a grade of C or better in accounting courses and a GPA of at least 2.00 in all courses. Students are only permitted three attempts to pass each course with a C or better; following a third unsuccessful attempt the student will no longer be able pursue the certificate program.

Virginia Uniform CPA Examination

All students who wish to sit for the Uniform CPA Examination in Virginia are required to have completed 150 college-level credits, including at least 30 credits of accounting with courses in financial accounting, auditing, taxation, and management accounting; and at least 24 credits of non-accounting business courses.

Requirements

Certificate Requirements

Total credits: 30

This certificate may be pursued on a part-time basis only.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 203</td>
<td>Survey of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 330</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 311</td>
<td>Managerial and Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 331</td>
<td>Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 332</td>
<td>Financial Accounting III</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 351</td>
<td>Taxation and Managerial Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 361</td>
<td>Accounting Analytics</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 461</td>
<td>Assurance and Audit Services</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 24

Electives

Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 370</td>
<td>International Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 372</td>
<td>Financial Statement Analysis</td>
<td></td>
</tr>
<tr>
<td>ACCT 411</td>
<td>Advanced Managerial Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 433</td>
<td>Advanced Financial Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 451</td>
<td>Advanced Federal Taxation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

Notes

Students with a previous degree in business or accounting are advised to take School of Business courses (p. 888) above the 303 level to complete the 16 Mason credits needed after acceptance to the certificate program.

Students who have not previously studied business are advised to take the following recommended courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>BULE 402</td>
<td>Commercial Law</td>
<td>3</td>
</tr>
<tr>
<td>BUS 210</td>
<td>Business Analytics I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 310</td>
<td>Business Analytics II</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 341</td>
<td>Introduction to Firm Valuation</td>
<td>3</td>
</tr>
<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Accounting, MS

Banner Code: BU-MS-ACCT

Graduate Program Office

Phone: 703-993-8006
Email: sbusgrad@gmu.edu

Administration

- Robert Broshears, Director, MSA Program

The MSA is designed to meet the needs of new professionals entering the accounting profession. The program allows students to earn a state-of-the-art graduate degree in accounting. When combined with a Bachelor’s degree in Accounting, the MSA meets requirements to take the Uniform CPA Examination in Virginia and in most other states. The program integrates fundamental business skills and specialized knowledge and acumen required by the accounting profession. The MSA program is pursued as a face to face or an online option.

Admissions & Policies

Admissions

Admission and Eligibility Requirements

All students registering for School of Business graduate courses must have graduate standing. Nondegree student status is not available. To be eligible for our MS in Accounting (the full-time, part-time and accelerated accounting programs), you must have a bachelor’s degree in accounting
or equivalent from an accredited institution or have completed 27 college credits in accounting.

Applicants who have a business degree, but do not have an accounting degree or equivalent will be provisionally admitted until they have completed the following courses or equivalents with a grade of B- or better:

- ACCT 531 Foundations of Financial Reporting I
- ACCT 532 Foundations of Financial Reporting II
- ACCT 551 Foundations of Taxation of Business Entities
- ACCT 561 Foundations of Assurance Services

The prerequisites are currently only available in-person, not online. Online students with business degree backgrounds are eligible to take these prerequisite courses in-person if admitted provisionally to the MS in Accounting program.

Applicants who do not have an accounting degree or business degree will be provisionally admitted until they have completed the following courses or equivalents with a grade of B- or better:

- ACCT 330 Financial Accounting I
- ACCT 331 Financial Accounting II
- ACCT 332 Financial Accounting III
- ACCT 531 Foundations of Financial Reporting I
- ACCT 532 Foundations of Financial Reporting II
- ACCT 551 Foundations of Taxation of Business Entities
- ACCT 561 Foundations of Assurance Services

The prerequisites are currently only available in-person, not online. Online students with business degree backgrounds are eligible to take these prerequisite courses in-person if admitted provisionally to the MS in Accounting program.

International students with accounting degrees that lack a course in U.S. tax will be required to take ACCT 351 prior to matriculation.

Full admission requirements can be viewed at the school's website. (http://business.gmu.edu/masters-in-accounting/admissions/requirements)

**Policies**

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Degree Requirements**

Total credits: 30

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 633</td>
<td>Advanced Issues in Financial Reporting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 636</td>
<td>Fraud Examination</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 651</td>
<td>Advanced Issues in Taxation</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 690</td>
<td>Professional Accounting Colloquium</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 795</td>
<td>Global Accounting Environment</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

**Electives**

Select 15 credits of electives from any 600- or 700-level ACCT course (p. 1201)

Total Credits 15

1. Electives cannot duplicate coursework taken as an undergraduate

**Accelerated Master’s**

**Accounting, BS/Accounting, Accelerated MS**

**Overview**

Highly-qualified Mason Accounting majors may apply to the accelerated master’s degree program and obtain both Accounting, BS (p. 891) and Accounting, MS (p. 897) degrees after satisfactory completion of a total of 144 credits. Graduates will be exceptionally well-prepared for professional school or a PhD program in accounting or a related discipline.

In the accelerated program, six credits of ACCT 600-level courses can be used to meet both bachelor’s and master’s degree requirements. These six credits will replace six credits of general electives in the student’s undergraduate program. Students in the Accelerated MSA program may take any 600-level courses while an undergraduate.

For policies governing all accelerated degree programs, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

**Application Requirements**

Applicants to accelerated master’s programs must have completed at least 75 credits that apply to their undergraduate degree (with at least 24 credits earned at Mason).

Students submit an application online through the Office of Graduate Admissions.

Admission requirements are as follows:

1. A minimum GPA of 3.00 in at least three accounting courses (e.g. ACCT 330 Financial Accounting I, ACCT 331 Financial Accounting II and ACCT 332 Financial Accounting III) with no grade less than a B- in those accounting courses.

2. Review and approval by the MSA program director.

GMAT is not required.

Interested students should contact the MSA program office for more details about the application process.

1. Excluding ACCT 203 Survey of Accounting

**Accelerated Option Requirements**

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

On completion and conferral of the undergraduate degree in the semester indicated in the application, the student submits the Bachelor’s/ Accelerated Master’s Transition Form and is admitted to graduate
standing. As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program director. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form.

Business Administration, MBA

Banner Code: BU-MBA-BUAD

Graduate Program Office
Phone: 703-993-8006
Email: sbusgrad@gmu.edu

Administration
• Pallab Sanyal, Director, MBA Program

This degree prepares the next generation of world leaders through a rigorous, stimulating business and management curriculum based on a global perspective, industry demand and leadership.

The MBA core curriculum effectively integrates functional areas with the use of IT, oral and written communication, and teamwork. The MBA program requires 48 credits: 30 credits of core course, 3 credits of Global coursework and 15 credits of elective courses. The MBA program operates on an 8 week module structure and can be pursued either as a face to face or an online format.

JD/MBA Dual Degree Students can apply 15 credits of Law Elective coursework toward the MBA Elective degree requirement. See the Antonin Scalia Law School (http://www.law.gmu.edu/academics/degrees) for more details.

Admissions & Policies

Admissions

Admissions and Eligibility Requirements
• All students registering for School of Business graduate courses must have graduate standing. Non-degree student status is not available.
• An earned baccalaureate degree from a regionally-accredited institution of higher education, or international equivalent, verified from official transcripts.
• A minimum of two years of full-time, post-baccalaureate professional employment.
• One college-level calculus course prior to enrolling (recommended but not required).

Full admission requirements can be viewed are available on the program website (http://business.gmu.edu/mba-programs/admissions).

Policies

For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Requirements

Degree Requirements
Total credits: 48

Core Courses
Students enroll in 6 credits per module for a total of 24 credits a year.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 603</td>
<td>Managerial Economics and Decisions of the Firm</td>
<td>3</td>
</tr>
<tr>
<td>MBA 612</td>
<td>Managing Costs and Evaluating Performance</td>
<td>3</td>
</tr>
<tr>
<td>MBA 613</td>
<td>Financial Reporting and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>MBA 623</td>
<td>Marketing Management</td>
<td>3</td>
</tr>
<tr>
<td>MBA 633</td>
<td>Statistics for Business Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>MBA 638</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>MBA 643</td>
<td>Managerial Finance</td>
<td>3</td>
</tr>
<tr>
<td>MBA 653</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MBA 662</td>
<td>Management of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>MBA 678</td>
<td>Strategic Management</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Global Requirement
Students must take one of the following global courses: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 795</td>
<td>Global Business Perspectives 1</td>
<td>3</td>
</tr>
<tr>
<td>MBA 716</td>
<td>International Business Strategy</td>
<td></td>
</tr>
<tr>
<td>MBA 717</td>
<td>International Finance</td>
<td></td>
</tr>
<tr>
<td>MBA 718</td>
<td>International Marketing</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

1 Travel outside the United States is required. Most travel costs, excluding cost of airfare, are included in the MBA program tuition and fees.

Electives
Select 15 credits of market-driven electives (MBA 700-level) (p. 1901) 1, 2, 3, 4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

1 6 credit hours of electives may be taken outside the MBA Program or through the Consortium of Universities of the Washington Metropolitan Area with the permission of the program director.
2 JD/MBA Dual Degree Students can apply 15 credits of Law Elective coursework toward the MBA Elective degree requirement. See the Antonin Scalia Law School (http://www.law.gmu.edu/academics/degrees) for more details.
3 Must be taken after completion of the core courses.
4 Course options not used to fulfill the global requirement may be applied towards the electives requirement.

Business Analytics Graduate Certificate

Banner Code: BU-CERG-BUSA

Graduate Program Office
Phone: 703-993-8006
Email: sbusgrad@gmu.edu

Administration

Pallab Sanyal, Director, MBA Program

The Business Analytics Graduate Certificate will help analysts and professionals from diverse domains to effectively analyze data through the hands-on use of decision modeling and other techniques using popular software tools. The program covers a wide array of methodologies and techniques — from data collection, organization, reporting and mining to extraction of useful and actionable information for decision makers.

This certificate may be completed on a part-time or full-time basis.

Non-MBA students enroll in GBUS courses while MBA students enroll in MBA courses.

This certificate qualifies for Title IV Federal Financial Aid. For more information about program graduation rates, the median debt of students who completed the program, and other important information, please visit our disclosure page (https://irr2.gmu.edu/gedt/Business_Analytics/Gedt.html).

Admissions & Policies

Admissions

Eligibility Requirements
All students registering for School of Business graduate courses must have graduate standing. Non-degree student status is not available.

Full eligibility and admission requirements can be viewed on the program website (http://business.gmu.edu/mba-programs/analytics).

Policies
Students may use the credits completed as part of their graduate degree requirements in accordance with program requirements and AP6 Graduate Policies (p. 90). A maximum of 3 graduate credits taken at another institution can be transferred to the graduate certificate. The time limit for completion is four years from the date of admission to the graduate certificate. Students must have a minimum GPA of 3.00 to complete the certificate.

Requirements

Certificate Requirements
Total credits: 12

This certificate may be pursued on a full-or part-time basis.

Required Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 738</td>
<td>Data Mining for Business Analytics</td>
<td>3</td>
</tr>
<tr>
<td>or GBUS 738</td>
<td>Data Mining for Business Analytics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits
3

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 720</td>
<td>Marketing Analytics</td>
<td></td>
</tr>
<tr>
<td>or GBUS 720</td>
<td>Marketing Analytics</td>
<td></td>
</tr>
<tr>
<td>MBA 721</td>
<td>Marketing Research</td>
<td></td>
</tr>
<tr>
<td>or GBUS 721</td>
<td>Marketing Research</td>
<td></td>
</tr>
<tr>
<td>MBA 739</td>
<td>Advanced Data Mining for Business Analytics</td>
<td></td>
</tr>
<tr>
<td>or GBUS 739</td>
<td>Advanced Data Mining for Business Analytics</td>
<td></td>
</tr>
<tr>
<td>MBA 744</td>
<td>Fraud Examination</td>
<td></td>
</tr>
<tr>
<td>or GBUS 744</td>
<td>Fraud Examination</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits
9

Business Analytics Minor

Banner Code: ABUS

Academic Advising
Phone: 703-993-1880
Email: masonbus@gmu.edu

Administration

David Gallay, Director of Minor Programs

The amount of data flowing from, to, and through enterprises of all sorts is enormous, and growing rapidly—more rapidly than the capabilities of organizations to use it. Successful enterprises are those that make effective use of the abundance of data to which they have access: to make better predictions, better decisions, and form better strategies. Business analytics—which encompasses a variety of techniques to extract useful information from different sources of data—is being embraced at an increasing rate by organizations that need to gain actionable and forward-looking insight from their data. This minor in business analytics will provide students with the cutting-edge knowledge and skills they need to use and gather data to identify, understand, and deliver insights that internal and external clients find vital to organizational success.
At least eight credits of the minor courses must be unique to the Business Analytics Minor and not applied toward any other major, minor, or concentration. Students must achieve a grade of C or better in each course that is applied toward the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

#### Minor Requirements
Total credits: 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MIS 431</td>
<td>Data Mining for Business Applications</td>
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</table>

Total Credits: 3

#### Electives
Select four from the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 361</td>
<td>Accounting Analytics</td>
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</tr>
<tr>
<td>FNAN 430</td>
<td>Empirical Methods in Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 436</td>
<td>Probability Methods in Finance</td>
<td></td>
</tr>
<tr>
<td>MIS 302</td>
<td>Introduction to Programming for Business Applications</td>
<td></td>
</tr>
<tr>
<td>MIS 310</td>
<td>Database Management Systems</td>
<td></td>
</tr>
<tr>
<td>MIS 430</td>
<td>Data Warehousing</td>
<td></td>
</tr>
<tr>
<td>MIS 432</td>
<td>Advanced Data Mining</td>
<td></td>
</tr>
<tr>
<td>MKTG 351</td>
<td>Marketing Research</td>
<td></td>
</tr>
<tr>
<td>MKTG 352</td>
<td>Marketing Analytics for New Product Development</td>
<td></td>
</tr>
<tr>
<td>OM 352</td>
<td>Management Science</td>
<td></td>
</tr>
<tr>
<td>OM 452</td>
<td>Business Forecasting</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td></td>
</tr>
<tr>
<td>STAT 456</td>
<td>Applied Regression Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

### Business, BS

Banner Code: BU-BS-BUS

#### Academic Advising

Phone: 703-993-1880
Email: masonbus@gmu.edu

The School of Business is ranked in the top 10 percent of the nation's undergraduate business schools and offers a bachelor of science in business with innovative concentrations. The School of Business also offers several options for a minor for business and non-business majors, as well as an undergraduate certificate program in accounting. The School of Business programs are designed to prepare graduates for work in a rapidly changing and competitive marketplace with local, regional, and global companies. With Mason's location in Northern Virginia and proximity to Washington, D.C., combined with the assistance of the School of Business's own Career Services staff and Student Success and Academic Services staff, students are also afforded exceptional opportunities to gain practical experience and global engagement opportunities to complement their academic course work. Students admitted spring 2020 and later will graduate with a Bachelor of Science in Business degree.

### Admissions & Policies

#### Policies

**Academic Policies**

Students should become familiar with the university's general academic policies in addition to those specific to each academic unit.

**Email**

George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school, department, program, and other administrative units, and should check it regularly for important information.

**Study Elsewhere Policy**

A student who has matriculated at Mason may transfer a limited number of hours (9 for undergraduates, 6 for graduates) of coursework in School of Business disciplines from another institution (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education). Students are permitted to take courses elsewhere under unusual circumstances - these circumstances do not include scheduling or commuting convenience, or financial (lower cost) reasons.

Special instructions for School of Business students: courses that are attempted at a two-year institution may not be used to fulfill upper-level requirements. Any course that a student wished to transfer to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

For additional information, see AP.1.4.2 Permission to Study Elsewhere (p. 79).

**Undergraduate Internship Policy**

The School of Business recognizes the importance of experiential education in both learning to apply theory to practice and positioning students for success in their careers. Because the School of Business is committed to supporting students' professional success, the School requires that all student internships for credit be registered with the School of Business as either ACCT 492 Internship in Accounting, BUS 492 Internship in Business, FNAN 492 Internship in Finance, MGMT 492 Internship in Management, MIS 492 Internship in Management Information Systems, MKTG 492 Internship in Marketing, and OSCM 492 Internship in Operations and Supply Chain Management.

Students may enroll in a maximum of 6 credits for these courses. For students in catalog years Fall 2016 and beyond, one internship course may apply to the concentration, and a second internship course would apply as a general elective credit. For students in catalog years prior to
Fall 2016, a maximum of 6 credits of internship may apply to general electives.

**Termination Policy**

A grade of C or higher is required in each of the School of Business listed core courses. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making, BULE 303 Legal Environment of Business, BUS 303 Developmental Skills II: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing, and OSCM 303 Operations Management.

Once a student has attempted a School of Business Core or Accounting concentration course twice unsuccessfully, they must meet with an academic advisor in order to receive an override to register for the third attempt. Those who do not successfully complete these core courses within three attempts will be terminated from the School of Business and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students are limited to three attempts at ACCT 330. Any student who is unable to achieve a C or higher in ACCT 330 on the third attempt will not be able to pursue a concentration in Accounting or Finance.

Students terminated from the School of Business are permitted to declare the business minor only, and are not able to declare any other School of Business minors. For more information about this, see AP 5.2.4 Termination from the Major (p. 88). The School of Business Termination Policy is separate from the University Repeat Policy AP 1.3.4. (p. 77)

**University Consortium**

Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstance. All consortium registration requests must be submitted to the dean’s office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Any consortium course that a student wishes to register for to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

**Non-Business School Student Credit Limitation**

Enrolled undergraduate students who are not declared in the School of Business are limited to 9 credits of upper-level business coursework within the School of Business. This policy applies to any student who is declared in another major or program at Mason. This policy does not apply to students who have declared a School of Business minor and are earning required credit toward that minor. This policy does not apply to students who have been terminated from the School of Business. Terminated students are prohibited from taking business courses.

**Undergraduate Course Overload Policy**

The School of Business recommends that undergraduate students attempt no more than 18 credits in an academic semester and no more than 14 credits in a summer term. Students wishing to attempt more than 18 credits must submit a Permission to Overload from to their academic advisor.

To be eligible for a course overload, a student must fulfill all of the following criteria:

- At least a 3.0 cumulative GPA at Mason
- Have completed all courses successfully in their previous semester with no F or incomplete (IN) grades
- Complete the Permission to Overload form and obtain an academic advisor’s signature

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

**Transfer Credit Expiration Policy**

Transfer credit is not awarded for any business (management, marketing, finance, accounting, management information systems, operations and supply chain management, foundations, core, or any other School of Business course) courses completed more than ten years prior to Mason enrollment. This includes any older courses completed at RBC or the VCCS.

**Appeals Process**

The School of Business strives to maintain policies and procedures that are consistent with those of the University, as well as in the best interest of our students. If you have any questions concerning a particular policy or procedure, contact the Office of Student Success & Academic Services, Room 008 of Enterprise Hall (703-993-1880) or visit the website (https://www.business.gmu.edu).

**Courses Excluded from School of Business BS Degree**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 401</td>
<td>Internship Reflection</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 394</td>
<td>Ethnomusicology Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>COMM 450</td>
<td>Internship in Communication</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 450</td>
<td>Internship in Film and Video Studies</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 480</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 496</td>
<td>Internship</td>
<td>2-6</td>
</tr>
<tr>
<td>CONF 370</td>
<td>Internship Field Experience</td>
<td>1-9</td>
</tr>
<tr>
<td>PHIL 306</td>
<td>Philosophy Internship</td>
<td>3-6</td>
</tr>
<tr>
<td>RELI 426</td>
<td>Religious Studies Internship</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 393</td>
<td>Art History Internships</td>
<td>3-6</td>
</tr>
<tr>
<td>GCH 498</td>
<td>Global and Community Health Internship</td>
<td>3,6</td>
</tr>
<tr>
<td>GAME 491</td>
<td>Internship</td>
<td>3-4</td>
</tr>
<tr>
<td>HAP 498</td>
<td>Health Administration Internship (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>HDFS 499</td>
<td>Advanced Internship and Analysis in Human Development and Family Science</td>
<td>1-3</td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>ENGH 459</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>MUSI 395</td>
<td>Teaching Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>ECON 498</td>
<td>Internship</td>
<td>3-6</td>
</tr>
<tr>
<td>ASTR 409</td>
<td>Astronomy Internship</td>
<td>3</td>
</tr>
</tbody>
</table>
business foundations, business core and concentration requirements. In addition, the following requirements must be met:

- A minimum of 45 credits at the 300- or 400-level.
- A minimum of 30 credits of School of Business core and concentration courses at Mason.
- At least 9 credits required for the specific concentration and BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142) taken at Mason.
- A grade of C or higher earned in the business foundations, business core and concentration requirements.

Students should carefully follow prerequisites for School of Business courses. Students may be removed from a course if they enroll without having fulfilled the prerequisites.

Mason Core Requirements

Some Mason Core requirements may already be fulfilled by the major requirements listed below. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>MC 108</td>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>MC 109</td>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>MC 200</td>
<td>Arts</td>
<td>3</td>
</tr>
<tr>
<td>MC 201</td>
<td>Literature</td>
<td>3</td>
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<tr>
<td>MC 202</td>
<td>Natural Science</td>
<td>8</td>
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<tr>
<td>MC 203</td>
<td>Western Civilization/World History</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>26</td>
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</tbody>
</table>

1 MATH 108 or MATH 113 satisfies the Mason Core quantitative reasoning requirement (p. 143). MIS 303 satisfies the Mason Core information technology and computing requirement. (p. 143)
2 BUS 200 satisfies Mason Core global understanding requirement (p. 146). and BUS 100 satisfies the Mason Core social and behavioral sciences requirement (p. 150).
3 The School of Business natural science requirement (p. 148) must be fulfilled by completing two 4-credit laboratory sciences. Note: Remaining Mason Core requirements are fulfilled with concentration course work.

Business Foundations

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 203</td>
<td>Survey of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 100</td>
<td>Business and Society (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 103</td>
<td>Develop Professional Skills I: Foundational Elements</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200</td>
<td>Global Environment of Business (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 210</td>
<td>Business Analytics I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 310</td>
<td>Business Analytics II</td>
<td>3</td>
</tr>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Requirements

Degree Requirements

Total credits: 120

School of Business students pursuing a BS degree must complete a minimum of 120 credits, including the Mason Core requirements.
Contemporary Macroeconomic Principles (Mason Core) (p. 142) 3

Select one course from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>HNRT 225</td>
<td>Applied Calculus</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 27-28

**Business Core**

A grade of C or higher is required in each of the School of Business core courses listed below. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making, BULE 303 Legal Environment of Business BUS 303 Develop Professional Skills II: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing, OM 303 Operations Management, and OSCM 303 Operations Management. Those who do not successfully complete these core courses within three attempts will be terminated from the School of Business and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare a business minor. For more information about this, see AP.5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

**Capstone**

Students must successfully complete all Business Core courses and BUS 310 Business Analytics II to be eligible to enroll in BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 498</td>
<td>Capstone Course: Advanced Business Models (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

**Concentration in Accounting (ACCT)**

The concentration in Accounting prepares students for professional careers in the private and public sectors. The accounting concentration is designed to produce accounting professionals who can both generate and apply financial information to solve business problems. Our students learn principles of business and accounting as well as the specific skills and specialized technical knowledge necessary for success in the dynamic field of accounting. Our program emphasizes ethics, critical thinking, written and verbal communication, and effective use and understanding of technology. Our graduates are employed by the assurance, tax advisory, and consulting groups of the top accounting firms as well as Fortune 100 companies. Our proximity to the nation’s capital provides unique opportunities for our graduates to work in government and in the federal practices of public accounting firms. The accounting concentration program is separately accredited by AACSB International. Students interested in CPA certification can apply to the MSA (https://catalog.gmu.edu/colleges-schools/business/business-accounting-ms) degree to meet the 150 hour requirement for CPA certification in most states. The MSA (https://catalog.gmu.edu/colleges-schools/business/business-accounting-ms) allows students to meet the 150 hour requirement for CPA certification in most states in only nine months.

Also available for eligible students, the Accelerated Advanced Accounting Pathway (A++) is a pathway that provides the ability to complete a bachelor and master's degree in accounting in four years. For more information, please meet with an academic advisor in the School of Business.

**General Electives**

Select 18-19 Credits 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACCT 303</td>
<td>Accounting for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 330</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 303</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 303</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>OM 303</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>or OSCM 303</td>
<td>Operations Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 24

1 General electives may be selected from any University or School of Business course, except courses designated for the Business Minor (MBUS) and courses designated for the Business Minor (MBUS). Credits awarded as Associate Degree Elective Credit (ADEC) as part of a student’s transfer evaluation are also excluded from general electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 311</td>
<td>Managerial and Cost Accounting</td>
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</tr>
<tr>
<td>ACCT 331</td>
<td>Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 332</td>
<td>Financial Accounting III</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 351</td>
<td>Taxation and Managerial Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 361</td>
<td>Accounting Analytics</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 461</td>
<td>Assurance and Audit Services</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

Select one course from the following: 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 370</td>
<td>International Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 372</td>
<td>Financial Statement Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 411</td>
<td>Advanced Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 433</td>
<td>Advanced Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 451</td>
<td>Advanced Federal Taxation</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 462</td>
<td>Honors Seminar in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 472</td>
<td>Government and Not-for-Profit Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 491</td>
<td>Seminar in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 492</td>
<td>Internship in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 499</td>
<td>Independent Study</td>
<td>3</td>
</tr>
</tbody>
</table>
A grade of C or higher is required in each of the upper-level accounting concentration courses listed below. Students will not be permitted to make more than three attempts to achieve a C or higher in the following required accounting courses: ACCT 311 Managerial and Cost Accounting, ACCT 331 Financial Accounting II, ACCT 332 Financial Accounting III, ACCT 351 Taxation and Managerial Decision Making, ACCT 361 Accounting Analytics, and ACCT 461 Assurance and Audit Services. Those who do not successfully complete these required courses within three attempts will not be eligible for the concentration in Accounting. Students terminated from the Accounting concentration are prohibited from enrolling in any accounting course.

Students who anticipate taking the CPA, CMA, CIA or other professional exam should consult the applicable regulations and meet with their advisor. State regulations regarding professional examinations may dictate course selections.

Students in the Accelerated Master's program and select high performing undergraduates may take graduate courses for undergraduate credit. Enrollment in a graduate level course is not guaranteed. Please contact an academic advisor for additional information.

**Second Concentration in Accounting**

Students declaring a second concentration in Accounting must complete the 18 required credits (listed below) in addition to ACCT 330 Financial Accounting I.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 330</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 311</td>
<td>Managerial and Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 331</td>
<td>Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 332</td>
<td>Financial Accounting III</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 351</td>
<td>Taxation and Managerial Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 361</td>
<td>Accounting Analytics</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 461</td>
<td>Assurance and Audit Services</td>
<td>3</td>
</tr>
</tbody>
</table>

**Concentration in Business Analytics (BUSA)**

Business analytics encompasses a wide array of methodologies and techniques, from collection, organization, reporting and mining of data to extraction of useful and actionable information for the decision makers. As the field matures, more organizations are turning to business analytics as part of their core function to assist decision making and strategy development. Business analytics is grounded in an understanding of business and uses knowledge and skills related to analytic tools to identify business questions that can be answered by data, identify appropriate data to answer the questions, evaluate the quality of the data, analyze the data, form conclusions, and meaningfully communicate those conclusions to relevant parties. Business analysts will work in practice with data scientists with backgrounds in engineering, math, or computer science whose expertise in data analytics is centered on data architecture or developing data analysis tools.

**Concentration in Finance (FNAN)**

The concentration in Finance prepares students for professional careers by providing a solid foundation in the principles necessary to make operating decisions for an organization and in financial market analysis. We educate our finance students to understand, evaluate, and manage risk. In addition, students learn to conduct and effectively present financial analysis and research valuing complex projects, assets, securities, and firms. Students in the finance concentration explore the relationships among investors, firms, financial institutions, markets, and regulators. Students with a concentration in Finance have a unique opportunity to compete globally, as well as regionally, for unique and diverse job opportunities, including government (U.S. Treasury and the Board of Governors), large financial corporations (Fannie Mae and Freddie Mac), international organizations (World Bank and IMF), and other careers related to Finance.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNAN 311</td>
<td>Principles of Investment</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 321</td>
<td>Financial Institutions</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 341</td>
<td>Introduction to Firm Valuation</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 401</td>
<td>Advanced Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 498</td>
<td>RS: Contemporary Topics in Finance</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIS 310</td>
<td>Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>MIS 343</td>
<td>Data Warehousing</td>
<td>3</td>
</tr>
<tr>
<td>MIS 431</td>
<td>Data Mining for Business Applications</td>
<td>3</td>
</tr>
<tr>
<td>MIS 433</td>
<td>Programming for Analytics</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 430</td>
<td>Empirical Methods in Finance</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 436</td>
<td>Probability Methods for Finance</td>
<td>3</td>
</tr>
<tr>
<td>MIS 302</td>
<td>Introduction to Programming for Business Applications</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 351</td>
<td>Advanced Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 352</td>
<td>Marketing Analytics for New Product Development</td>
<td>3</td>
</tr>
<tr>
<td>OSCM 352</td>
<td>Management Science</td>
<td>3</td>
</tr>
<tr>
<td>OSCM 452</td>
<td>Business Forecasting</td>
<td>3</td>
</tr>
<tr>
<td>STAT 463</td>
<td>Introduction to Exploratory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SYST 473</td>
<td>Decision and Risk Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BUS 492</td>
<td>Internship in Business</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 21
Students declaring a second concentration in Finance must complete the four required courses and two elective courses for the concentration.

### Concentration in Financial Planning (FNPL)

Consumers increasingly seek professional advice on managing their finances from professionals with wide-ranging knowledge from taxes and estate planning to insurance and retirement planning to portfolio management. In a recent article title, Forbes described Financial Planning as “One of the Fastest Growing Careers” and noted that the field “is in Desperate Need of Young Talent.” The article went on to explain that the field is expected to grow at a 32% rate over the next decade according to the Bureau of Labor Statistics while the average growth rate for all occupations is 14%.” (Touyralis, 2012). The field of financial planning includes several certifications including the Certified Financial Planner certification (CFP) through the CFP Board and Personal Financial Specialist (PFS) certification through the AICPA. The national CFP Board and regional FPA leadership have reached out to Mason to work with us to develop a CFP-registered program in Financial Planning due to the significant need in our region for graduates with this specialization.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNAN 311</td>
<td>Principles of Investment</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 321</td>
<td>Financial Institutions</td>
<td></td>
</tr>
<tr>
<td>FNAN 341</td>
<td>Introduction to Firm Valuation</td>
<td></td>
</tr>
<tr>
<td>FNAN 401</td>
<td>Advanced Financial Management</td>
<td></td>
</tr>
<tr>
<td>FNAN 411</td>
<td>Investment Analysis and Portfolio Management</td>
<td></td>
</tr>
<tr>
<td>FNAN 412</td>
<td>Futures and Options Markets</td>
<td></td>
</tr>
<tr>
<td>FNAN 421</td>
<td>Money and Capital Markets</td>
<td></td>
</tr>
<tr>
<td>FNAN 430</td>
<td>Empirical Methods in Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 431</td>
<td>Venture Capital and Private Financing of Startups</td>
<td></td>
</tr>
<tr>
<td>FNAN 432</td>
<td>Fixed-Income Securities</td>
<td></td>
</tr>
<tr>
<td>FNAN 436</td>
<td>Probability Methods for Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 440</td>
<td>International Financial Management</td>
<td></td>
</tr>
<tr>
<td>FNAN 441</td>
<td>Advanced Topics in Firm Valuation</td>
<td></td>
</tr>
<tr>
<td>FNAN 451</td>
<td>Real Estate Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 454</td>
<td>Real Estate Development</td>
<td></td>
</tr>
<tr>
<td>FNAN 462</td>
<td>Honors Seminar in Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 472</td>
<td>Fintech and Blockchain in Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 477</td>
<td>Student Managed Investment Fund</td>
<td></td>
</tr>
<tr>
<td>FNAN 491</td>
<td>Special Topics in Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 492</td>
<td>Internship in Finance</td>
<td></td>
</tr>
<tr>
<td>or BUS 492</td>
<td>Internship in Business</td>
<td></td>
</tr>
<tr>
<td>FNAN 499</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>Any other 300-400 level FNAN courses (p. 1707)</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 21

1. Completion of FNAN 303 with a grade of B- or higher is a required prerequisite for FNAN 311, FNAN 321, FNAN 341, FNAN 401 and FNAN 440.

2. With the exception of FNAN 300 and FNAN 303.

### Concentration in Management (MGMT)

The concentration in Management prepares students to take leadership, management, and entrepreneurial roles in the public and private sectors. Students learn such skills as strategic thinking, motivating and managing nationally and internationally diverse work forces, building and leading team efforts, negotiating successfully, and instituting planned change in organizations.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 313</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 321</td>
<td>Introduction to Human Resource Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

Select 15 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 412</td>
<td>Diversity in Organizations</td>
<td></td>
</tr>
<tr>
<td>MGMT 413</td>
<td>Organizational Development and Management Consulting</td>
<td></td>
</tr>
<tr>
<td>MGMT 421</td>
<td>Advanced Human Resource Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 431</td>
<td>The Legal Environment for Employee and Labor Relations</td>
<td></td>
</tr>
<tr>
<td>MGMT 441</td>
<td>International Strategy</td>
<td></td>
</tr>
<tr>
<td>MGMT 451</td>
<td>Introduction to Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>MGMT 452</td>
<td>Experiential Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>MGMT 453</td>
<td>Starting a Business</td>
<td></td>
</tr>
<tr>
<td>MGMT 454</td>
<td>Social Impact and Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>MGMT 461</td>
<td>Cross Cultural and Global Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 462</td>
<td>Honors Seminar in Management (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>MGMT 463</td>
<td>Negotiations in Organizations</td>
<td></td>
</tr>
<tr>
<td>MGMT 464</td>
<td>Teamwork and Interpersonal Skills</td>
<td></td>
</tr>
<tr>
<td>MGMT 471</td>
<td>Competitive Strategy</td>
<td></td>
</tr>
<tr>
<td>MGMT 491</td>
<td>Current Topics in Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 492</td>
<td>Internship in Management</td>
<td></td>
</tr>
</tbody>
</table>
Students with a concentration in management may focus their careers in several areas. In selecting five elective courses, students may want to consider a likely career path. Recommended courses for three possible careers are provided below.

### Human Resources Management
- MGMT 421: Advanced Human Resource Management (3 credits)
- MGMT 431: The Legal Environment for Employee and Labor Relations (3 credits)

### Management Consulting
- MGMT 412: Diversity in Organizations (3 credits)
- MGMT 463: Negotiations in Organizations (3 credits)
- MGMT 464: Teamwork and Interpersonal Skills (3 credits)

### Entrepreneurship
- MGMT 451: Introduction to Entrepreneurship (3 credits)
- MGMT 452: Experiential Entrepreneurship (3 credits)
- MGMT 454: Social Impact and Entrepreneurship (3 credits)

### Second concentration in Management
Students declaring a second concentration in Management must complete the two required courses and four elective courses for the concentration.

### Concentration in Management Information Systems (MIS)

The concentration in Management Information Systems encompasses analysis, design, implementation, and management of information systems, to support business processes and decision making in all functional areas of an organization. The curriculum highlights not only the fundamental building blocks of information systems, but also the interaction of technology, people and business processes. MIS students learn about designing, building, maintaining, and securing information systems to meet organizational goals. They also acquire skills to use data and information through business analytics to support better managerial decision making in areas such as marketing, accounting and finance. MIS graduates are capable of translating business needs into technology-based solutions, and new technological advances into business capabilities. The MIS concentration prepares students for diverse technology based careers including Business Analyst, Data Analyst, IT Project Management, IT Quality Management, IS Audit and Control, Government Contracting, and Consulting.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIS 310</td>
<td>Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>MIS 320</td>
<td>Networks and Security</td>
<td>3</td>
</tr>
<tr>
<td>MIS 330</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
</tbody>
</table>

### Concentration in Marketing (MKTG)

The concentration in Marketing prepares students for a broad range of global and domestic career options in corporations, small businesses, government, and nonprofits. A marketing concentration provides students with a solid foundation in marketing management for understanding the needs of the customer, the value organizations create for their customers, and opportunities and threats in the global marketplace. Students learn marketing concepts and practices related to consumer behavior, marketing research and analytics, and marketing planning and strategy (product development, pricing, distribution, and advertising and promotions). Our graduates work in such diverse fields as advertising and marketing communications, product and brand management, customer relationship management, new product/service development, new market and business development, sales, retail management, marketing research and analytics, and digital and social media marketing.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKTG 312</td>
<td>Consumer Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 351</td>
<td>Marketing Research</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 471</td>
<td>Marketing Management</td>
<td>3</td>
</tr>
</tbody>
</table>

### Electives
Select 12 credits from the following:
- MKTG 307: Federal Government Marketing
- MKTG 311: Sales Management
- MKTG 313: Advertising and Marketing Communications
**Business Minor**

**Second Concentration in Marketing**

Students declaring a second concentration in Marketing must complete the three required courses and three elective courses for the concentration.

### Concentration in Operations and Supply Chain Management (OSCM)

Operations and Supply Chain Management (OSCM) is the business function devoted to the management of resources and processes used by a firm to produce goods or services. Students with an OSCM concentration learn how to perform strategic and tactical planning, enabling them to efficiently and effectively manage the activities involved in transforming organizational resources into customer value. OSCM students acquire modeling, business analytics, and information technology skills for addressing a range of business problems. OSCM knowledge and skills are applicable to every business, spanning services, manufacturing, consulting, public sector (including government contracting), and not-for-profit organizations. The OSCM concentration is designed to prepare students for a career in the areas of: Supply Chain Management, Government Contracting (including procurement, logistics, and distribution), Project Management, Quality Management, Socially Responsible Operations, Product and Services Design, Process Analysis and Design, and, Planning and Control of Operations.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSCM 320</td>
<td>Supply Chain Management in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>OSCM 456</td>
<td>Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>OSCM 493</td>
<td>Management of Technology Projects</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Select four courses from the following (at least two must be OSCM):

- OSCM 352 Management Science
- OSCM 435 Business Process Analysis and Simulation
- OSCM 462 Honors Seminar in Operations Management (Topic Varies)
- MIS 499 Independent Study in Operations Management
- MIS 432 Data Mining for Business Applications
- MIS 431 Data Mining for Business Applications
- MIS 430 Data Warehousing
- MIS 412 E-Business Systems Development
- MIS 410 Database Management Systems
- MIS 411 E-Business Systems Development
- MIS 462 Honors Seminar in Management Information Systems (Topic Varies)
- FNAN 462 Honors Seminar in Finance
- MGMT 462 Honors Seminar in Management (Topic Varies)
- MKTG 462 Honors Seminar in Marketing (Topic Varies)
- ACCT 462 Honors Seminar in Accounting

**Total Credits**: 21

---

**Honors**

**Admission Requirements**

- 3.0 cumulative Mason GPA
- 3.5 major GPA or be in the 95th percentile of GPA's within the concentration
- B- or higher on first attempt in every concentration course
- A- or higher on first attempt at core course for concentration
- Submission of a personal statement/essay (topic to be determined)
- Two academic/professional references
- Once admitted to the program, students with a cumulative GPA below a 3.0 will be dropped from the program.

**Co-Curricular Requirements**

The student must complete ONE of the following in addition to the curriculum requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 462</td>
<td>Honors Seminar in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 462</td>
<td>Honors Seminar in Finance</td>
<td>3</td>
</tr>
<tr>
<td>MIS 462</td>
<td>Honors Seminar in Management Information Systems (Topic Varies)</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 462</td>
<td>Honors Seminar in Management (Topic Varies)</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 462</td>
<td>Honors Seminar in Marketing (Topic Varies)</td>
<td>3</td>
</tr>
<tr>
<td>OSCM 462</td>
<td>Honors Seminar in Operations Management (Topic Varies)</td>
<td>3</td>
</tr>
</tbody>
</table>

---

**Business Minor**

Banner Code: BUS

**Academic Advising**

Phone: 703-993-1880
The business minor provides an introduction to the skills needed for success in the rapidly changing and evolving world of business. Because it is designed for non-business students who seek to learn business essentials to enhance their own area of expertise, the minor provides broad exposure to business concepts and theories. The minor also presents and integrates the major functional areas in business to solve management problems through the use of IT. Strong written and oral communication skills are expected.

**Admissions & Policies**

**Policies**

For policies governing all minors, see AP.5.3.4 Minors (p. 90). The School of Business residency requirement for this minor supersedes the university requirement: at least nine credits must be earned at Mason. At least eight credits of the minor courses must be unique to the Business Minor and not applied toward any other major, minor, or concentration. Students must achieve a grade of C or better in each course that is applied toward the minor.

**Requirements**

**Minor Requirements**

Total credits: 15

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBUS 300</td>
<td>Accounting in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 302</td>
<td>Managing Information in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 303</td>
<td>Marketing in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 308</td>
<td>Corporate Finance and Investments in a Global Economy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12-15

**Electives**

Select the fifth course from the following: 0-3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBUS 304</td>
<td>Entrepreneurship: Starting and Managing a New Enterprise</td>
</tr>
<tr>
<td>MBUS 305</td>
<td>Introduction to International Business (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>MBUS 306</td>
<td>Managing Projects and Operations</td>
</tr>
</tbody>
</table>

**Excluded Courses**

These courses may not be taken for credit by School of Business majors. Students who have already taken and received credit for relevant School of Business foundation or core course(s) shall substitute courses as follows and cannot receive credit for the equivalent MBUS course:

- ACCT 203 Survey of Accounting for MBUS 300 Accounting in a Global Economy
- FNAN 301 or FNAN 303 Financial Management for MBUS 308 Corporate Finance and Investments in a Global Economy
- MGMT 303 Principles of Management for MBUS 301 Managing People and Organizations in a Global Economy
- MIS 301 or MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142) for MBUS 302 Managing Information in a Global Economy
- MKTG 301 or MKTG 303 Principles of Marketing for MBUS 303 Marketing in a Global Economy,
- OM 301 or OM 303 Operations Management for MBUS 306 Managing Projects and Operations

Students may transfer a maximum of six credits toward the business minor.

**Business Fundamentals Graduate Certificate (pending SCHEV approval)**

Banner Code: BU-CERG-BUSF

Graduate Program Office

Phone: 703-993-8006
Email: sbusgrad@gmu.edu

**Admissions & Policies**

**Note:** as of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

**Admissions**

All students registering for School of Business graduate courses must have graduate standing. Non-degree student status is not available. Full eligibility and admission requirements can be viewed at the school's website (http://business.gmu.edu/masters-in-accounting/forensic-accounting).

**Policies**

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).
Chief Information Officer Graduate Certificate
Banner Code: BU-CERG-CIO
Graduate Program Office
Phone: 703-993-2136
Email: techman@gmu.edu

Administration
- Candace Deans, Director, MS in Technology Management Program & Co-Academic Director, MS in Management of Secure Information Systems Programs

The Chief Information Officer Graduate Certificate helps Information Technology professionals gain core competencies necessary for advancement into executive level roles that manage IT resources and strategy within organizations. The program specifically focuses on Enterprise Architecture and IT Governance, Management of Information Security, IT Project Management, Managing IT Investments, Managing IT Operations, and Emerging Technologies.

This certificate may be pursued on a part or full time basis.

Admissions & Policies

Admissions
Applicants are expected to be current students in the MS Technology Management (p. 935) program. This is a 12 credit program and students may use the credits completed as part of their graduate degree requirements in accordance with AP.6.8.1 Students in Master's or Doctoral Programs also Pursuing Graduate Certificates (p. 94).

Entrepreneurship Minor
Banner Code: ENTR
Academic Advising
Phone: 703-993-1880
Email: masonbus@gmu.edu

Administration
- David Gallay, Director of Minor Programs

The Entrepreneurship Minor provides students with an interest in learning more about elements of new venture creation the ability to gain a strong set of entrepreneurship acumen. In combination with the school’s expanding co-curricular entrepreneurship programs, the minor in entrepreneurship will provide an experiential platform to grow student skill sets, networks and professional portfolios.

Admissions & Policies

Policies
Students must complete five courses for a total of 15-18 credits.
Students must earn credit for the two required courses and can pick three courses of electives. At least eight credits must be unique to the minor and not applied toward any other major, minor, or concentration. Students must achieve a grade of C or better in each course that is applied toward the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

The School of Business residency requirement for this minor supersedes the university requirement: at least nine credits must be earned at Mason.
### Required Courses

Business major students should take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 451</td>
<td>Introduction to Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

Non-business major students should take one of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBUS 304</td>
<td>Entrepreneurship: Starting and Managing a New Enterprise</td>
<td>3</td>
</tr>
<tr>
<td>or IT 495</td>
<td>Turning Ideas into Successful Companies</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

All students must take the following course:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 452</td>
<td>Experiential Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

### Electives

Select three courses from any of the following interests: 9

**Commercial Entrepreneurship Courses:**

- ACCT 311 Managerial and Cost Accounting
- ACCT 351 Taxation and Managerial Decision Making
- MGMT 453 Starting a Business
- OM 320 Supply Chain Management in a Global Economy
- OM 493 Management of Technology Projects
- FNAN 341 Introduction to Firm Valuation
- FNAN 431 Venture Capital and Private Financing of Startups
- MKTG 352 Marketing Analytics for New Product Development
- MKTG 353 New Product Development
- MKTG 313 Advertising and Marketing Communications

**Social Innovation Courses:**

- EVPP 480 Sustainability in Action (Mason Core) (p. 142)
- GOVT 353 Social Entrepreneurship
- GOVT 358 Nonprofit Financial Planning
- INTS 331 The Nonprofit Sector (Mason Core) (p. 142)
- INTS 431 Principles of Fund Raising
- MGMT 454 Social Impact and Entrepreneurship
- PHIL 305 Business Ethics
- PSYC 335 Psychology of Creativity and Innovation

**Other Entrepreneurship Electives:**

- BENG 451 Translation and Entrepreneurship in Bioengineering
- IT 343 IT Project Management

|        | **Total Credits**                          | **9**   |

### Executive MBA

Banner Code: BU-MBA-BUEX

**Graduate Program Office**

Phone: 703-993-2136
Website: emba@gmu.edu

**Administration**

- Claus Langfred, Academic Director, Executive MBA Program

The Executive MBA is designed for those with a minimum of 7 years of significant business or military/professional experience. The program’s focus is management decision making, strategic management of business resources, and leadership – all in the context of National Security and Government Contracting firms. Dedicated faculty, an innovative and relevant curriculum for the D.C. area, a student-centered program team, and great colleagues contribute to the learning experience of a lifetime. The program is carefully designed to help students master a broad range of executive-level competencies while cultivating expert business-related knowledge of the National Security business environment. Students complete the program as a cohort, resulting in strong bonds and networking opportunities. The program is completed in 16 months, starting in January and classes are held approximately one Saturday and one Friday per month.

**Diversity in Learning**

Students encounter multiple approaches to learning in the program. Classroom discussions, team projects, individual reading, team presentations, team problem solving, business simulations, business case analyses, coaching, and a D.C. residency all contribute to the creative learning environment delivered by the Mason Executive MBA Program.

**National Security Focus**

With America’s role in the world continually evolving to meet new global challenges, the role of leadership in the security industry has never been more vital. The need for military leaders, government executives and corporate defense contractors who can provide mission critical products and services - and who understand the unique demands of the complex and dynamic national security sector - has never been more critical. Dedicated faculty from the Mason School of Business and adjunct faculty (working faculty working in specialty areas of the security sector) as well as accomplished government, military, and corporate guest speakers, technical experts, and Mason alumni employed in the security industry, are a part of the National Security focus on this program. The dynamic learning environment brings contemporary challenges of the national security industry right into the classroom.

**Admissions & Policies**

**Admissions**

Full eligibility and admission requirements can be viewed at the program’s website. (http://business.gmu.edu/emba/admissions)
Policies

All students registering for School of Business graduate courses must have graduate standing. Non-degree student status is not available.

Requirements

Degree Requirements

Total credits: 48

Modules

Students complete eight 8-week modules. During each eight-week module, students complete two courses (one in-person and one on-line) in an applications-oriented sequence that takes them from developing core management skills through the understanding and application of the tools of business performance to the talents of leadership.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMBA 603</td>
<td>Managerial Economics</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 612</td>
<td>Managing Costs and Evaluating Performance</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 613</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 623</td>
<td>Marketing</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 633</td>
<td>Statistics for Business Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 638</td>
<td>Services and Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 643</td>
<td>Managerial Finance</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 653</td>
<td>Organizational Behavior and Teams</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 660</td>
<td>Management of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 678</td>
<td>Business Strategy</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 718</td>
<td>Strategic Leadership in National Security Firms</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 729</td>
<td>Critical Infrastructure Protection and Resilience</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 740</td>
<td>Global Issues for National Security Firms</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 741</td>
<td>The Business of National Security</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 743</td>
<td>Growth Strategies for National Security Firms</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 790</td>
<td>National Security Residency</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 48

Admissions & Policies

Policies

Academic Policies

Students should become familiar with the university’s general academic policies (p. 77) in addition to those specific to each academic unit.

E-mail

George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school/department/program and other administrative units, and check it regularly for important information.

Study Elsewhere Policy

A student who has matriculated at Mason may transfer a limited number of hours (9 for undergraduates, 6 for graduates) of coursework in School of Business disciplines from another institution (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education). Students are permitted to take courses elsewhere under unusual circumstances—these circumstances do not include scheduling or commuting convenience, or financial (lower cost) reasons.

Special instructions for School of Business students: courses that are attempted at a two-year institution may not be used to fulfill upper-level requirements. Any course that a student wished to transfer to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

For additional information, see AP.1.4.2 Permission to Study Elsewhere (p. 79).

Undergraduate Internship Policy

The School of Business recognizes the importance of experiential education in both learning to apply theory to practice and positioning students for success in their careers. Because the School of Business is committed to supporting students’ professional success, the School requires that all student internships for credit be registered with the School of Business as one of the following: ACCT 492, BUS 492, FNAN 492 (https://catalog.gmu.edu/search/?scontext=courses&search=FNAN+492), MGMT 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MGMT+492), MIS 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MIS+492), MKTG 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MKTG+492), OSCM 492 or OM 492 (https://catalog.gmu.edu/search/?scontext=courses&search=OM+492). Students may enroll in a maximum
of 6 credits for these courses. For students in catalog years Fall 2016 and beyond, one internship course may apply to the major, and a second internship course would apply as elective credit. For students in catalog years prior to Fall 2016, a maximum of 6 credits of internship may apply to general electives.

Termination from the Major

A grade of C or higher is required in each of the School of Business listed core courses. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment of Business, BUS 303 Develop Professional Skills I: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing OM 303 Operations Management and OSCM 303 Operations Management.

Once a student has attempted a School of Business Core or Accounting major course twice unsuccessfully, they must meet with an academic advisor in order to receive an override to register for the third attempt. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare the business minor only, and are not able to declare any other School of Business minors. Student are limited to three attempts at ACCT 330. Any student who is unable to achieve a C or higher in ACCT 330 on the third attempt will not be able to pursue a Major in Accounting or Finance. For more information about this, see AP.5.2.4 Termination from the Major (p. 88).

University Consortium

Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstance. All consortium registration requests must be submitted to the dean’s office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Any consortium course that a student wishes to register for to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Non-Business School Student Credit Limitation

Enrolled undergraduate students who are not declared in a School of Business major are limited to 9 credits of upper-level business coursework within the School of Business. This policy applies to any student who is declared in another major or program at Mason. This policy does not apply to students who have declared a School of Business minor and are earning required credit toward that minor.

Undergraduate Course Overload Policy

The School of Business recommends that undergraduate students attempt no more than 18 credits in an academic semester and no more than 14 credits in a summer term. Students wishing to attempt more than 18 credits must submit a Permission to Overload form to their academic advisor.

To be eligible for a course overload, a student must fulfill all of the following criteria:

- At least a 3.0 cumulative GPA at Mason
- Have completed all courses successfully in his/her previous semester with no Fs or incompletes (IN)
- Complete the Permission to Overload form and obtain an academic advisor’s signature

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

Transfer Credit Expiration Policy

Transfer credit is not awarded for any business (management, marketing, finance, accounting, management information systems, operations management, foundations, core, or any other School of Business course), courses completed more than ten years prior to Mason enrollment. This includes any older courses completed at RBC or the VCCS.

Appeals Process

The School of Business strives to maintain policies and procedures that are consistent with those of the University, as well as in the best interest of our students. If you have any questions concerning a particular policy or procedure, contact the Office of Student Success & Academic Services, Room 008 of Enterprise Hall (703-993-1880) or visit the website (http://business.gmu.edu).

Courses Excluded from any School of Business BS Degree

Transfer credit is not awarded for any School of Business courses completed more than ten years prior to Mason enrollment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 401</td>
<td>Internship Reflection</td>
<td>1</td>
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<tr>
<td>MUSI 394</td>
<td>Ethnomusicology Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>COMM 450</td>
<td>Internship in Communication</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 450</td>
<td>Internship in Film and Video Studies</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 480</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 496</td>
<td>Internship</td>
<td>2-6</td>
</tr>
<tr>
<td>CONF 370</td>
<td>Internship Field Experience</td>
<td>1-9</td>
</tr>
<tr>
<td>PHIL 306</td>
<td>Philosophy Internship</td>
<td>3</td>
</tr>
<tr>
<td>RELI 426</td>
<td>Religious Studies Internship</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 393</td>
<td>Art History Internships</td>
<td>3-6</td>
</tr>
<tr>
<td>GCH 498</td>
<td>Global and Community Health Internship</td>
<td>3,6</td>
</tr>
<tr>
<td>GAME 491</td>
<td>Internship</td>
<td>3-4</td>
</tr>
<tr>
<td>HAP 498</td>
<td>Health Administration Internship (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>HDFS 499</td>
<td>Advanced Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>ENGH 459</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>MUSI 395</td>
<td>Teaching Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>INTS 390</td>
<td>International Internship</td>
<td>1-6</td>
</tr>
</tbody>
</table>
INTS 490 Internship 1-6
ECON 498 Internship 3-6
ASTR 409 Astronomy Internship 3
SPMT 490 Internship (Mason Core) (p. 142) 12
TOUR 490 Hospitality, Tourism, and Events Management Internship (Mason Core) (p. 142) 12
CLIM 409 Research Internship 3
CHIN 490 Internship in Chinese Studies 1-9
CONS 498 Internship 1-3
THR 455 Theater Education Internship 6-12
AFAM 490 Internship 2-6
KINE 490 Kinesiology Internship III (Mason Core) (p. 142) 12
AMGT 489 Internship in Arts Management 1-4
HDFS 498 Internship and Analysis in Human Development and Family Science 3
ANTH 495 Internship 1-6
PRLS 490 Recreation Management Internship (Mason Core) (p. 142) 12
GGS 480 GGS Internship 1-3
SPAN 490 Internship in Spanish 1-6
AVT 489 Internship in Art and Visual Technology 1-6
USST 490 Internship 3
WMST 490 Internship in Women and Gender Studies 1-3
HHS 480 Research Internship in Health and Human Services 3
CRIM 480 Internship 6-12
HIST 399 Internship 1-9
RHBS 490 RS: Clinical Research Internship 3
KINE 341 Kinesiology Internship I 3
MUSI 495 Internship in Music Education (Mason Core) (p. 142) 6-12
KINE 441 Kinesiology Internship II 3
PHYS 409 Physics Internship 3
HHS 492 RS: Internship in Clinical Research 3
SOCI 416 Internship in Sociology I 3-6
FRLN 490 Internship in Foreign Language Studies 1-6
ENGR 395 Engineering Internship 3
GLOA 480 Internship 1-3
CVPA 489 Field Experience in the Arts 3-6
GLOA 495 Global Experiential Learning 1-18
KINE 330 Seminar in Kinesiology 3
ECED 490 Internship in Early Childhood Education 3-6
FRSC 406 Forensic Internship 3

School of Business students pursuing a BS degree must complete a minimum of 120 credits, including the Mason Core requirements, business foundations, business core and major requirements. In addition, the following requirements must be met:

- A minimum of 45 credits at the 300- or 400-level.
- A minimum of 30 credits of School of Business core and major courses at Mason.
- At least 9 credits required for the specific major and BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142) taken at Mason.
- A grade of C or higher earned in the business foundations, business core and major requirements.

Students should carefully examine prerequisites for School of Business courses. Students may be removed from a course if they enroll without having fulfilled the prerequisites.

### Mason Core Requirements

Some Mason Core requirements may already be fulfilled by the major requirements listed below. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 498</td>
<td>Internship in Business Management (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>ECON 498</td>
<td>Internship</td>
<td>3-6</td>
</tr>
<tr>
<td>ASTR 409</td>
<td>Astronomy Internship</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 490</td>
<td>Internship (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>TOUR 490</td>
<td>Hospitality, Tourism, and Events Management Internship (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 490</td>
<td>Internship in Chinese Studies</td>
<td>1-9</td>
</tr>
<tr>
<td>CONS 498</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>THR 455</td>
<td>Theater Education Internship</td>
<td>6-12</td>
</tr>
<tr>
<td>AFAM 490</td>
<td>Internship</td>
<td>2-6</td>
</tr>
<tr>
<td>KINE 490</td>
<td>Kinesiology Internship III (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>AMGT 489</td>
<td>Internship in Arts Management</td>
<td>1-4</td>
</tr>
<tr>
<td>HDFS 498</td>
<td>Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
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<tr>
<td>ANTH 495</td>
<td>Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>PRLS 490</td>
<td>Recreation Management Internship (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>GGS 480</td>
<td>GGS Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>SPAN 490</td>
<td>Internship in Spanish</td>
<td>1-6</td>
</tr>
<tr>
<td>AVT 489</td>
<td>Internship in Art and Visual Technology</td>
<td>1-6</td>
</tr>
<tr>
<td>USST 490</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>WMST 490</td>
<td>Internship in Women and Gender Studies</td>
<td>1-3</td>
</tr>
<tr>
<td>CDS 491</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>HHS 480</td>
<td>Research Internship in Health and Human Services</td>
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<tr>
<td>CRIM 480</td>
<td>Internship</td>
<td>6-12</td>
</tr>
<tr>
<td>HIST 399</td>
<td>Internship</td>
<td>1-9</td>
</tr>
<tr>
<td>RHBS 490</td>
<td>RS: Clinical Research Internship</td>
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<tr>
<td>KINE 341</td>
<td>Kinesiology Internship I</td>
<td>3</td>
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<tr>
<td>MUSI 495</td>
<td>Internship in Music Education (Mason Core) (p. 142)</td>
<td>6-12</td>
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<td>KINE 441</td>
<td>Kinesiology Internship II</td>
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<tr>
<td>PHYS 409</td>
<td>Physics Internship</td>
<td>3</td>
</tr>
<tr>
<td>HHS 492</td>
<td>RS: Internship in Clinical Research</td>
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<tr>
<td>SOCI 416</td>
<td>Internship in Sociology I</td>
<td>3-6</td>
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<tr>
<td>FRLN 490</td>
<td>Internship in Foreign Language Studies</td>
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<tr>
<td>ENGR 395</td>
<td>Engineering Internship</td>
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<tr>
<td>GEOG 480</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>CVPA 489</td>
<td>Field Experience in the Arts</td>
<td>3-6</td>
</tr>
<tr>
<td>GLOA 495</td>
<td>Global Experiential Learning</td>
<td>1-18</td>
</tr>
<tr>
<td>KINE 330</td>
<td>Seminar in Kinesiology</td>
<td>3</td>
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<tr>
<td>ECED 490</td>
<td>Internship in Early Childhood Education</td>
<td>3-6</td>
</tr>
<tr>
<td>FRSC 406</td>
<td>Forensic Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

1. The School of Business natural science requirement must be fulfilled by completing two 4-credit laboratory sciences.
2. School of Business students required to complete 8 credits of natural science by completing two 4-credit laboratory sciences.

Note:

- Remaining Mason Core requirements are fulfilled with major course work.

### Business Foundations

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 203</td>
<td>Survey of Accounting (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 204</td>
<td>Honors Survey of Accounting</td>
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</tr>
<tr>
<td>BUS 100</td>
<td>Business and Society (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 103</td>
<td>Develop Professional Skills I: Foundational Elements</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200</td>
<td>Global Environment of Business (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 210</td>
<td>Business Analytics I</td>
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</tbody>
</table>
BUS 310 Business Analytics II 3
ECON 103 Contemporary Microeconomic Principles (Mason Core) (p. 142) 3
ECON 104 Contemporary Macroeconomic Principles (Mason Core) (p. 142) 3
Select one of the following: 1 3-4
MATH 108 Introductory Calculus with Business Applications (Mason Core) (p. 142)
MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142)
MATH 114 Analytic Geometry and Calculus II
HNRT 225 Applied Calculus
Total Credits 27-28

1 MATH 108 Introductory Calculus with Business Applications (Mason Core) (p. 142) or MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142) satisfies the Mason Core quantitative reasoning requirement.

Business Core
A grade of C or higher is required in each of the School of Business core courses listed below. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment of Business, BUS 303 Develop Professional Skills II: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing and OM 303 Operations Management. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare a business minor. For more information about this, see AP 5.2.4 Termination from the Major (p. 88).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 330</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 303</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142) (Satisfies Mason Core Information Technology requirement)</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 303</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>OM 303</td>
<td>Operations Management</td>
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<tr>
<td>Total Credits</td>
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<td>24</td>
</tr>
</tbody>
</table>

Electives
Students may select any courses from the following list to fulfill the elective requirement as well as any other 300-400 level FNAN courses (except FNAN 300 Personal Financial Management & FNAN 301 & FNAN 303 Financial Management).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FNAN 311</td>
<td>Principles of Investment (If not taken as a required course)</td>
<td>9</td>
</tr>
<tr>
<td>FNAN 321</td>
<td>Financial Institutions (If not taken as a required course)</td>
<td></td>
</tr>
<tr>
<td>FNAN 341</td>
<td>Introduction to Firm Valuation (If not taken as a required course)</td>
<td></td>
</tr>
<tr>
<td>FNAN 351</td>
<td>Principles of Real Estate</td>
<td></td>
</tr>
<tr>
<td>FNAN 401</td>
<td>Advanced Financial Management (If not taken as a required course)</td>
<td></td>
</tr>
<tr>
<td>FNAN 411</td>
<td>Investment Analysis and Portfolio Management</td>
<td></td>
</tr>
<tr>
<td>FNAN 412</td>
<td>Futures and Options Markets</td>
<td></td>
</tr>
<tr>
<td>FNAN 421</td>
<td>Money and Capital Markets</td>
<td></td>
</tr>
<tr>
<td>FNAN 430</td>
<td>Empirical Methods in Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 431</td>
<td>Venture Capital and Private Financing of Startups</td>
<td></td>
</tr>
<tr>
<td>FNAN 432</td>
<td>Fixed-Income Securities</td>
<td></td>
</tr>
<tr>
<td>FNAN 436</td>
<td>Probability Methods for Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 440</td>
<td>International Financial Management</td>
<td></td>
</tr>
<tr>
<td>FNAN 451</td>
<td>Real Estate</td>
<td></td>
</tr>
<tr>
<td>FNAN 454</td>
<td>Real Estate Development</td>
<td></td>
</tr>
<tr>
<td>FNAN 462</td>
<td>Honors Seminar in Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 477</td>
<td>Student Managed Investment Fund</td>
<td></td>
</tr>
<tr>
<td>FNAN 491</td>
<td>Special Topics in Finance</td>
<td></td>
</tr>
</tbody>
</table>

1 Completion of FNAN 303 Financial Management with a grade of B- or higher is a required prerequisite for FNAN 311 Principles of Investment, FNAN 321 Financial Institutions, FNAN 341 Introduction to Firm Valuation, FNAN 401 Advanced Financial Management and FNAN 440 International Financial Management.
Capstone

Students must successfully complete all Business Core courses to be eligible to enroll in BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 498</td>
<td>Capstone Course: Advanced Business Models (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Second Majors in Finance

Students declaring a second major in Finance must complete the four required courses and two elective courses for the major.

Finance Minor

Banner Code: FNAN

Academic Advising
Phone: 703-993-1880
Email: masonbus@gmu.edu

Administration
• David Gallay, Director of Minor Programs

Admissions & Policies

Policies

For policies governing all minors, see AP 5.3.4 Minors (p. 90). The School of Business residency requirement for this minor supersedes the university requirement: at least nine credits must be earned at Mason.

At least eight credits of the minor courses must be unique to the Finance Minor and not applied toward any other major, minor, or concentration. Students must achieve a grade of C or better in each course that is applied toward the minor.

Requirements

Minor Requirements

Total credits: 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 311</td>
<td>Principles of Investment</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 321</td>
<td>Financial Institutions</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 341</td>
<td>Introduction to Firm Valuation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 306</td>
<td>Intermediate Microeconomics</td>
<td></td>
</tr>
<tr>
<td>ECON 310</td>
<td>Money and Banking</td>
<td></td>
</tr>
<tr>
<td>ECON 330</td>
<td>Public Finance</td>
<td></td>
</tr>
<tr>
<td>ECON 420</td>
<td>International Money and Finance</td>
<td></td>
</tr>
<tr>
<td>ECON 421</td>
<td>Financial Economics</td>
<td></td>
</tr>
<tr>
<td>FNAN 401</td>
<td>Advanced Financial Management</td>
<td></td>
</tr>
<tr>
<td>FNAN 411</td>
<td>Investment Analysis and Portfolio Management</td>
<td></td>
</tr>
<tr>
<td>FNAN 412</td>
<td>Futures and Options Markets</td>
<td></td>
</tr>
<tr>
<td>FNAN 421</td>
<td>Money and Capital Markets</td>
<td></td>
</tr>
<tr>
<td>FNAN 430</td>
<td>Empirical Methods in Finance</td>
<td></td>
</tr>
<tr>
<td>FNAN 432</td>
<td>Fixed-Income Securities</td>
<td></td>
</tr>
<tr>
<td>FNAN 440</td>
<td>International Financial Management</td>
<td></td>
</tr>
<tr>
<td>Select one course from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FNAN 436</td>
<td>Probability Methods for Finance</td>
<td></td>
</tr>
<tr>
<td>SYST 488</td>
<td>Financial Systems Engineering</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Forensic Accounting Graduate Certificate

Banner Code: BU-CERG-FACC

Graduate Program Office
Phone: 703-993-8006
Email: sbusgrad@gmu.edu

Admissions & Policies

Admissions

Eligibility Requirements

All students registering for School of Business graduate courses must have graduate standing. Non-degree student status is not available. Full eligibility and admission requirements can be viewed at the school’s website (http://business.gmu.edu/masters-in-accounting/forensic-accounting).

Policies

For policies governing all graduate certificates, see AP 6.8 Requirements for Graduate Certificates (p. 94).

Students are responsible for familiarization and compliance with the university’s Graduate Policies (p. 90) contained in this catalog. A maximum of 3 graduate credits taken at another institution can be transferred to the graduate certificate. The time limit for completion
is four years from the date of admission to the graduate certificate. Students must have a minimum GPA of 3.0 to complete the certificate.

**Certificate Requirements**

Total credits: 12

This certificate may be pursued on a part-time basis only.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 737</td>
<td>Fraud and the Law</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 738</td>
<td>Advanced Topics in Fraud</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 636</td>
<td>Fraud Examination</td>
<td>3</td>
</tr>
<tr>
<td>or CFRS 770</td>
<td>Fraud and Forensics in Accounting</td>
<td></td>
</tr>
</tbody>
</table>

**Elective**

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 701</td>
<td>Business Valuation</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 742</td>
<td>Governance and Ethics</td>
<td></td>
</tr>
<tr>
<td>CFRS 500</td>
<td>Introduction to Forensic Technology and Analysis</td>
<td></td>
</tr>
<tr>
<td>CFRS 510</td>
<td>Digital Forensics Analysis</td>
<td></td>
</tr>
<tr>
<td>CFRS 660</td>
<td>Network Forensics</td>
<td></td>
</tr>
<tr>
<td>CFRS 661</td>
<td>Digital Media Forensics</td>
<td></td>
</tr>
</tbody>
</table>

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECM 603</td>
<td>IT Leadership and the Global CIO</td>
<td>1</td>
</tr>
<tr>
<td>TECM 620</td>
<td>Economics of Global Technology Management</td>
<td>1</td>
</tr>
<tr>
<td>TECM 702</td>
<td>Building High Performance Global Teams</td>
<td>2</td>
</tr>
<tr>
<td>TECM 752</td>
<td>Global Technology Management</td>
<td>3</td>
</tr>
<tr>
<td>TECM 753</td>
<td>Global Leadership Perspectives</td>
<td>2</td>
</tr>
<tr>
<td>TECM 761</td>
<td>Global IT Leadership Applied Project</td>
<td>3</td>
</tr>
</tbody>
</table>

**Global IT Leadership Graduate Certificate (pending SCHEV approval)**

Banner Code: BU-CERG-GITL

**Admissions & Policies**

*Note: as of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.*

**Government Accounting Graduate Certificate**

Banner Code: BU-CERG-GACT

**Admissions & Policies**

*Note: as of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.*

**Admissions**

**Application Requirements**

Applicants must have a U.S. equivalent bachelor degree from an accredited college or university and have completed Intermediate Accounting (ACCT 331 Financial Accounting II or Mason equivalent).
Eligibility Requirements
All students registering for School of Business graduate courses must have graduate standing. Non-degree student status is not available. Full eligibility and admission requirements can be viewed at the school’s website (http://business.gmu.edu/masters-in-accounting/forensic-accounting).

Policies
For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (p. 94).

Students are responsible for familiarization and compliance with the university’s Graduate Policies (p. 90) contained in this catalog. A maximum of 3 graduate credits taken at another institution can be transferred to the graduate certificate. The time limit for completion is four years from the date of admission to the graduate certificate. Students must have a minimum GPA of 3.0 to complete the certificate.

Certificate Requirements
Total credits: 12
This certificate may be pursued on a full-or part-time basis.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 672</td>
<td>Governmental and Nonprofit Accounting</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 792</td>
<td>Seminar in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 611</td>
<td>Advanced Issues in Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 742</td>
<td>Governance and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 772</td>
<td>Federal Accounting and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

1 Students who completed ACCT 672 Governmental and Nonprofit Accounting or equivalent in their undergraduate or other graduate program must take ACCT 792 Seminar in Accounting instead.

Admissions & Policies

Policies

Academic Policies
Students should become familiar with the university’s general academic policies (p. 77) in addition to those specific to each academic unit.

E-mail
George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school/department/program and other administrative units, and check it regularly for important information.

Study Elsewhere Policy
A student who has matriculated at Mason may transfer a limited number of hours (9 for undergraduates, 6 for graduates) of coursework in School of Business disciplines from another institution (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education). Students are permitted to take courses elsewhere under unusual circumstances—these circumstances do not include scheduling or commuting convenience, or financial (lower cost) reasons.

Special instructions for School of Business students: courses that are attempted at a two-year institution may not be used to fulfill upper-level requirements. Any course that a student wished to transfer to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

For additional information, see AP1.4.2 Permission to Study Elsewhere (p. 79).

Undergraduate Internship Policy
The School of Business recognizes the importance of experiential education in both learning to apply theory to practice and positioning students for success in their careers. Because the School of Business is committed to supporting students’ professional success, the School requires that all student internships for credit be registered with the School of Business as one of the following: ACCT 492, BUS 492, FNAN 492 (https://catalog.gmu.edu/search/?scontext=courses&search=FNAN+492), MGMT 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MGMT+492), MIS 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MIS+492), MKTG 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MKTG+492).
Termination from the Major

A grade of C or higher is required in each of the School of Business listed core courses. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment of Business, BUS 303 Develop Professional Skills II: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing OM 303 Operations Management and OSCM 303 Operations Management. Once a student has attempted a School of Business Core or Accounting major course twice unsuccessfully, they must meet with an academic advisor in order to receive an override to register for the third attempt. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare the business minor only, and are not able to declare any other School of Business minors. Student are limited to three attempts at ACCT 330. Any student who is unable to achieve a C or higher in ACCT 330 on the third attempt will not be able to pursue a Major in Accounting or Finance. For more information about this, see AP 5.2.4

Termination from the Major (p. 88).

University Consortium

Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstance. All consortium registration requests must be submitted to the dean's office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Any consortium course that a student wishes to register for to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Non-Business School Student Credit Limitation

Enrolled undergraduate students who are not declared in a School of Business major are limited to 9 credits of upper-level business coursework within the School of Business. This policy applies to any student who is declared in another major or program at Mason. This policy does not apply to students who have declared a School of Business minor and are earning required credit toward that minor.

Undergraduate Course Overload Policy

The School of Business recommends that undergraduate students attempt no more than 18 credits in an academic semester and no more than 14 credits in a summer term. Students wishing to attempt more than 18 credits must submit a Permission to Overload form to their academic advisor.

To be eligible for a course overload, a student must fulfill all of the following criteria:

- At least a 3.0 cumulative GPA at Mason
- Have completed all courses successfully in his/her previous semester with no Fs or incompletes (IN)
- Complete the Permission to Overload form and obtain an academic advisor's signature

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

Transfer Credit Expiration Policy

Transfer credit is not awarded for any business (management, marketing, finance, accounting, management information systems, operations management, foundations, core, or any other School of Business course), courses completed more than ten years prior to Mason enrollment. This includes any older courses completed at RBC or the VCCS.

Appeals Process

The School of Business strives to maintain policies and procedures that are consistent with those of the University, as well as in the best interest of our students. If you have any questions concerning a particular policy or procedure, contact the Office of Student Success & Academic Services, Room 008 of Enterprise Hall (703-993-1880) or visit the website (http://business.gmu.edu).

Courses Excluded from any School of Business BS Degree

Transfer credit is not awarded for any School of Business courses completed more than ten years prior to Mason enrollment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 401</td>
<td>Internship Reflection</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 394</td>
<td>Ethnomusicology Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>COMM 450</td>
<td>Internship in Communication</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 450</td>
<td>Internship in Film and Video Studies</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 480</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 496</td>
<td>Internship</td>
<td>2-6</td>
</tr>
<tr>
<td>CONF 370</td>
<td>Internship Field Experience</td>
<td>1-9</td>
</tr>
<tr>
<td>PHIL 306</td>
<td>Philosophy Internship</td>
<td>3</td>
</tr>
<tr>
<td>RELI 426</td>
<td>Religious Studies Internship</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 393</td>
<td>Art History Internships</td>
<td>3-6</td>
</tr>
<tr>
<td>GCH 498</td>
<td>Global and Community Health Internship</td>
<td>3,6</td>
</tr>
<tr>
<td>GAME 491</td>
<td>Internship</td>
<td>3-4</td>
</tr>
<tr>
<td>HAP 498</td>
<td>Health Administration Internship (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>HDFS 499</td>
<td>Advanced Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td>1-3</td>
</tr>
</tbody>
</table>
Requirements

Degree Requirements

Total credits: 120

School of Business students pursuing a BS degree must complete a minimum of 120 credits, including the Mason Core requirements, business foundations, business core and major requirements. In addition, the following requirements must be met:

- A minimum of 45 credits at the 300- or 400-level.
- A minimum of 30 credits of School of Business core and major courses at Mason.
- At least 9 credits required for the specific major and BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142) taken at Mason.
- A grade of C or higher earned in the business foundations, business core and major requirements.

Students should carefully examine prerequisites for School of Business courses. Students may be removed from a course if they enroll without having fulfilled the prerequisites.

Mason Core Requirements

School of Business students must complete the Mason Core requirements, plus 1 additional credit of natural science (the School of Business natural science requirement must be fulfilled by completing two 4-credit laboratory sciences). Some Mason Core requirements may already be fulfilled by the major requirements listed below. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT</td>
<td>Survey of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 204</td>
<td>Honors Survey of Accounting</td>
<td></td>
</tr>
<tr>
<td>BUS 100</td>
<td>Business and Society (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Business Foundations

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 459</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>MUSI 395</td>
<td>Teaching Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>INTS 390</td>
<td>International Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>INTS 490</td>
<td>Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>ECON 498</td>
<td>Internship</td>
<td>3-6</td>
</tr>
<tr>
<td>ASTR 409</td>
<td>Astronomy Internship</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 490</td>
<td>Internship (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>TOUR 490</td>
<td>Hospitality, Tourism, and Events Management Internship (Mason Core) (p. 142)</td>
<td>12</td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 490</td>
<td>Internship in Chinese Studies</td>
<td>1-9</td>
</tr>
<tr>
<td>CONS 498</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>THR 455</td>
<td>Theater Education Internship</td>
<td>6-12</td>
</tr>
<tr>
<td>AFAM 490</td>
<td>Internship</td>
<td>2-6</td>
</tr>
<tr>
<td>KINE 490</td>
<td>Kinesiology Internship II (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>AMGT 489</td>
<td>Internship in Arts Management</td>
<td>1-4</td>
</tr>
<tr>
<td>HDFS 498</td>
<td>Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 495</td>
<td>Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>PRLS 490</td>
<td>Recreation Management Internship</td>
<td>12</td>
</tr>
<tr>
<td>GGS 480</td>
<td>GGS Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>SPAN 490</td>
<td>Internship in Spanish</td>
<td>1-6</td>
</tr>
<tr>
<td>AVT 489</td>
<td>Internship in Art and Visual Technology</td>
<td>1-6</td>
</tr>
<tr>
<td>USST 490</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>WMST 400</td>
<td>Internship in Women and Gender Studies</td>
<td>1-3</td>
</tr>
<tr>
<td>CDS 491</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>HHS 480</td>
<td>Research Internship in Health and Human Services</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 480</td>
<td>Internship</td>
<td>6-12</td>
</tr>
<tr>
<td>HIST 399</td>
<td>Internship</td>
<td>1-9</td>
</tr>
<tr>
<td>RHBS 490</td>
<td>RS: Clinical Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>KINE 341</td>
<td>Seminar in Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 409</td>
<td>Physics Internship</td>
<td>3</td>
</tr>
<tr>
<td>HHS 492</td>
<td>RS: Internship in Clinical Research</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 416</td>
<td>Internship in Sociology I</td>
<td>3-6</td>
</tr>
<tr>
<td>FRLN 490</td>
<td>Internship in Foreign Language Studies</td>
<td>1-6</td>
</tr>
<tr>
<td>ENGR 395</td>
<td>Engineering Internship</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 480</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>AVT 453</td>
<td>Professional Practices</td>
<td>3</td>
</tr>
<tr>
<td>CVPA 489</td>
<td>Field Experience in the Arts</td>
<td>3-6</td>
</tr>
<tr>
<td>GLOA 495</td>
<td>Global Experiential Learning</td>
<td>1-18</td>
</tr>
<tr>
<td>KINE 330</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>ECED 490</td>
<td>Internship in Early Childhood Education</td>
<td>3-6</td>
</tr>
<tr>
<td>FRSC 406</td>
<td>Forensic Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Remaining Mason Core (p. 142) requirements are fulfilled with major coursework.
BUS 103  Develop Professional Skills I: Foundational Elements  3  
BUS 200  Global Environment of Business (Mason Core) (p. 142)  3  
BUS 210  Business Analytics I  3  
BUS 310  Business Analytics II  3  
ECON 103  Contemporary Microeconomic Principles (Mason Core) (p. 142)  3  
ECON 104  Contemporary Macroeconomic Principles (Mason Core) (p. 142)  3  

Select one from the following: 

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
</tr>
<tr>
<td>HNRT 225</td>
<td>Applied Calculus</td>
</tr>
</tbody>
</table>

Total Credits  27-28

1  MATH 108 Introductory Calculus with Business Applications (Mason Core) (p. 142) or MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142) satisfies the Mason Core quantitative reasoning requirement.

**Business Core**

A grade of C or higher is required in each of the School of Business listed core courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 303</td>
<td>Accounting for Decision Making 1</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 330</td>
<td>Financial Accounting I</td>
<td></td>
</tr>
<tr>
<td>BULE 303</td>
<td>Legal Environment of Business 1</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements 1</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 303</td>
<td>Financial Management 1</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 303</td>
<td>Principles of Management 1</td>
<td>3</td>
</tr>
<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142) 1</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 303</td>
<td>Principles of Marketing 1</td>
<td>3</td>
</tr>
<tr>
<td>OM 303</td>
<td>Operations Management 1</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  24

1  Students will not be permitted to make more than three attempts to achieve a C or higher in this course. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare a business minor. For more information about this, see AP.5.2.4 Termination from the Major (p. 88).

**General Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 18-19 credits 1</td>
<td></td>
<td>18-19</td>
</tr>
</tbody>
</table>

Total Credits  18-19

1  General electives may be selected from any University or School of Business course, except courses designated for the Business minor (MBUS). Credits awarded as Associate Degree Elective Credit (ADEC) as part of a student’s transfer evaluation are also excluded from general electives.

**Major Requirements in Information Systems and Operations Management**

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIS 310</td>
<td>Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>MIS 330</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>OM 493</td>
<td>Management of Technology Projects</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Select 12 credits from the following list to fulfill the elective requirement as well as any other 300-400 level MIS or OM courses 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIS 302</td>
<td>Introduction to Programming for Business Applications 2</td>
<td></td>
</tr>
<tr>
<td>MIS 320</td>
<td>Networks and Security</td>
<td></td>
</tr>
<tr>
<td>MIS 410</td>
<td>Advanced Database Systems</td>
<td></td>
</tr>
<tr>
<td>MIS 412</td>
<td>E-Business Systems Development</td>
<td></td>
</tr>
<tr>
<td>MIS 415</td>
<td>Information Systems Audit and Control</td>
<td></td>
</tr>
<tr>
<td>MIS 420</td>
<td>Information Security and Assurance</td>
<td></td>
</tr>
<tr>
<td>MIS 430</td>
<td>Data Warehousing</td>
<td></td>
</tr>
<tr>
<td>MIS 431</td>
<td>Data Mining for Business Applications</td>
<td></td>
</tr>
<tr>
<td>MIS 432</td>
<td>Advanced Data Mining</td>
<td></td>
</tr>
<tr>
<td>MIS 462</td>
<td>Honors Seminar in Management Information Systems (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>MIS 491</td>
<td>Seminar in Management Information Systems</td>
<td></td>
</tr>
<tr>
<td>MIS 499</td>
<td>Independent Study in Management Information Systems</td>
<td></td>
</tr>
<tr>
<td>OM 320</td>
<td>Supply Chain Management in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>OM 352</td>
<td>Management Science</td>
<td></td>
</tr>
<tr>
<td>OM 435</td>
<td>Business Process Analysis and Simulation</td>
<td></td>
</tr>
<tr>
<td>OM 452</td>
<td>Business Forecasting</td>
<td></td>
</tr>
<tr>
<td>OM 456</td>
<td>Quality Management</td>
<td></td>
</tr>
<tr>
<td>OM 462</td>
<td>Honors Seminar in Operations Management (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>OM 499</td>
<td>Independent Study in Operations Management</td>
<td></td>
</tr>
<tr>
<td>BUS 492</td>
<td>Internship in Business</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits  21

1  Excluding MIS 301 or MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142) or OM 301 or OM 303 Operations Management

2  It is strongly recommended that students planning to major in ISOM take MIS 302 Introduction to Programming for Business Applications as part of their program.
Optional Concentrations
Students have considerable flexibility in their choice of electives and may choose from two concentrations of study: one in Operations and Supply Chain Management (OSCM) and the other in Management Information Systems (MIS). Students are strongly urged to discuss their choice of electives and programs of study with their academic advisor and an ISOM faculty member. Concentrations must be declared prior to a student filing an intent to graduate.

Concentration in Operations and Supply Chain Management (OSCM)
If a student has taken any four of the following electives, beyond the ISOM required courses, s/he can declare an OSCM concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM 320</td>
<td>Supply Chain Management in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>OM 352</td>
<td>Management Science</td>
<td>3</td>
</tr>
<tr>
<td>OM 435</td>
<td>Business Process Analysis and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>OM 452</td>
<td>Business Forecasting</td>
<td>3</td>
</tr>
<tr>
<td>OM 456</td>
<td>Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>OM 462</td>
<td>Honors Seminar in Operations Management (Topic Varies)</td>
<td>3</td>
</tr>
<tr>
<td>OM 491</td>
<td>Seminar in Operations Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in Management Information Systems (MIS)
If a student has taken any four of the following electives, beyond the ISOM required courses, he/she can declare an MIS concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIS 302</td>
<td>Introduction to Programming for Business Applications</td>
<td>3</td>
</tr>
<tr>
<td>MIS 320</td>
<td>Networks and Security</td>
<td>3</td>
</tr>
<tr>
<td>MIS 410</td>
<td>Advanced Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>MIS 412</td>
<td>E-Business Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>MIS 415</td>
<td>Information Systems Audit and Control</td>
<td>3</td>
</tr>
<tr>
<td>MIS 420</td>
<td>Information Security and Assurance</td>
<td>3</td>
</tr>
<tr>
<td>MIS 430</td>
<td>Data Warehousing</td>
<td>3</td>
</tr>
<tr>
<td>MIS 431</td>
<td>Data Mining for Business Applications</td>
<td>3</td>
</tr>
<tr>
<td>MIS 432</td>
<td>Advanced Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>MIS 462</td>
<td>Honors Seminar in Management Information Systems (Topic Varies)</td>
<td>3</td>
</tr>
<tr>
<td>MIS 491</td>
<td>Seminar in Management Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Capstone
Students must successfully complete all Business Core courses to be eligible to enroll in BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 498</td>
<td>Capstone Course: Advanced Business Models (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Second Majors in Information Systems and Operations Management
Students declaring a second major in Information Systems and Operations Management must complete the three required courses and three elective courses for the major.

Honors

Honors in the Major
The School of Business Information Systems and Operations Management Honors Program provides highly motivated students majoring in ISOM with an enriched academic experience integrating curricular, co-curricular and extra-curricular development. Admission to the Honors Program is by invitation only. Students who have been found responsible for an Honor Code violation are not eligible for the program.

Admission Requirements
- Minimum 3.0 cumulative GPA and 3.5 GPA in the ISOM major.
- Two academic/professional references.
- Once admitted to the program, students with a cumulative GPA below 3.0 will be dropped from the program.

Curricular Requirements
- MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142) earning a grade of A- or better.
- OM 303 Operations Management earning a grade of A- or better.
- A grade of B or better in Business Core curriculum courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 303</td>
<td>Accounting for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 330</td>
<td>Financial Accounting I</td>
<td></td>
</tr>
<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 303</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 303</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>
- One of the two ISOM Honors seminars: MIS 462 Honors Seminar in Management Information Systems (Topic Varies) or OM 462 Honors Seminar in Operations Management (Topic Varies).

Extra-Curricular Requirements
- The student must show a high degree of engagement in MISOMA or another School of Business student organization, preferably in a leadership role.

Requirements for the Honors Designation:
- Honors students must graduate with a minimum 3.00 cumulative GPA and 3.50 GPA in the major.
- Honors students must meet all curricular and extra-curricular requirements mentioned previously at graduation.

International Business Minor
Banner Code: IB

Academic Advising
The minor in International Business for School of Business majors provides an introduction for those students interested in learning more about elements of business unique to international organizations or in pursuing a career in international business. With a strong set of business skills developed through the core undergraduate curriculum and their majors, students in the International Business Minor can further develop their skills in managing and communicating across different cultures, improve their understanding of how specific business disciplines vary in an international setting, and cultivate an appreciation for international monetary issues.

Admissions & Policies

Policies

Students must complete five courses for a total of 15 credits. At least eight credits of the minor courses must be unique to the International Business Minor and not applied toward any other major, minor, or concentration. Students must achieve a grade of C or better in each course that is applied to the minor.

For policies governing all minors, see AP.5.3.4 Minors (p. 90). The School of Business residency requirement for this minor supersedes the university requirement: at least nine credits must be earned at Mason.

Requirements

Minor Requirements
Total credits: 15

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 461</td>
<td>Cross Cultural and Global Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

Select four electives from the following: ¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 370</td>
<td>International Accounting</td>
<td></td>
</tr>
<tr>
<td>FNAN 440</td>
<td>International Financial Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 441</td>
<td>International Strategy</td>
<td></td>
</tr>
<tr>
<td>MKTG 407</td>
<td>Global Marketing</td>
<td></td>
</tr>
<tr>
<td>OM 320</td>
<td>Supply Chain Management in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>ECON 360</td>
<td>Economics of Developing Areas (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 362</td>
<td>African Economic Development (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

¹ A maximum of one ECON or GOVT course may count towards the minor. The other three electives must be School of Business coursework.

Co-Curricular Requirement

Students must complete one of the following in addition to the curriculum requirements:

Global Experience
- Global residency course;
- An international internship abroad;
- A domestic internship with significant international experience;
- An approved study abroad program; or
- Study at a Mason campus or a Mason joint program overseas

OR

Foreign Language
- One language study course; or
- A course taught in foreign literature when taught in a foreign language

IT Strategy and Digital Transformation Graduate Certificate (pending SCHEV approval)

Banner Code: BU-CERG-ITDT

Graduate Program Office
Phone: 703-993-8006
Email: sbusgrad@gmu.edu

Admissions & Policies

Admissions

Application requirements include:
- Application
- Bachelor’s degree transcript
- Resume
- Goal statement
• Interview
• Minimum of 3-years of professional work experience

All students registering for School of Business graduate courses must have graduate standing. Non-degree student status is not available. Full eligibility and admission requirements can be viewed at the school's website (http://business.gmu.edu/masters-in-accounting/forensic-accounting).

Requirements

Note: as of catalog publication in April, the program described below has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia for consideration as a new degree program. The university cannot accept applications or enroll students in this program until SCHEV approval has been granted.

Certificate Requirements

Total credits: 12

This certificate may be pursued on a full-or part-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECM 611</td>
<td>Leadership and Change Management</td>
<td>2</td>
</tr>
<tr>
<td>TECM 641</td>
<td>Negotiation and Conflict Management</td>
<td>1</td>
</tr>
<tr>
<td>TECM 711</td>
<td>Deriving Strategic Value from IT Investments</td>
<td>2</td>
</tr>
<tr>
<td>TECM 720</td>
<td>Competitive Strategy in Technology Industries</td>
<td>2</td>
</tr>
<tr>
<td>TECM 721</td>
<td>Digital Transformation</td>
<td>2</td>
</tr>
<tr>
<td>TECM 762</td>
<td>IT Strategy and Digital Transformation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Management of Secure Information Systems, MS (School of Business)

Banner Code: BU-MS-MSIS

Graduate Program Office

Phone: 703-993-8006
Email: sbusgrad@gmu.edu

Administration

• Candace Deans, Director, MS in Technology Management Program & Co-Director, MS in Management Secure Information Systems Program

The degree, an interdisciplinary program offered by the Volgenau School of Engineering (p. 1011), the School of Business (p. 888), and the Schar School of Policy and Government (p. 961), prepares professionals for the challenges of modern computerized information systems that have become increasingly complex and vulnerable to cyber-attacks, resulting in a significant number of government regulations. Consequently, those responsible for the safe, secure, and efficient operation of such systems need to grasp their technical aspects and be familiar with both the principles of management and the public policy impact of regulatory and organizational decisions.

Admissions & Policies

Admissions

All students must have graduate standing. Non-degree student status is not available.

Full eligibility and admission requirements can be viewed online (http://business.gmu.edu/cyber-security-degree/admissions).

Requirements

Degree Requirements

Total credits: 36

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSEC 510</td>
<td>Foundations of Cyber Security</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 511</td>
<td>Security Practices in the Enterprise</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 520</td>
<td>Networking Principles</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 620</td>
<td>Networking Security</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 630</td>
<td>Secure Information System Governance, Regulation, and Compliance</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 641</td>
<td>Enterprise Security Threats</td>
<td>1</td>
</tr>
<tr>
<td>MSEC 642</td>
<td>Enterprise Security Technologies</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 650</td>
<td>Seminar: Enterprise Security Case Studies</td>
<td>1</td>
</tr>
<tr>
<td>PUBP 610</td>
<td>Organizations, Management, and Work: Theory and Practice</td>
<td>2</td>
</tr>
<tr>
<td>PUBP 611</td>
<td>Critical Infrastructure Protection in Theory, Policy and Practice</td>
<td>2</td>
</tr>
<tr>
<td>MSIS 611</td>
<td>Leadership and Change Management</td>
<td>2</td>
</tr>
<tr>
<td>MSIS 614</td>
<td>Financial and Cost Accounting</td>
<td>2</td>
</tr>
<tr>
<td>MSIS 620</td>
<td>Economics of Technology Management</td>
<td>2</td>
</tr>
<tr>
<td>MSIS 635</td>
<td>Decision Models and Methods</td>
<td>2</td>
</tr>
<tr>
<td>MSIS 643</td>
<td>Managerial Finance</td>
<td>2</td>
</tr>
<tr>
<td>MSIS 747</td>
<td>Enterprise Information Security Audit</td>
<td>2</td>
</tr>
<tr>
<td>MSIS 735</td>
<td>Capstone Project</td>
<td>3</td>
</tr>
<tr>
<td>or MSEC 720</td>
<td>Capstone Project in Management of Secure Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>MSIS 750</td>
<td>Global Practices in Security of Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>or MSEC 710</td>
<td>Global Residency</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 36

Management, BS

Banner Code: BU-BS-MGMT

Academic Advising

Phone: 703-993-1880
Email: masonbus@gmu.edu
Administration

- Masoud Yasai, Chair, Management Area and Director, Faculty Research

The Bachelor of Science in Management prepares students to take leadership, management, and entrepreneurial roles in the public and private sectors. Students learn such skills as strategic thinking, motivating and managing a nationally and internationally diverse workforce, building and leading team efforts, negotiating successfully, and instituting planned change in organizations.

Admissions & Policies

Policies

Academic Policies

Students should become familiar with the university’s general academic policies (p. 77) in addition to those specific to each academic unit.

E-mail

George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school/department/program and other administrative units, and check it regularly for important information.

Study Elsewhere Policy

A student who has matriculated at Mason may transfer a limited number of hours (9 for undergraduates, 6 for graduates) of coursework in School of Business disciplines from another institution (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education). Students are permitted to take courses elsewhere under unusual circumstances—these circumstances do not include scheduling or commuting convenience, or financial (lower cost) reasons.

Special instructions for School of Business students: courses that are attempted at a two-year institution may not be used to fulfill upper-level requirements. Any course that a student wished to transfer to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

For additional information, see AP.1.4.2 Permission to Study Elsewhere (p. 79).

Undergraduate Internship Policy

The School of Business recognizes the importance of experiential education in both learning to apply theory to practice and positioning students for success in their careers. Because the School of Business is committed to supporting students’ professional success, the School requires that all student internships for credit be registered with the School of Business as one of the following: ACCT 492, BUS 492, FNAN 492 (https://catalog.gmu.edu/search/?scontext=courses&search=FNAN+492), MGMT 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MGMT+492), MIS 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MIS+492), MKTG 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MKTG+492), OSCM 492 or OM 492 (https://catalog.gmu.edu/search/?scontext=courses&search=OM+492). Students may enroll in a maximum of 6 credits for these courses. For students in catalog years Fall 2016 and beyond, one internship course may apply to the major, and a second internship course would apply as elective credit. For students in catalog years prior to Fall 2016, a maximum of 6 credits of internship may apply to general electives.

Termination from the Major

A grade of C or higher is required in each of the School of Business listed core courses. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment of Business, BUS 303 Develop Professional Skills I: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing OM 303 Operations Management and OSCM 303 Operations Management.

Once a student has attempted a School of Business Core or Accounting major course twice unsuccessfully, they must meet with an academic advisor in order to receive an override to register for the third attempt. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare the business minor only, and are not able to declare any other School of Business minors. Students are limited to three attempts at ACCT 330. Any student who is unable to achieve a C or higher in ACCT 330 on the third attempt will not be able to pursue a Major in Accounting or Finance. For more information about this, see AP.5.2.4 Termination from the Major (p. 88).

University Consortium

Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstance. All consortium registration requests must be submitted to the dean’s office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Any consortium course that a student wishes to register for to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Non-Business School Student Credit Limitation

Enrolled undergraduate students who are not declared in a School of Business major are limited to 9 credits of upper-level business coursework within the School of Business. This policy applies to any student who is declared in another major or program at Mason. This policy does not apply to students who have declared a School of Business minor and are earning required credit toward that minor.

Undergraduate Course Overload Policy

The School of Business recommends that undergraduate students attempt no more than 18 credits in an academic semester and no more than 14 credits in a summer term. Students wishing to attempt more than 18 credits must submit a Permission to Overload form to their academic advisor.
To be eligible for a course overload, a student must fulfill all of the following criteria:

- At least a 3.0 cumulative GPA at Mason
- Have completed all courses successfully in his/her previous semester with no Fs or incompletes (IN)
- Complete the Permission to Overload form and obtain an academic advisor's signature

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

**Transfer Credit Expiration Policy**

Transfer credit is not awarded for any business (management, marketing, finance, accounting, management information systems, operations management, foundations, core, or any other School of Business course), courses completed more than ten years prior to Mason enrollment. This includes any older courses completed at RBC or the VCCS.

**Appeals Process**

The School of Business strives to maintain policies and procedures that are consistent with those of the University, as well as in the best interest of our students. If you have any questions concerning a particular policy or procedure, contact the Office of Student Success & Academic Services, Room 008 of Enterprise Hall (703-993-1880) or visit the website [http://business.gmu.edu](http://business.gmu.edu).

**Courses Excluded from any School of Business BS Degree**

Transfer credit is not awarded for any School of Business courses completed more than ten years prior to Mason enrollment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFS 499</td>
<td>Advanced Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>ENGH 495</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>MUSI 395</td>
<td>Teaching Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>INTS 390</td>
<td>International Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>INTS 490</td>
<td>Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>ECON 498</td>
<td>Internship</td>
<td>3-6</td>
</tr>
<tr>
<td>ASTR 409</td>
<td>Astronomy Internship</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 490</td>
<td>Internship (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>TOUR 490</td>
<td>Hospitality, Tourism, and Events Management Internship (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 490</td>
<td>Internship in Chinese Studies</td>
<td>1-9</td>
</tr>
<tr>
<td>CONS 498</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>THR 455</td>
<td>Theater Education Internship</td>
<td>6-12</td>
</tr>
<tr>
<td>AFAM 490</td>
<td>Internship</td>
<td>2-6</td>
</tr>
<tr>
<td>KINE 490</td>
<td>Kinesiology Internship III (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>AMGT 489</td>
<td>Internship in Arts Management</td>
<td>1-4</td>
</tr>
<tr>
<td>HDFS 498</td>
<td>Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 495</td>
<td>Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>PRLS 490</td>
<td>Recreation Management Internship (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>GGS 480</td>
<td>GGS Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>SPAN 490</td>
<td>Internship in Spanish</td>
<td>1-6</td>
</tr>
<tr>
<td>AVT 489</td>
<td>Internship in Art and Visual Technology</td>
<td>1-6</td>
</tr>
<tr>
<td>USST 490</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>WMST 400</td>
<td>Internship in Women and Gender Studies</td>
<td>1-3</td>
</tr>
<tr>
<td>CDS 491</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>HHS 480</td>
<td>Research Internship in Health and Human Services</td>
<td>3</td>
</tr>
<tr>
<td>CRIM 480</td>
<td>Internship</td>
<td>6-12</td>
</tr>
<tr>
<td>HIST 399</td>
<td>Internship</td>
<td>1-9</td>
</tr>
<tr>
<td>RHBS 490</td>
<td>RS: Clinical Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>KINE 341</td>
<td>Kinesiology Internship I</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 495</td>
<td>Internship in Music Education (Mason Core) (p. 142)</td>
<td>6-12</td>
</tr>
<tr>
<td>KINE 441</td>
<td>Kinesiology Internship II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 409</td>
<td>Physics Internship</td>
<td>3</td>
</tr>
<tr>
<td>HHS 492</td>
<td>RS: Internship in Clinical Research</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 416</td>
<td>Internship in Sociology I</td>
<td>3-6</td>
</tr>
<tr>
<td>FRLN 490</td>
<td>Internship in Foreign Language Studies</td>
<td>1-6</td>
</tr>
<tr>
<td>ENGR 395</td>
<td>Engineering Internship</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 480</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>AVT 453</td>
<td>Professional Practices</td>
<td>3</td>
</tr>
<tr>
<td>CVPA 489</td>
<td>Field Experience in the Arts</td>
<td>3-6</td>
</tr>
<tr>
<td>FRSC 406</td>
<td>Forensic Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

**Requirements**

**Degree Requirements**

Total credits: 120
School of Business students pursuing a BS degree must complete a minimum of 120 credits, including the Mason Core requirements, business foundations, business core and major requirements. In addition, the following requirements must be met:

- A minimum of 45 credits at the 300- or 400-level.
- A minimum of 30 credits of School of Business core and major courses at Mason.
- At least 9 credits required for the specific major and BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142) taken at Mason.
- A grade of C or higher earned in the business foundations, business core and major requirements.

Students should carefully examine prerequisites for School of Business courses. Students may be removed from a course if they enroll without having fulfilled the prerequisites.

**Mason Core Requirements**

School of Business students must complete the Mason Core (p. 142) requirements, plus 1 additional credit of natural science (the School of Business natural science requirement must be fulfilled by completing two 4-credit laboratory sciences). Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed below. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Core Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>26</td>
</tr>
</tbody>
</table>

1. School of Business students required to complete 8 credits of natural science by completing two 4-credit laboratory sciences.

**Business Core**

A grade of C or higher is required in each of the School of Business listed core courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 303</td>
<td>Accounting for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 330</td>
<td>Financial Accounting I</td>
<td></td>
</tr>
<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 303</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 303</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>OM 303</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>24</td>
</tr>
</tbody>
</table>

1. Students will not be permitted to make more than three attempts to achieve a C or higher in this course. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare a business minor. For more information about this, see AP.5.2.4 Termination from the Major (p. 88).

**General Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 18-19 credits</td>
<td>18-19</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>18-19</td>
</tr>
</tbody>
</table>

1. General electives may be selected from any University or School of Business course, except courses designated for the Business minor (MBUS). Credits awarded as Associate Degree Elective Credit (ADEC) as part of a student’s transfer evaluation are also excluded from general electives.
**Major Requirements in Management**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 313</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 321</td>
<td>Introduction to Human Resource Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives Courses**
Select 15 credits from the following list to fulfill the elective requirement as well as any other 300-400 level MGMT courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 412</td>
<td>Diversity in Organizations</td>
<td></td>
</tr>
<tr>
<td>MGMT 413</td>
<td>Organizational Development and Management Consulting</td>
<td></td>
</tr>
<tr>
<td>MGMT 421</td>
<td>Advanced Human Resource Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 431</td>
<td>The Legal Environment for Employee and Labor Relations</td>
<td></td>
</tr>
<tr>
<td>MGMT 441</td>
<td>International Strategy</td>
<td></td>
</tr>
<tr>
<td>MGMT 451</td>
<td>Introduction to Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>MGMT 452</td>
<td>Experiential Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>MGMT 453</td>
<td>Starting a Business</td>
<td></td>
</tr>
<tr>
<td>MGMT 454</td>
<td>Social Impact and Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>MGMT 461</td>
<td>Cross Cultural and Global Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 462</td>
<td>Honors Seminar in Management (Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>MGMT 463</td>
<td>Negotiations in Organizations</td>
<td></td>
</tr>
<tr>
<td>MGMT 464</td>
<td>Teamwork and Interpersonal Skills</td>
<td></td>
</tr>
<tr>
<td>MGMT 471</td>
<td>Competitive Strategy</td>
<td></td>
</tr>
<tr>
<td>MGMT 491</td>
<td>Current Topics in Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 499</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>BULE 402</td>
<td>Commercial Law</td>
<td></td>
</tr>
<tr>
<td>BUS 492</td>
<td>Internship in Business</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits** 21

*Except MGMT 303 Principles of Management or MGMT 313 Organizational Behavior*

**Capstone**

Students must successfully complete all Business Core courses to be eligible to enroll in BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 498</td>
<td>Capstone Course: Advanced Business Models (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 3

**Notes:**

Management majors may focus their careers in several areas. In selecting five elective courses, students may want to consider a likely career path. Recommended courses for three possible careers are provided below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 421</td>
<td>Advanced Human Resource Management</td>
<td></td>
</tr>
</tbody>
</table>

**Honors Seminar**

Students with a GPA of at least 3.00 are offered the opportunity to further distinguish their record by participating in MGMT 462 Honors Seminar in Management (Topic Varies), which addresses a key contemporary management issue in an intensive small group format.

To be eligible for enrollment in MGMT 462 Honors Seminar in Management (Topic Varies), students must be a declared management major, have a cumulative GPA of at least 3.00 with a minimum of 75 semester hours of course work, have a minimum GPA of 3.00 in course work completed for the management major, and be recommended by faculty. The class size of the Honors Seminar will be kept small. If the number of interested and qualified students exceeds the number of available spots, management area faculty will select the most qualified students to participate.

**Second Majors in Management**

Students declaring a second major in Management must complete the two required courses and four elective courses for the major.

**Honors**

**Honors in the Major**

The Management Honors Program in the School of Business provides highly motivated students majoring in management with an enriched academic experience integrating curricular, co-curricular and extra-curricular development. Admission to the Honors Program is by invitation only. Students who have been found responsible for an Honor Code violation are not eligible for the program.

**Admission Requirements**

- Minimum 3.0 cumulative GPA and 3.5 GPA in the major
- Submission of a personal statement/essay (topic to be determined)
- Two academic/professional references
- Once admitted to the program, students with a cumulative GPA below a 3.0 will be dropped from the program.

**Curricular Requirements**

- MGMT 303 Principles of Management earning a grade of A- or better.
- A grade of B or better in Business Core curriculum courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 303</td>
<td>Accounting for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 330</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
</tbody>
</table>
BULE 303 Legal Environment of Business 3
BUS 303 Develop Professional Skills II: Advanced Elements 3
FNAN 303 Financial Management 3
MKTG 303 Principles of Marketing 3
MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142) 3
OM 303 Operations Management 3

Co-Curricular or Work Experience Requirements
The student must complete ONE of the following in addition to the curriculum requirements:

• MGMT 462 Honors Seminar in Management (Topic Varies) (Honors seminar traditionally offered each Spring.)
• Study abroad (e.g., Aachen Dual Degree, Oxford Honors, China, South America)
• Internship (Internships where no credit is earned also qualify, if approved by the Management Honors Program administrator.)
• Research paper/Thesis as an independent study (MGMT 499 Independent Study) course (e.g., faculty research, Mason undergraduate apprentice program, QEP)

Extra-Curricular Requirements
The student must show a high degree of engagement in a School of Business student organization, or other on-campus student organization, preferably in a leadership role.

Requirements for students to obtain the honors designation:

• Honors students must graduate with a minimum 3.0 cumulative GPA and 3.5 GPA in the MGMT major.
• Honors students must meet all curricular, co-curricular, and extra-curricular requirements mentioned above at graduation.

Management, MS
Banner Code: BU-MS-MGMT

Graduate Program Office
Phone: 703-993-2136
Email: smgnt@gmu.edu

Administration
• Victoria Grady, Director, MS in Management Program

The program prepares recent graduates of non-business majors for success in business fields. The program offers the fundamentals of business management in a global environment and is composed of the core discipline areas common to all business graduate programs that are accredited by the Association to Advance Collegiate Schools of Business (AACSBB). It is a full time, daytime program. Students will enter as a cohort and complete all degree requirements within 11 months.

Admissions & Policies

Admissions
Admissions and Eligibility Requirements
All students registering for School of Business graduate courses must have graduate standing. Non degree student status is not available. Admission to the Master of Science in Management is contingent on applicants having completed an undergraduate degree program within 24 months prior to when they would enroll in the program.

Full eligibility and admission requirements can be viewed at our website. (http://business.gmu.edu/masters-in-management/admissions)

Policies
For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Requirements

Degree Requirements
Total credits: 36

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGT 603</td>
<td>Economics for Successful Firm Management</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 612</td>
<td>Performance Evaluation Through Cost Management</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 613</td>
<td>Financial Reporting and Firm Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 623</td>
<td>Marketing and Firm Performance</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 633</td>
<td>Statistical Analysis for Management</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 638</td>
<td>Managing Business Operations in a Global Environment</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 643</td>
<td>Financial Management in a Global Environment</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 653</td>
<td>Fundamentals of Behavior in Organizations</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 662</td>
<td>Management of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 678</td>
<td>Business Strategy and Firm Leadership</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

Global Requirement

Students must take ONE of the following global courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGT 695</td>
<td>Global Business Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>MBA 716</td>
<td>International Business Strategy</td>
<td></td>
</tr>
<tr>
<td>MBA 718</td>
<td>International Marketing</td>
<td></td>
</tr>
<tr>
<td>MBA 717</td>
<td>International Finance</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Elective

Select one from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGT 692</td>
<td>Professional Development Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

1. In addition to the above, students must complete the following required courses: 3

BMGT 603 Economics for Successful Firm Management
BMGT 612 Performance Evaluation Through Cost Management
BMGT 613 Financial Reporting and Firm Analysis
BMGT 623 Marketing and Firm Performance
BMGT 633 Statistical Analysis for Management
BMGT 638 Managing Business Operations in a Global Environment
BMGT 643 Financial Management in a Global Environment
BMGT 653 Fundamentals of Behavior in Organizations
BMGT 662 Management of Information Technology
BMGT 678 Business Strategy and Firm Leadership

Total Credits: 30
The Bachelor of Science in Marketing prepares students for a broad range of global and domestic career options in corporations, small businesses, government, and nonprofits. A marketing degree provides students with a solid foundation in marketing management for understanding the needs of the customer; the value organizations create for their customers, and opportunities and threats in the global marketplace. Students learn marketing concepts and practices related to consumer behavior, marketing research and analytics, and marketing planning and strategy (product development, pricing, distribution, and advertising and promotions). Our graduates work in such diverse fields as advertising and marketing communications, product and brand management, customer relationship management, new product/service development, new market and business development, sales, retail management, marketing research and analytics, and digital and social media marketing.

Admissions & Policies

Policies

Academic Policies

Students should become familiar with the university’s general academic policies (p. 77) in addition to those specific to each academic unit.

E-mail

George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school/department/program and other administrative units, and check it regularly for important information.

Study Elsewhere Policy

A student who has matriculated at Mason may transfer a limited number of hours (9 for undergraduates, 6 for graduates) of coursework in School of Business disciplines from another institution (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education). Students are permitted to take courses elsewhere under unusual circumstances—these circumstances do not include scheduling or commuting convenience, or financial (lower cost) reasons.

Special instructions for School of Business students: courses that are attempted at a two-year institution may not be used to fulfill upper-level requirements. Any course that a student wished to transfer to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

For additional information, see AP.1.4.2 Permission to Study Elsewhere (p. 79).

Undergraduate Internship Policy

The School of Business recognizes the importance of experiential education in both learning to apply theory to practice and positioning students for success in their careers. Because the School of Business is committed to supporting students’ professional success, the School requires that all student internships for credit be registered with the School of Business as one of the following: ACCT 492, BUS 492, FNAN 492 (https://catalog.gmu.edu/search/?scontext=courses&search=FNAN+492), MGMT 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MGMT+492), MIS 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MIS+492), MKTG 492 (https://catalog.gmu.edu/search/?scontext=courses&search=MKTG+492), OSCM 492 or OM 492 (https://catalog.gmu.edu/search/?scontext=courses&search=OM+492). Students may enroll in a maximum of 6 credits for these courses. For students in catalog years Fall 2016 and beyond, one internship course may apply to the major, and a second internship course would apply as elective credit. For students in catalog years prior to Fall 2016, a maximum of 6 credits of internship may apply to general electives.

Termination from the Major

A grade of C or higher is required in each of the School of Business listed core courses. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment of Business, BUS 303 Develop Professional Skills II: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core) (p. 142), MKTG 303 Principles of Marketing OM 303 Operations Management and OSCM 303 Operations Management.

Once a student has attempted a School of Business Core or Accounting major course twice unsuccessfully, they must meet with an academic advisor in order to receive an override to register for the third attempt. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare the business minor only, and are not able to declare any other School of Business minors. Students are limited to three attempts at ACCT 330. Any student who is unable to achieve a C or higher in ACCT 330 on the third attempt will not be able to pursue a Major in Accounting or Finance. For more information about this, see AP.5.2.4 Termination from the Major (p. 88).

University Consortium

Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic
Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstance. All consortium registration requests must be submitted to the dean’s office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Any consortium course that a student wishes to register for to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Non-Business School Student Credit Limitation
Enrolled undergraduate students who are not declared in a School of Business major are limited to 9 credits of upper-level business coursework within the School of Business. This policy applies to any student who is declared in another major or program at Mason. This policy does not apply to students who have declared a School of Business minor and are earning required credit toward that minor.

Undergraduate Course Overload Policy
The School of Business recommends that undergraduate students attempt no more than 18 credits in an academic semester and no more than 14 credits in a summer term. Students wishing to attempt more than 18 credits must submit a Permission to Overload form to their academic advisor.

To be eligible for a course overload, a student must fulfill all of the following criteria:

- At least a 3.0 cumulative GPA at Mason
- Have completed all courses successfully in his/her previous semester with no Fs or incompletes (IN)
- Complete the Permission to Overload form and obtain an academic advisor's signature

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

Transfer Credit Expiration Policy
Transfer credit is not awarded for any business (management, marketing, finance, accounting, management information systems, operations management, foundations, core, or any other School of Business course), courses completed more than ten years prior to Mason enrollment. This includes any older courses completed at RBC or the VCCS.

Appeals Process
The School of Business strives to maintain policies and procedures that are consistent with those of the University, as well as in the best interest of our students. If you have any questions concerning a particular policy or procedure, contact the Office of Student Success & Academic Services, Room 008 of Enterprise Hall (703-993-1880) or visit the website (http://business.gmu.edu).

Courses Excluded from any School of Business BS Degree
Transfer credit is not awarded for any School of Business courses completed more than ten years prior to Mason enrollment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 401</td>
<td>Internship Reflection</td>
<td>1</td>
</tr>
<tr>
<td>MUSI 394</td>
<td>Ethnomusicology Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>COMM 450</td>
<td>Internship in Communication</td>
<td>3</td>
</tr>
<tr>
<td>FAVS 450</td>
<td>Internship in Film and Video Studies</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 480</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 496</td>
<td>Internship</td>
<td>2-6</td>
</tr>
<tr>
<td>CONF 370</td>
<td>Internship Field Experience</td>
<td>1-9</td>
</tr>
<tr>
<td>PHIL 306</td>
<td>Philosophy Internship</td>
<td>3</td>
</tr>
<tr>
<td>RELI 426</td>
<td>Religious Studies Internship</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 393</td>
<td>Art History Internships</td>
<td>3-6</td>
</tr>
<tr>
<td>GCH 498</td>
<td>Global and Community Health Internship</td>
<td>3,6</td>
</tr>
<tr>
<td>GAME 491</td>
<td>Internship</td>
<td>3-4</td>
</tr>
<tr>
<td>HAP 498</td>
<td>Health Administration Internship (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>HDFS 499</td>
<td>Advanced Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 494</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>ENGH 459</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>MUSI 395</td>
<td>Teaching Internship</td>
<td>1-4</td>
</tr>
<tr>
<td>INTS 390</td>
<td>International Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>INTS 490</td>
<td>Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>ECON 498</td>
<td>Internship</td>
<td>3-6</td>
</tr>
<tr>
<td>ASTR 409</td>
<td>Astronomy Internship</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 490</td>
<td>Internship (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>TOUR 490</td>
<td>Hospitality, Tourism, and Events Management Internship (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>CLIM 409</td>
<td>Research Internship</td>
<td>3</td>
</tr>
<tr>
<td>CHIN 490</td>
<td>Internship in Chinese Studies</td>
<td>1-9</td>
</tr>
<tr>
<td>CONS 498</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>THR 455</td>
<td>Theater Education Internship</td>
<td>6-12</td>
</tr>
<tr>
<td>AFAM 490</td>
<td>Internship</td>
<td>2-6</td>
</tr>
<tr>
<td>KINE 490</td>
<td>Kinesiology Internship III (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>AMGT 489</td>
<td>Internship in Arts Management</td>
<td>1-4</td>
</tr>
<tr>
<td>HDFS 498</td>
<td>Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 495</td>
<td>Internship</td>
<td>1-6</td>
</tr>
<tr>
<td>PRLS 490</td>
<td>Recreation Management Internship (Mason Core)</td>
<td>12</td>
</tr>
<tr>
<td>GGS 480</td>
<td>GGS Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>SPAN 490</td>
<td>Internship in Spanish</td>
<td>1-6</td>
</tr>
<tr>
<td>AVT 489</td>
<td>Internship in Art and Visual Technology</td>
<td>1-6</td>
</tr>
<tr>
<td>USST 490</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>WMST 400</td>
<td>Internship in Women and Gender Studies</td>
<td>1-3</td>
</tr>
<tr>
<td>CDS 491</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>HHS 480</td>
<td>Research Internship</td>
<td>3</td>
</tr>
</tbody>
</table>
Requirements

Degree Requirements
Total credits: 120

School of Business students pursuing a BS degree must complete a minimum of 120 credits, including the Mason Core requirements, business foundations, business core and major requirements. In addition, the following requirements must be met:

- A minimum of 45 credits at the 300- or 400-level.
- A minimum of 30 credits of School of Business core and major courses at Mason.
- At least 9 credits required for the specific major and BUS 498 Capstone Course: Advanced Business Models (Mason Core) (p. 142) taken at Mason.
- A grade of C or higher earned in the business foundations, business core and major requirements.

Students should carefully examine prerequisites for School of Business courses. Students may be removed from a course if they enroll without having fulfilled the prerequisites.

Mason Core Requirements
School of Business students must complete the Mason Core (p. 142) requirements, plus 1 additional credit of natural science (the School of Business natural science requirement must be fulfilled by completing two 4-credit laboratory sciences). Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed below. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 303</td>
<td>Accounting for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 330</td>
<td>Financial Accounting I</td>
<td></td>
</tr>
<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 303</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Business Core
A grade of C or higher is required in each of the School of Business listed core courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 303</td>
<td>Accounting for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 330</td>
<td>Financial Accounting I</td>
<td></td>
</tr>
<tr>
<td>BULE 303</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303</td>
<td>Develop Professional Skills II: Advanced Elements</td>
<td>3</td>
</tr>
<tr>
<td>FNAN 303</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 303</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
</tbody>
</table>
Students will not be permitted to make more than three attempts to achieve a C or higher in this course. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare a business minor. For more information about this, see AP5.2.4 Termination from the Major (p. 88).

General Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 18-19 credits</td>
<td>18-19</td>
</tr>
</tbody>
</table>

General electives may be selected from any University or School of Business course, except courses designated for the Business minor (MBUS). Credits awarded as Associate Degree Elective Credit (ADEC) as part of a student’s transfer evaluation are also excluded from general electives.

Major Requirements in Marketing

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>MKTG 312</td>
<td>Consumer Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 351</td>
<td>Marketing Research</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 471</td>
<td>Marketing Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>12</td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Sales Management</td>
<td></td>
</tr>
<tr>
<td>MKTG 313</td>
<td>Advertising and Marketing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communications</td>
<td></td>
</tr>
<tr>
<td>MKTG 315</td>
<td>Digital Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 332</td>
<td>Retailing and E-Commerce</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>MKTG 333</td>
<td>Business to Business Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 352</td>
<td>Marketing Analytics for New</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Product Development</td>
<td></td>
</tr>
<tr>
<td>MKTG 353</td>
<td>New Product Development</td>
<td></td>
</tr>
<tr>
<td>MKTG 407</td>
<td>Global Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 455</td>
<td>Ethnic and Multicultural</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 462</td>
<td>Honors Seminar in Marketing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Topic Varies)</td>
<td></td>
</tr>
<tr>
<td>MKTG 481</td>
<td>RS: Marketing in the Nonprofit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sector</td>
<td></td>
</tr>
<tr>
<td>MKTG 491</td>
<td>Seminar in Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 499</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>BUS 492</td>
<td>Internship in Business</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 21

Satisfies Writing Intensive requirement.

Second Majors in Marketing

Students declaring a second major in Marketing must complete the three required courses and three elective courses for the major.

Marketing Minor

Banner Code: MKTG

Academic Advising

Phone: 703-993-1880
Email: masonbus@gmu.edu

Administration

- David Gallay, Director of Minor Programs

The Marketing Minor provides any student who is interested in marketing a solid foundation for understanding the needs of the customer and in the principles of marketing management. This includes understanding new product development, creating marketing communications and promotions, managing customer relationships, and analyzing consumer and market trends. Learning outcomes also include the value organizations create for their customers, and opportunities and threats in the global marketplace.

This minor provides a wide range of marketing classes that can enhance major coursework in other academic disciplines. In the required courses, students learn about the value of the consumer and customer behavior, and explore fundamental marketing principles. In the elective courses, students can tailor their focus with a variety of specialized topics.

Admissions & Policies

Policies

For policies governing all minors, see AP5.3.4 Minors (p. 90). The School of Business residency requirement for this minor supersedes the university requirement: at least nine credits must be earned at Mason.

At least eight credits of the minor courses must be unique to the Business Minor and not applied toward any other major, minor, or concentration. Students must achieve a grade of C or better in each course that is applied toward the minor. This minor is available to all non-Marketing majors at the University with a minimum of sophomore standing.
Requirements

Minor Requirements
Total credits: 15

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKTG 303</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 312</td>
<td>Consumer Behavior</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Electives

Choose 3 of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKTG 307</td>
<td>Federal Government Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Sales Management</td>
<td></td>
</tr>
<tr>
<td>MKTG 313</td>
<td>Advertising and Marketing Communications</td>
<td></td>
</tr>
<tr>
<td>MKTG 315</td>
<td>Digital Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 332</td>
<td>Retailing and E-Commerce Management</td>
<td></td>
</tr>
<tr>
<td>MKTG 333</td>
<td>Business to Business Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 351</td>
<td>Marketing Research</td>
<td></td>
</tr>
<tr>
<td>MKTG 352</td>
<td>Marketing Analytics for New Product Development</td>
<td></td>
</tr>
<tr>
<td>MKTG 353</td>
<td>New Product Development</td>
<td></td>
</tr>
<tr>
<td>MKTG 407</td>
<td>Global Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 455</td>
<td>Ethnic and Multicultural Marketing</td>
<td></td>
</tr>
<tr>
<td>MKTG 481</td>
<td>RS: Marketing in the Nonprofit Sector</td>
<td></td>
</tr>
<tr>
<td>MKTG 491</td>
<td>Seminar in Marketing</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Real Estate Development, MS

Banner Code: BU-MS-REAL

Graduate Program Office
Phone: 703-993-8006
Email: sbusgrad@gmu.edu

Administration

• Carolyn Grimsley, Director, MS in Real Estate Development

The MS in Real Estate Development program is designed to provide real estate professionals with the knowledge essential to assume increasingly responsible leadership roles within the development industry. Areas of emphasis include real estate finance, investment analysis, project management, sustainability and economic development. The distinctiveness of the Master’s program in Real Estate Development offered by Mason lies in its multi-disciplinary curriculum, which incorporates coursework from the domains of business, engineering and public policy. Created in consultation with leading real estate development companies, the curriculum has been designed to strengthen the employment potential and upward mobility of industry professionals working in the areas of development, architecture, engineering, public planning, construction management, real estate finance, mortgage lending, property management, real estate law and related fields.

Admissions & Policies

Admissions

Requirements
All students registering for School of Business graduate courses must have graduate standing. Non degree student status is not available.

Full eligibility and admission requirements can be viewed here (http://business.gmu.edu/masters-in-real-estate-development/admissions).

Policies
The 36-hour curriculum includes 18 hours of required courses and 18 hours of electives. Students are responsible for familiarization and compliance with AP6 Graduate Policies (p. 90).

Requirements

Degree Requirements
Total credits: 36 - 37

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>REAL 605</td>
<td>Policy and Planning of the Built Environment</td>
<td></td>
</tr>
<tr>
<td>REAL 615</td>
<td>Brokerage and Market Analysis</td>
<td></td>
</tr>
<tr>
<td>REAL 625</td>
<td>Financial Analysis and Valuation</td>
<td></td>
</tr>
<tr>
<td>REAL 635</td>
<td>The Development Process</td>
<td></td>
</tr>
<tr>
<td>REAL 645</td>
<td>Law and Entitlements</td>
<td></td>
</tr>
<tr>
<td>REAL 655</td>
<td>Design and Construction</td>
<td></td>
</tr>
<tr>
<td>REAL 750</td>
<td>MSRED Capstone</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

Electives

Select 15 credits of electives

Total Credits

1 Electives may be selected from other REAL courses (see below) and available offerings in appropriate areas including the Schar School of Policy and Government; the School of Business; the Volgenau School of Engineering; the College of Humanities and Social Sciences; the College of Science; and the School for Conflict Analysis & Resolution.

Students wishing to choose a field for emphasis may select, with the approval of a faculty advisor, 3 elective courses within the field that together constitute an emphasis area. They must also then take 3 courses outside the selected emphasis to reach the required elective total of 15. With prior approval of an advisor, students may design their own emphasis. The following are examples of fields for emphasis and courses within each field which may be selected.
Organizational Issues Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 781</td>
<td>Entrepreneurship and Economic Development</td>
<td></td>
</tr>
<tr>
<td>EVPP 638</td>
<td>Corporate Environmental Management and Policy</td>
<td></td>
</tr>
<tr>
<td>COMM 632</td>
<td>Persuasion Theory</td>
<td></td>
</tr>
<tr>
<td>COMM 635</td>
<td>Organizational Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 634</td>
<td>Theories of Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 706</td>
<td>Strategic Communication</td>
<td></td>
</tr>
<tr>
<td>CONF 501</td>
<td>Introduction to Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>PHIL 644</td>
<td>Business and Organizational Ethics</td>
<td></td>
</tr>
<tr>
<td>MBA 725</td>
<td>Leadership</td>
<td></td>
</tr>
<tr>
<td>MBA 726</td>
<td>Negotiations</td>
<td></td>
</tr>
<tr>
<td>REAL 710</td>
<td>Real Estate Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>REAL 720</td>
<td>Real Estate Leadership and Project Management</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

Project Feasibility Emphasis

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 602</td>
<td>Regional Economic Development: Strategies and Applications</td>
<td></td>
</tr>
<tr>
<td>PUBP 714</td>
<td>Topics in Transportation Policy, Operations, and Logistics</td>
<td></td>
</tr>
<tr>
<td>PUBP 752</td>
<td>Infrastructure Finance</td>
<td></td>
</tr>
<tr>
<td>EVPP 524</td>
<td>Introduction to Environmental and Resource Economics</td>
<td></td>
</tr>
<tr>
<td>CEIE 607</td>
<td>Public Infrastructure Management and Finance</td>
<td></td>
</tr>
<tr>
<td>CEIE 667</td>
<td>Multi-modal Transportation Systems</td>
<td></td>
</tr>
<tr>
<td>CEIE 573</td>
<td>Legal Aspects of the Construction Process</td>
<td></td>
</tr>
<tr>
<td>CONF 741</td>
<td>Negotiations</td>
<td></td>
</tr>
<tr>
<td>REAL 730</td>
<td>Financing Real Estate Projects</td>
<td></td>
</tr>
<tr>
<td>REAL 740</td>
<td>Real Estate Investments</td>
<td></td>
</tr>
<tr>
<td>GBUS 540</td>
<td>Analysis of Financial Decisions</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

Special Topics Impacting Development

The following courses may be included as electives by all students:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 745</td>
<td>Transportation and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 505</td>
<td>Selected Topics in Environmental Science</td>
<td>4</td>
</tr>
<tr>
<td>EVPP 670</td>
<td>Environmental Law</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 533</td>
<td>Energy Policy</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 635</td>
<td>Environment and Society</td>
<td>3</td>
</tr>
<tr>
<td>GGS 507</td>
<td>Geographic Approaches on Sustainable Development</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 643</td>
<td>Environmental Ethics</td>
<td>3</td>
</tr>
<tr>
<td>REAL 790</td>
<td>Special Topics in Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>REAL 796</td>
<td>Directed Reading</td>
<td>1-6</td>
</tr>
</tbody>
</table>

Technology Management, MS

Banner Code: BU-MS-TECM

Graduate Program Office

Phone: 703-993-2136
Email: techman@gmu.edu

Administration

- Candace Deans, Academic Director, MS in Technology Management Program & Co-Academic Director, MS in Management of Secure Information Systems Programs

The MS in Technology Management is designed to provide students with a graduate management education that will help them further their leadership careers in technology and technology-oriented businesses and organizations. With technology innovation and commercialization occurring at an increasing pace and industries becoming more networked and global, business success depends on the successful management of technology. Companies are succeeding with rapid innovation, insightful technology integration, creation of focused technology organizations, and skillful management of complexity. The program addresses how to succeed in this marketplace and emphasizes leadership and management; special considerations of technology innovation, commercialization, introduction, and integration; and methods and approaches of systems thinking.

The program, designed for working professionals, starts in January and lasts for 16 months. Classes are held on the Arlington Campus on Saturdays from 8 a.m. to 5 p.m. The program is 36 credits and includes a capstone project and an international residency. The international residency is approximately 8 days abroad focusing on global topics in technology management.

Admissions & Policies

Admissions

All students registering for School of Business graduate courses must have graduate standing. Non-degree student status is not available.

Full eligibility and admission requirements can be viewed here (http://business.gmu.edu/masters-in-technology-management/admissions).

Policies

Students are responsible for familiarization and compliance with the university's Graduate Policies (p. 90).

Requirements

Degree Requirements

Total credits: 36
Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECM 601</td>
<td>Business Models</td>
<td>1</td>
</tr>
<tr>
<td>TECM 603</td>
<td>IT Leadership and the Global CIO</td>
<td>1</td>
</tr>
<tr>
<td>TECM 611</td>
<td>Leadership and Change Management</td>
<td>2</td>
</tr>
<tr>
<td>TECM 614</td>
<td>Financial and Cost Accounting</td>
<td>2</td>
</tr>
<tr>
<td>TECM 620</td>
<td>Economics of Global Technology Management</td>
<td>1</td>
</tr>
<tr>
<td>TECM 635</td>
<td>Decision Models for Technology Management</td>
<td>1</td>
</tr>
<tr>
<td>TECM 641</td>
<td>Negotiation and Conflict Management</td>
<td>1</td>
</tr>
<tr>
<td>TECM 643</td>
<td>Managerial Finance</td>
<td>2</td>
</tr>
<tr>
<td>TECM 702</td>
<td>Building High Performance Global Teams</td>
<td>2</td>
</tr>
<tr>
<td>TECM 704</td>
<td>Management of Technology Projects and Portfolios</td>
<td>2</td>
</tr>
<tr>
<td>TECM 711</td>
<td>Deriving Strategic Value from IT Investments</td>
<td>2</td>
</tr>
<tr>
<td>TECM 720</td>
<td>Competitive Strategy in Technology Industries</td>
<td>2</td>
</tr>
<tr>
<td>TECM 721</td>
<td>Digital Transformation</td>
<td>2</td>
</tr>
<tr>
<td>TECM 735</td>
<td>Technology Management Capstone Project</td>
<td>0</td>
</tr>
<tr>
<td>TECM 741</td>
<td>Marketing of Innovations and Technology</td>
<td>2</td>
</tr>
<tr>
<td>TECM 745</td>
<td>Leading and Managing IT Operations</td>
<td>2</td>
</tr>
<tr>
<td>TECM 746</td>
<td>Enterprise Architecture and IT Governance</td>
<td>2</td>
</tr>
<tr>
<td>TECM 747</td>
<td>Information Assurance and Security Management</td>
<td>2</td>
</tr>
<tr>
<td>TECM 749</td>
<td>Developing and Emerging Technologies</td>
<td>2</td>
</tr>
<tr>
<td>TECM 752</td>
<td>Global Technology Management</td>
<td>3</td>
</tr>
<tr>
<td>TECM 753</td>
<td>Global Leadership Perspectives</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits 36

School for Conflict Analysis and Resolution

Undergraduate Programs
Phone: 703-993-4165  
E-mail: ugradcar@gmu.edu  
Location: Northeast Module II, Room 110  
Fairfax Campus

Graduate Programs
Phone: 703-993-1300  
E-mail: scaradvi@gmu.edu (scarinfo@gmu.edu)  
Location: Vernon Smith Hall Suite 5000  
Arlington Campus

Website: scar.gmu.edu

Administration

- Kevin Avruch, Dean
- Julie Shedd, Associate Dean
- Terrence Lyons, PhD Program Director

College Code: CA

The School for Conflict Analysis and Resolution (S-CAR), is committed to the development of theory, research, and practice that interrupt cycles of violence. The school community includes scholars, graduate and undergraduate students, alumni, practitioners, and organizations in the field of peace making and conflict resolution. Building on the strengths of our four research centers, field-based courses, and faculty with expertise from over a dozen disciplines, earning a degree at S-CAR will take you to the epicenter of conflict and prepare you for a meaningful career.

Recognized in 1997 as a Commonwealth Center of Excellence by the Virginia Legislature, S-CAR is committed to serving our students, faculty and staff, our local community, our global mission, and the field of Conflict Analysis and Resolution. S-CAR is a leader in George Mason University's commitment to be a University for the world, leveraging our long history of engagement in research and intervention in real world problems and our strength in preparing our graduates to productively engage in our local and global challenges. S-CAR strives to break down the silos of domestic and international conflict research and practice with teaching, research and practice that cut across levels of conflict.

Our world class faculty has published foundational texts on such topics as culture, social identity, narrative, religion, history and education, gender, and peacebuilding and consciousness. As scholar-practitioners, their projects and teaching engage them around the globe, including in the Middle East, Africa, the Caucasus, and here in the United States.

We offer a full complement of degree programs: Bachelor’s, Master’s, Graduate Certificate, and Doctoral degrees that develop students’ ability to engage with theory and build their own practice.

Undergraduate Programs

Bachelor’s Degrees and Minors
Conflict Analysis and Resolution offers students a BA, BS, and two minors in an interdisciplinary social science field with practical applications. The minors are in Conflict Analysis and Resolution or Sport and Conflict Resolution. The field of conflict analysis and resolution analyzes the sources and dynamics of conflict and the means for resolution toward lasting peace. Conflict resolution students take a series of core courses that provide a background in conflict theory, analysis, and conflict resolution skills. All conflict analysis and resolution majors also choose an area of concentration. There are six concentrations: Building Peace in Divided Societies, Global Engagement, Political and Social Action, Justice and Reconciliation, Interpersonal Dynamics, and Collaborative Leadership. After selecting a concentration, students choose courses from units throughout the university that relate to the concentration and their areas of interest. The major also requires three credits of field experience in the form of an internship, independent research, or study abroad.

Bachelor’s/Accelerated Master’s

Bachelor’s/Accelerated Master’s
The School offers qualified undergraduates the opportunity to apply to the accelerated master’s degree program. If accepted, students will earn both an undergraduate and a graduate degree after satisfactory completion of 147 credits, sometimes within 5 years. More information
about the degree options and application process may be found here (http://scar.gmu.edu/undergraduate/degrees/accelerated-masters).

Graduate Programs

PhD Program
The PhD program in Conflict Analysis and Resolution, the first of its kind in the United States, provides advanced study for students in the fields of conflict and conflict resolution. Students are prepared for careers as researchers, theoreticians, and teachers in higher education, and as policy administrators, analysts, and consultants in the public and the private sectors. The program stresses a close link between knowledge of theory and process in the resolution of conflict. For this, training in the methods of research and analysis is emphasized. In addition, students are expected to obtain a background in a substantive area of conflict, usually related to the topic of the dissertation.

MS Program
The MS in Conflict Analysis and Resolution is a professional program that prepares students for practice and further academic work by integrating conflict analysis and resolution theory, research, and practical techniques. Participants study the theory, methods, and ethical perspectives of the field, and apply this knowledge in laboratory simulations and workshops, internships, and field practice. Graduates work in a variety of settings where conflict resolution is useful and interest groups are in conflict with current and emergent public policy. Examples are businesses, unions, government agencies, religious groups, court systems, educational institutions, community centers, international relief and development organizations, and consulting firms.

Graduate Certificates
S-CAR offers a graduate certificate in Mass Atrocity and Genocide Prevention and a graduate certificate in Conflict Analysis and Resolution. The Conflict Analysis and Resolution certificate offers four concentrations: Advanced Skills; Collaborative Community Action; Prevention and Reconstruction Contexts; and World Religions and Peacebuilding. Each of these 15-credit programs is specifically tailored to provide students with practical knowledge of conflict analysis and resolution relevant to their focused areas of work. Designed for mid-career professionals studying in a cohort environment, the certificate programs integrate conflict analysis and resolution theory, research, and practical technique. These programs use intensive course sessions, lecture, seminar, and applied mentor learning in real and simulated situations to prepare students to use conflict analysis and resolution approaches in their work in a variety of fields.

Faculty

School Faculty

Professors
Avruch, Cobb, Gopin, Hirsch, Korostelina, Rothbart, Rubenstein, Sandole

Associate professors
Allen, Dwyer, Flores, Lyons, Maulden, Paczynska, Schoeny, Simmons

Assistant professors
Agbiboa, Chavis, Firchow, Irvin-Erickson, Lopez Bunyasi, Romano, Shedd

Visiting professors
De Janasz

Research professors
Price, Stanton

Affiliate faculty

Emeritus faculty
Cheldelin, Mitchell, Sluzki

Requirements & Policies

Policies
Students should become familiar with the university's general academic policies in addition to those specific to each academic unit. See the Academic Policies (p. 77).

Policies specific to each academic program can be found listed in each program's catalog listing.

Appeal of Decisions
The policies of the School for Conflict Analysis and Resolution are designed to be consistent, equitable, and transparent. Our office strives to be thorough, timely, and open to answer any questions students may have regarding our decisions and/or the process through which they were reached. Students seeking clarification and explanation of the decision should request an appointment with the appropriate Program Director to discuss their concerns.

Students have the right to appeal decisions regarding requests for academic actions. This step can only be taken after a request to meet with the Program Director. Students who wish to pursue an appeal after this meeting should do so only if they can provide sufficient and compelling reasons for their initial claim to be reconsidered. Such reasons include newly available documentation, proof of an irregularity in procedures, proof of inequity or inconsistency, or consequences so serious that further review is warranted. A student's dissatisfaction or disagreement with the decision does not constitute sufficient reason for a decision to be changed. Appeals are first reviewed by the Program Director. If denied, the appeal is forwarded to the Dean. The decision of the Dean is the final decision of the School.

If the appeal is a case involving a school-level policy, the Dean serves as the final point of appeal. If the appeal involves university level policies, students must first complete the school-level appeal process before appealing to the Provost's Office.

Programs

• Conflict Analysis and Resolution Graduate Certificate
• Conflict Analysis and Resolution Minor
• Conflict Analysis and Resolution, BA
Conflict Analysis and Resolution, BA

Banner Code: CA-BA-CONF

The world is becoming increasingly connected and the ability to create and maintain cross-cultural connections is more important than ever. As the effects of violence and conflict are felt throughout the global community, we are seeing more and more opportunities for collaboration, problem solving, and peacebuilding in local communities and across international barriers. To prepare our students to make cross-cultural connections, Bachelor's of Arts in Conflict Analysis and Resolution students must demonstrate intermediate level proficiency in a foreign language.

Concentrations
All conflict analysis and resolution majors choose an area of concentration from the following:

- Building Peace in Divided Societies
- Global Engagement
- Political and Social Action
- Justice and Reconciliation
- Interpersonal Dynamics
- Collaborative Leadership

Advising
School for Conflict Analysis and Resolution advisors help students create an interdisciplinary course of study that meets their interests and career goals. All majors are strongly encouraged to meet regularly with an academic advisor from the School who will help students develop and follow a coherent plan of study and complete the degree in a timely manner.

Admissions & Policies

Policies
For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

Major Coursework Grade Requirement
Students cannot use more than 12 credits of coursework within the major with a C- or D grade to count towards the Conflict Analysis and Resolution, BA. If a student receives C- or D grades in excess of the allowed number, they may retake courses to meet the major coursework grade requirement for graduation. Students taking a graduate course for undergraduate credit must achieve a grade of B- or higher for graduate course credits to count towards their undergraduate degree.

Transfer Students
For policies governing admission and requirements for students transferring from another college or university, see Undergraduate Admission Policies - Transfer. (p. 67)

Admitted and enrolled transfer students who have completed an AA, AS, or AA&S degree from the Virginia Community College System (VCCS) and have been offered admission to Mason by the Office of Admissions may be eligible for a waiver of all George Mason University’s Mason Core (p. 142) requirements in accordance with the Guaranteed Admission Agreement. Students eligible for this waiver are still required by the university to complete ENGH 302 Advanced Composition (Mason Core) (p. 142) and a synthesis course.

Transfer students who have been offered admission under the terms of the Guaranteed Admission Agreement and are pursuing a BA are considered to have met all school requirements except for proficiency in a foreign language.

Students with a bachelor’s degree from an accredited institution who are pursuing a BA in this school are considered to have met all school requirements except for proficiency in a foreign language.

Requirements

Degree Requirements
Total credits: 120

Students must fulfill all requirements for bachelor’s degrees as stated in Academic Policies including all Mason Core requirements. Students majoring in Conflict Analysis and Resolution must also complete the college-level requirements for foreign language proficiency as well as 51 major requirement credits for the BA degree.

Students pursuing a double major/degree with a program outside of the S-CAR undergraduate program will be expected to fulfill all of the Mason Core and college requirements necessary to complete the second major. Please check with the second major department concerning additional requirements.

Required Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 101</td>
<td>Conflict and Our World (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CONF 210</td>
<td>Theories of Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td>3</td>
</tr>
<tr>
<td>CONF 301</td>
<td>Research and Inquiry in Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 302</td>
<td>Culture, Identity, and Conflict</td>
<td>3</td>
</tr>
<tr>
<td>CONF 320</td>
<td>Interpersonal Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 330</td>
<td>Community, Group, and Organizational Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 340</td>
<td>Global Conflict Analysis and Resolution (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CONF 490</td>
<td>RS: Integration (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 27

Field Experience
Students can choose to fulfill this requirement through an internship, service learning, study abroad, or independent study.
Students may not be approved for field experience until they have earned at least 30 credits. It is recommended that students complete at least nine credits of conflict coursework before applying for field experience credit. Prior approval by the Director of Field Experience is required for students to receive credit through any field experience options. Students interested in trips with S-CAR can find information here (https://scar.gmu.edu/academics/undergraduate/study-abroad). Students interested in study abroad through the Global Education Office can find information here (https://studyabroad.gmu.edu). Please contact an S-CAR advisor with questions or for information on the opportunities, policies, and procedures for field experience credit.

### Skills and Practice

This three credit requirement can be fulfilled by taking:

1. an additional 3 credits of field experience, OR
2. a foreign language course at the 250 level or higher, OR
3. one of the 3 credit courses or three of the 1 credit courses listed below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 370</td>
<td>Internship Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>CONF 375</td>
<td>Special Programs Field Experience</td>
<td></td>
</tr>
<tr>
<td>CONF 385</td>
<td>International Field Experience</td>
<td></td>
</tr>
<tr>
<td>CONF 485</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONF 499</td>
<td>Independent Research in Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits: 3**

### Concentrations

There are seven concentrations.

- **Concentration in Interpersonal Dynamics (INTD)** (p. 940)
- **Concentration in Collaborative Leadership (CLDR)** (p. 940)
- **Individualized Concentration (IND)** (p. 941)

To fulfill the concentration requirement students select six concentration courses. Four of those six courses must be taken from within their chosen concentration. The remaining two concentration courses may be taken from any of the concentration course lists. Special topics courses relevant to the concentration and/or courses that provide regional expertise can be substituted with departmental approval. Students are encouraged to check special topics courses each semester and think creatively about which courses support learning in their chosen concentration. At least two of the six concentration courses must be CONF courses. Courses may not double count for the concentration requirement and the skills and practice requirement.

### Concentration in Building Peace in Divided Societies (BPDS)

Focuses on how divided societies with a history of conflict seek to transform relationships and situations of violence and injustice. Examines communities and societies that have experienced conflict and how individuals and groups build peace locally and globally.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 325</td>
<td>Dialogue and Difference</td>
<td>3</td>
</tr>
<tr>
<td>CONF 393</td>
<td>Violence: Causes, Dynamics Alternatives</td>
<td></td>
</tr>
<tr>
<td>CONF 435</td>
<td>Building Peace in Divided Societies</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>CULT 320</td>
<td>Globalization and Culture</td>
<td></td>
</tr>
<tr>
<td>ECON 360</td>
<td>Economics of Developing Areas (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>GOVT 342</td>
<td>Diplomacy</td>
<td></td>
</tr>
<tr>
<td>HIST 373</td>
<td>The Civil War and Reconstruction</td>
<td></td>
</tr>
<tr>
<td>INTS 305</td>
<td>Conflict Resolution and Transformation</td>
<td></td>
</tr>
<tr>
<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core)</td>
<td>(p. 142)</td>
</tr>
</tbody>
</table>

**Total Credits: 12**

### Concentration in Global Engagement (GLBE)

Focuses on studying the dynamics and impact of global conflict resolution. Examines domestic and international dimensions of security, state-to-state conflict, internal wars, terrorism, migration, negotiation, and diplomacy. Explores what can be done to reduce violent conflict and increase peace and security.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 335</td>
<td>Justice and Reconciliation</td>
<td>3</td>
</tr>
<tr>
<td>CONF 345</td>
<td>Social Dynamics of Terrorism, Security, and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>ECON 385</td>
<td>International Economic Policy</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits: 12**

Courses may NOT double count for the concentration requirement and the skills and practice requirement.
**Concentration in Political and Social Action (PSA)**
Focuses on the ways that people organize themselves to effect change in their societies. This concentration explores social action, social organization, social movements, and civil resistance to analyze and investigate the role of constructive conflict.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF</td>
<td>Violence: Causes, Dynamics Alternatives</td>
<td>3</td>
</tr>
<tr>
<td>CONF</td>
<td>Human Rights and Inequality</td>
<td>3</td>
</tr>
<tr>
<td>COMM</td>
<td>Rhetoric of Social Movements and Political Controversy (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>Economic Problems and Public Policies (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT</td>
<td>Public Law and the Judicial Process</td>
<td>3</td>
</tr>
<tr>
<td>INTS</td>
<td>Social Movements and Community Activism (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS</td>
<td>Environmental Justice (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC</td>
<td>Community Engagement for Social Change (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI</td>
<td>Social Movements and Political Protest</td>
<td>3</td>
</tr>
<tr>
<td>SOCI</td>
<td>Power, Politics, and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOCI</td>
<td>Social Problems and Solutions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Concentration in Collaborative Leadership (CLDR)**
Focuses on improving the capacity of leaders to work with conflict and manage change. Includes topics in conflict transformation, mediation, dialogue, and organizational leadership.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF</td>
<td>Dialogue and Difference</td>
<td>3</td>
</tr>
<tr>
<td>COMM</td>
<td>Small Group Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM</td>
<td>Organizational Communication</td>
<td>3</td>
</tr>
<tr>
<td>GOVT</td>
<td>Administration in the Political System</td>
<td>3</td>
</tr>
<tr>
<td>INTS</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS</td>
<td>Ethics and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>INTS</td>
<td>Leadership in a Changing Environment</td>
<td>3</td>
</tr>
</tbody>
</table>
Leadership and Outdoor Education

Some Mason Core requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td></td>
</tr>
<tr>
<td>PRLS 316</td>
<td>Leadership and Outdoor Education</td>
<td></td>
</tr>
<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 335</td>
<td>Psychology of Creativity and Innovation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

**Individualized Concentration (IND)**

Students interested in creating their own concentration can work with an advisor to decide upon a set of at least six courses that form a cohesive theme and will fulfill the requirements of the BA in Conflict Analysis and Resolution. Individualized concentrations must be approved by the Director of the Undergraduate Program.

**Foreign Language Proficiency**

Students must demonstrate intermediate-level proficiency in one foreign language. This requirement may be fulfilled by successfully completing a foreign language course numbered 202 or higher. Students may also fulfill this requirement by achieving a satisfactory score on a university approved foreign language proficiency test. Students who are already proficient in a second language may be eligible for a waiver of this requirement.

**Writing-Intensive Requirement**

All Mason students are required to complete at least one course designated as "writing intensive" in their major at the 300-level or above. CONF 302 Culture, Identity, and Conflict has been designated "writing intensive."

**Electives**

Remaining credits needed to bring the degree total to 120 may be fulfilled with general elective courses.¹,²

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remaining credits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td></td>
</tr>
</tbody>
</table>

¹ Up to 3 credits of 100 level Recreation (RECR) (p. 2132) courses may be taken as general elective credits.

² Only Military Science (MLSC) (p. 1953) courses at the 400-level can be used for credit for a degree in the School; credit for other MLSC courses may not be applied toward a degree in the School.

**Mason Core**

Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Integration Requirements**

Written Communications (ENGH 302) (p. 142) 3

**Synthesis/Capstone (p. 153) ²**

Total Credits 40

¹ Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

² Minimum 3 credits required.

**Accelerated Master’s**

**Conflict Analysis and Resolution, BA or BS/Conflict Analysis and Resolution, Accelerated MS**

**Overview**

This accelerated Master’s option is designed for highly qualified and motivated undergraduate students that have completed at least 6 credit hours of CONF coursework at the time of application. If accepted, students may take up to 12 credits of graduate coursework before undergraduate degree conferral and will be able to earn an undergraduate degree and the Conflict Analysis and Resolution, MS (p. 951) after satisfactory completion of at least 147 credits. The time period for the combined program is typically five years. It provides a streamlined MS application process with no additional application fee.

For more detailed information, see AP.6 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Application Requirements**

For specific application requirements and information for the accelerated Conflict Analysis and Resolution, MS (p. 951), see Eligibility, Policies, and Deadlines (http://scar.gmu.edu/undergraduate/degrees/accelerated-masters). Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

Students must have a minimum undergraduate cumulative GPA of 3.25 at the time of application.

**Accelerated Master’s Requirements**

- During the first semester in senior status admitted students may take up to 6 credits (1-2 classes) that will count towards both their undergraduate AND graduate degrees. During the second semester of senior status, students may take up to 6 credits (1-2 classes) that will count towards the graduate degree only.

- Students must begin their master’s program the semester immediately following conferral of the undergraduate degree and will be expected to complete all remaining graduate program requirements within five years.

- See the program website (https://scar.gmu.edu/academics/undergraduate/accelerated-masters) for additional information.
Accelerated MS Requirements

• No grade below a B is permitted for any undergraduate or graduate CONF course taken after application to the accelerated master’s program until completion of the undergraduate program.
• If a student receives a grade below a B in any CONF course after acceptance in the program, they will not be allowed to continue on to the master’s program. Students that have received a grade below a B in a CONF course after acceptance into the program may re-apply to the master’s program after conferral of the undergraduate degree; however, re-application does not guarantee admission.
• At the time of the undergraduate degree conferral, students’ GPAs must meet the standard required for admission to the master’s degree.
• Students may not take more than 12 credits a semester if taking two graduate courses or 15 credits a semester if taking one graduate course.

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

Bachelor’s Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)

Overview
Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Selected Majors

• Art history (p. 394)
• Philosophy (p. 442)
• Conflict analysis and resolution (p. 936)
• Global affairs (p. 523)
• History (p. 402)
• Religious studies (p. 491)
• Russian and Eurasian studies (p. 568)
• Sociology (p. 507)
• Anthropology (p. 497)

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious studies (p. 496).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit
Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).
Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)

Overview

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master’s in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Selected Majors

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

Reserve Graduate Credit

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the program. Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select up to 6 credits from the list of electives for the MAIS concentration in social justice and human rights</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Bachelor's Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)

Overview

Highly-qualified undergraduates in select majors may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in women and gender studies after satisfactory completion of 150 credits, sometime within five years.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Selected Majors

Anthropology (p. 497), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), and Communication (p. 314).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see the departmental web site (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6
As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 600</td>
<td>Special Topics</td>
<td>6</td>
</tr>
<tr>
<td>WMST 610</td>
<td>Feminist Approaches to Social Research</td>
<td></td>
</tr>
<tr>
<td>WMST 630</td>
<td>Feminist Theories across the Disciplines</td>
<td></td>
</tr>
<tr>
<td>WMST 640</td>
<td>Transnational and Global Feminisms</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Conflict Analysis and Resolution, BS**

**Banner Code:** CA-BS-CONF

Analytical skills and techniques are critical to solving the world’s toughest problems. In order to solve conflict we must first understand it. Critical thinking and research skills are the focus of our Bachelor of Science program and are in demand by employers of all sectors. Students pursuing a Bachelor’s of Science in Conflict Analysis and Resolution develop research skills and have the opportunity to gain experience designing surveys, conducting interviews, analyzing statistics, and organizing data.

All conflict analysis and resolution majors choose an area of concentration:

- Building Peace in Divided Societies
- Global Engagement
- Political and Social Action
- Justice and Reconciliation
- Interpersonal Dynamics
- Collaborative Leadership

**Advising**

Advisors help students create an interdisciplinary course of study that meets their interests and career goals. All majors are strongly encouraged to meet regularly with an academic advisor from the School who will help students develop and follow a coherent plan of study and complete the degree in a timely manner.

**Admissions & Policies**

**Policies**

For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

**Major Coursework Grade Requirement**

Students cannot use more than 12 credits of coursework within the major with a C- or D grade to count towards the Conflict Analysis and Resolution, BS. If a student receives C- or D grades in excess of the allowed number, they may retake courses to meet the major coursework grade requirement for graduation. Students taking a graduate course for undergraduate credit must achieve a grade of B- or higher for graduate course credits to count towards their undergraduate degree.

**Transfer Students**

For policies governing admission and requirements for students transferring from another college or university, see Undergraduate Admission Policies - Transfer. (p. 67)

Admitted and enrolled transfer students who have completed an AA, AS, or AA&S degree from the Virginia Community College System (VCCS) and have been offered admission to Mason by the Office of Admissions may be eligible for a waiver of all George Mason University’s Mason Core (p. 142) requirements in accordance with the Guaranteed Admission Agreement. Students eligible for this waiver are still required by the university to complete ENGH 302 Advanced Composition (Mason Core) (p. 142) and a synthesis course.

**Requirements**

**Degree Requirements**

Total credits: 120

Students must fulfill all requirements for bachelor’s degrees as stated in Academic Policies including all Mason Core requirements. S-CAR majors must complete the 6 credit college-level requirement in research methods as well as 51 major requirement credits for the BS degree.

Students pursuing a double major/degree with a program outside of the S-CAR undergraduate program will be expected to fulfill all of the Mason Core and college requirements necessary to complete the second major. Please check with the second major department concerning additional requirements.

**Required Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 101</td>
<td>Conflict and Our World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONF 210</td>
<td>Theories of Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td>3</td>
</tr>
<tr>
<td>CONF 301</td>
<td>Research and Inquiry in Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 302</td>
<td>Culture, Identity, and Conflict</td>
<td>3</td>
</tr>
<tr>
<td>CONF 320</td>
<td>Interpersonal Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
</tbody>
</table>
Field Experience

Students can choose to fulfill this requirement through an internship, service learning, study abroad, or independent study.

Students may not be approved for field experience until they have earned at least 30 credits. It is recommended that students complete at least 9 credits of conflict coursework before applying for field experience credit. Prior approval by the Director of Field Experience is required for students to receive credit through any field experience options. Students interested in trips with S-CAR can find information here (https://scar.gmu.edu/field-experience). Students interested in study abroad through the Global Education Office can find information here (http://studyabroad.gmu.edu). Please contact an S-CAR advisor with questions or for information on the opportunities, policies, and procedures for field experience credit.

Skills and Practice

This three credit requirement can be fulfilled by taking

1. an additional 3 credits of field experience, OR
2. a foreign language course at the 250 level or higher, OR
3. one 3 credit course or three 1 credit courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 370</td>
<td>Internship Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>CONF 375</td>
<td>Special Programs Field Experience</td>
<td></td>
</tr>
<tr>
<td>CONF 385</td>
<td>International Field Experience</td>
<td></td>
</tr>
<tr>
<td>CONF 485</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONF 499</td>
<td>Independent Research in Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

Concentrations

There are seven concentrations:

- Concentration in Building Peace in Divided Societies (BPDS) (p. 946)
- Concentration in Global Engagement (GLBE) (p. 946)
- Concentration in Political and Social Action (PSA) (p. 946)
- Concentration in Justice and Reconciliation (JRCN) (p. 946)
- Concentration in Interpersonal Dynamics (INTD) (p. 947)
- Concentration in Collaborative Leadership (CLDR) (p. 947)

To fulfill the concentration requirement students select six concentration courses. Four of those six courses must be taken from within their chosen concentration. The remaining two concentration courses may be taken from any of the concentration course lists. Special topics courses relevant to the concentration and/or courses that provide regional expertise can be substituted with departmental approval. Students are encouraged to check special topics courses each semester and think creatively about the applicability of courses that support learning in their chosen concentration. At least two of the six concentration courses must be CONF courses. Courses may not double count for the concentration requirement and the skills and practice requirement.
**Concentration in Building Peace in Divided Societies (BPDS)**
Focuses on how divided societies with a history of conflict seek to transform relationships and situations of violence and injustice. Examines communities and societies that have experienced conflict and how individuals and groups build peace locally and globally.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select at least four of the six concentration courses from the following:</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>CONF 325</td>
<td>Dialogue and Difference</td>
<td></td>
</tr>
<tr>
<td>CONF 335</td>
<td>Justice and Reconciliation</td>
<td></td>
</tr>
<tr>
<td>CONF 393</td>
<td>Violence: Causes, Dynamics Alternatives</td>
<td></td>
</tr>
<tr>
<td>CONF 435</td>
<td>Building Peace in Divided Societies</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CULT 320</td>
<td>Globalization and Culture</td>
<td></td>
</tr>
<tr>
<td>ECON 360</td>
<td>Economics of Developing Areas (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>GOVT 342</td>
<td>Diplomacy</td>
<td></td>
</tr>
<tr>
<td>HIST 373</td>
<td>The Civil War and Reconstruction</td>
<td></td>
</tr>
<tr>
<td>INTS 305</td>
<td>Conflict Resolution and Transformation</td>
<td></td>
</tr>
<tr>
<td>SOCI 320</td>
<td>Globalization and Social Change (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

**Concentration in Global Engagement (GLBE)**
Focuses on studying the dynamics and impact of global conflict resolution. Examines domestic and international dimensions of security, state-to-state conflict, internal wars, terrorism, migration, negotiation, and diplomacy. Explores what can be done to reduce violent conflict and increase peace and security.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Select at least four of the six concentration courses from the following:</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>CONF 335</td>
<td>Justice and Reconciliation</td>
<td></td>
</tr>
<tr>
<td>CONF 345</td>
<td>Social Dynamics of Terrorism, Security, and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 385</td>
<td>International Economic Policy</td>
<td></td>
</tr>
<tr>
<td>EVPP 337</td>
<td>Environmental Policy Making in Developing Countries</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 307</td>
<td>Geographic Approaches on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>GOVT 322</td>
<td>International Relations Theory</td>
<td></td>
</tr>
<tr>
<td>GOVT 342</td>
<td>Diplomacy</td>
<td></td>
</tr>
<tr>
<td>GOVT 446</td>
<td>International Law and Organization</td>
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</tr>
<tr>
<td>INTS 416</td>
<td>Refugee and Internal Displacement (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 388</td>
<td>Violence and Religion</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

**Concentration in Political and Social Action (PSA)**
Focuses on the ways that people organize themselves to effect change in their societies. This concentration explores social action, social organization, social movements, and civil resistance to analyze and investigate the role of constructive conflict.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Select at least four of the six concentration courses from the following:</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>CONF 393</td>
<td>Violence: Causes, Dynamics Alternatives</td>
<td></td>
</tr>
<tr>
<td>CONF 394</td>
<td>Human Rights and Inequality</td>
<td></td>
</tr>
<tr>
<td>COMM 326</td>
<td>Rhetoric of Social Movements and Political Controversy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 309</td>
<td>Economic Problems and Public Policies (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>GOVT 301</td>
<td>Public Law and the Judicial Process</td>
<td></td>
</tr>
<tr>
<td>GOVT 364</td>
<td>Public Policy Making</td>
<td></td>
</tr>
<tr>
<td>INTS 304</td>
<td>Social Movements and Community Activism (Mason Core)</td>
<td></td>
</tr>
<tr>
<td>INTS 334</td>
<td>Environmental Justice (Mason Core) (p. 142)</td>
<td></td>
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<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 427</td>
<td>Community Engagement for Social Change (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 307</td>
<td>Social Movements and Political Protest</td>
<td></td>
</tr>
<tr>
<td>SOCI 340</td>
<td>Power, Politics, and Society</td>
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<tr>
<td>SOCI 352</td>
<td>Social Problems and Solutions (Mason Core)</td>
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</tbody>
</table>

Total Credits 12

**Concentration in Justice and Reconciliation (JRCN)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Select four of the six concentration courses from the following:</td>
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<td></td>
</tr>
<tr>
<td>CONF 335</td>
<td>Justice and Reconciliation</td>
<td></td>
</tr>
<tr>
<td>CONF 394</td>
<td>Human Rights and Inequality</td>
<td></td>
</tr>
<tr>
<td>CONF 435</td>
<td>Building Peace in Divided Societies</td>
<td></td>
</tr>
<tr>
<td>CRIM 307</td>
<td>Social Inequality, Crime, and Justice</td>
<td></td>
</tr>
<tr>
<td>CRIM 404</td>
<td>Crime Victims and Victimization</td>
<td></td>
</tr>
<tr>
<td>CRIM 406</td>
<td>Family Law and the Justice System</td>
<td></td>
</tr>
<tr>
<td>INTS 300</td>
<td>Law and Justice (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 314</td>
<td>Conflict, Trauma and Healing (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>INTS 362</td>
<td>Social Justice and Human Rights (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PSYC 427</td>
<td>Community Engagement for Social Change (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 308</td>
<td>Race and Ethnicity in a Changing World</td>
<td></td>
</tr>
<tr>
<td>SOCI 355</td>
<td>Social Inequality (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12
Concentration in Interpersonal Dynamics (INTD)
Focuses on the dynamics of social interaction that lead to interpersonal conflict and the processes and skills that support the transformation of these conflicts. Issues examined include intercultural communication, psychology of groups, family relationships, and other dimensions of human relations.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 325</td>
<td>Dialogue and Difference</td>
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</tr>
<tr>
<td>CONF 425</td>
<td>Mediating Conflict</td>
<td></td>
</tr>
<tr>
<td>COMM 301</td>
<td>Relational Communication Theory</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>COMM 401</td>
<td>Interpersonal Communication in the Workplace</td>
<td></td>
</tr>
<tr>
<td>INTS 317</td>
<td>Issues in Family Relationships (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>PSYC 231</td>
<td>Social Psychology (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>PSYC 379</td>
<td>Applied Cross-Cultural Psychology (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>PSYC 417</td>
<td>Science of Well Being</td>
<td></td>
</tr>
<tr>
<td>PSYC 467</td>
<td>The Psychology of Working in Groups and Teams</td>
<td></td>
</tr>
<tr>
<td>SOCI 309</td>
<td>Marriage, Families, and Intimate Life</td>
<td></td>
</tr>
<tr>
<td>SOCI 315</td>
<td>Contemporary Gender Relations</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

Concentration in Collaborative Leadership (CLDR)
Focuses on improving the capacity of leaders to work with conflict and manage change. Includes topics in conflict transformation, mediation, dialogue, and organizational leadership.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 325</td>
<td>Dialogue and Difference</td>
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</tr>
<tr>
<td>COMM 201</td>
<td>Small Group Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 335</td>
<td>Organizational Communication</td>
<td></td>
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<tr>
<td>GOVT 351</td>
<td>Administration in the Political System</td>
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<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td></td>
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<tr>
<td>INTS 404</td>
<td>Ethics and Leadership</td>
<td></td>
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<tr>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
<td></td>
</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>PRLS 316</td>
<td>Leadership and Outdoor Education</td>
<td></td>
</tr>
<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
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</tr>
<tr>
<td>PSYC 335</td>
<td>Psychology of Creativity and Innovation</td>
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</tr>
</tbody>
</table>

Total Credits: 12

Individualized Concentration (IND)
Students interested in creating their own concentration can work with an advisor to decide upon a set of at least six courses that will fulfill the requirements of the BS in Conflict Analysis and Resolution.

Writing-Intensive Requirement
All Mason students are required to complete at least one course designated as "writing intensive" in their major at the 300-level or above. CONF 302 Culture, Identity, and Conflict has been designated "writing intensive."

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remaining credits needed to bring the degree total to 120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>may be fulfilled with general elective courses.</td>
<td></td>
</tr>
</tbody>
</table>

1 Up to 3 credits of 100 level Recreation (RECR) courses may be taken as general elective credits.

2 Only Military Science (MLSC) courses at the 400-level can be used for credit for a degree in the School; credit for other MLSC courses may not be applied toward a degree in the School.

Mason Core
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation Requirements</td>
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</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 40

Integration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

2 Minimum 3 credits required.

Accelerated Master's
Conflict Analysis and Resolution, BA or BS/Conflict Analysis and Resolution, Accelerated MS
Overview
This accelerated Master's option is designed for highly qualified and motivated undergraduate students that have completed at least 6 credit
hours of CONF coursework at the time of application. If accepted, students may take up to 12 credits of graduate coursework before undergraduate degree conferral and will be able to earn an undergraduate degree and the Conflict Analysis and Resolution, MS (p. 951) after satisfactory completion of at least 147 credits. The time period for the combined program is typically five years. It provides a streamlined MS application process with no additional application fee.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Application Requirements
For specific application requirements and information for the accelerated Conflict Analysis and Resolution, MS (p. 951), see Eligibility, Policies, and Deadlines (http://scar.gmu.edu/undergraduate/degrees/accelerated-masters). Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

Students must have a minimum undergraduate cumulative GPA of 3.25 at the time of application.

Accelerated Master’s Requirements
• During the first semester in senior status admitted students may take up to 6 credits (1-2 classes) that will count towards both their undergraduate AND graduate degrees. During the second semester of senior status, students may take up to 6 credits (1-2 classes) that will count towards the graduate degree only.
• Students must begin their master’s program the semester immediately following conferral of the undergraduate degree and will be expected to complete all remaining graduate program requirements within five years.
• See the program website (https://scar.gmu.edu/academics/undergraduate/accelerated-masters) for additional information.

Accelerated MS Requirements
• No grade below a B is permitted for any undergraduate or graduate CONF course taken after application to the accelerated master’s program until completion of the undergraduate program.
• If a student receives a grade below a B in any CONF course after acceptance in the program, they will not be allowed to continue on to the master’s program. Students that have received a grade below a B in a CONF course after acceptance into the program may re-apply to the master’s program after conferral of the undergraduate degree; however, re-application does not guarantee admission.
• At the time of the undergraduate degree conferral, students’ GPAs must meet the standard required for admission to the master’s degree.
• Students may not take more than 12 credits a semester if taking two graduate courses or 15 credits a semester if taking one graduate course.

Bachelor’s Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Religious Studies Concentration)

Overview
Highly-qualified undergraduates in selected majors (see below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in religious studies. If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s in interdisciplinary studies with a concentration in religious studies after satisfactory completion of 150 credits, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Selected Majors
• Art history (p. 394)
• Philosophy (p. 442)
• Conflict analysis and resolution (p. 936)
• Global affairs (p. 523)
• History (p. 402)
• Religious studies (p. 491)
• Russian and Eurasian studies (p. 568)
• Sociology (p. 507)
• Anthropology (p. 497)

If the student has not majored in religious studies (p. 491), it is preferred, though not required, that the student have a minor in religious studies (p. 496).

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application).

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all coursework. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
<td></td>
</tr>
<tr>
<td>RELI 632</td>
<td>Interreligious Dialogue</td>
<td></td>
</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
</tbody>
</table>
As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. To apply these credits to the master’s degree, students should use the Bachelor’s/Accelerated Master’s Transition Form.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 600</td>
<td>Interdisciplinary Pathways in the Study of Religion</td>
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</tr>
<tr>
<td>RELI 630</td>
<td>Theories and Methods in the Study of Religion</td>
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<td>RELI 632</td>
<td>Interreligious Dialogue</td>
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</tr>
<tr>
<td>RELI 633</td>
<td>Issues in Religious Ethics</td>
<td></td>
</tr>
<tr>
<td>RELI 636</td>
<td>Religion and the Natural Environment</td>
<td></td>
</tr>
<tr>
<td>RELI 637</td>
<td>Religion and Secularity in State and Society</td>
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</tbody>
</table>

**Total Credits** 6

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Bachelor’s Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Social Justice and Human Rights Concentration)**

**Overview**

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in social justice and human rights (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn an undergraduate degree in their chosen major and a master’s in interdisciplinary studies with a concentration in social justice and human rights after satisfactory completion of 150 credits, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Selected Majors**

Anthropology (p. 497), Environmental and Sustainability Studies (p. 576), Sociology (p. 507), English (p. 370), History (p. 394), Philosophy (p. 442), Conflict Analysis and Resolution (p. 938), Psychology (p. 461), Government and International Politics (p. 972), Integrative Studies (p. 593), and Communication (p. 314).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). For information specific to the accelerated MAIS, see Application Requirements and Deadlines (http://mais.gmu.edu/programs/la-mais-isin/application) on the departmental web site.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete INTS 540 Contemporary Issues in Social Justice Human Rights and one course chosen from the list of electives for the MAIS concentration in social justice and human rights as indicated on their Accelerated Master’s Program Application with a minimum grade of B in each course. Once admitted to the accelerated master’s pathway, students must maintain a minimum cumulative GPA of 3.25 in all course work. Upon completion and conferral of the undergraduate degree in the semester indicated in the application, they submit the Bachelor’s/Accelerated Master’s Transition Form and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. They must meet all master’s degree requirements except for the two courses (6 credits) they completed as undergraduates. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit (chosen from the list of electives for the MAIS concentration in social justice and human rights). These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Bachelor’s Degree (selected)/Interdisciplinary Studies, Accelerated MAIS (Women and Gender Studies Concentration)**

**Overview**

Highly-qualified undergraduates in select majors (listed below) may apply to the accelerated master’s degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in women and gender studies (p. 576). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in women and gender studies (p. 542). If accepted, and depending on their undergraduate major, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in interdisciplinary studies with a concentration in women and gender studies (p. 542).
Conflict Analysis and Resolution Minor

Banner Code: CONF

This minor provides students with the theory and skills to examine how and why conflicts occur and what can be done to mitigate their destructive aspects while reinforcing their constructive potential. Courses in the minor highlight relational, social, structural, and cultural factors that influence conflict and its resolution. This minor engages students in understanding the complexity of contemporary issues and problems and can be applied to many fields of study or professional careers.

Advising
Advisors help students create a course of study that meets their interests and career goals. All majors and minors are strongly encouraged to meet regularly with an academic advisor from the School who will help students develop and follow a coherent plan of study and complete the degree in a timely manner.

Admissions & Policies

Admissions
This minor is open to all undergraduate students.

Policies
Students pursuing this minor must complete 15 credits of coursework in conflict analysis and resolution with a minimum GPA of 2.00. Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15

Required Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 101</td>
<td>Conflict and Our World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or CONF 210</td>
<td>Theories of Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 302</td>
<td>Culture, Identity, and Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 320</td>
<td>Interpersonal Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 330</td>
<td>Community, Group, and Organizational Conflict Analysis and Resolution</td>
<td></td>
</tr>
</tbody>
</table>

The ability to take courses, including ones not listed above, for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. Permission is normally granted only to qualified Mason seniors within 15 hours of graduation. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).
Conf 340  Global Conflict Analysis and Resolution (Mason Core) (p. 142)

Total Credits 9

CONF Selective Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select six conflict analysis and resolution (CONF) credits from core, elective and special topic courses (p. 1488)</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits 6

Conflict Analysis and Resolution, MS

Banner Code: CA-MS-CONF

This professional program prepares students for practice and further academic work by integrating conflict analysis and resolution theory, research, and practical techniques. Participants study the theory, methods, and ethical perspectives of the field, and apply this knowledge in laboratory simulations and workshops, internships, and field practice. Graduates work in a variety of settings where conflict resolution is useful and interest groups are in conflict with current and emergent public policy. Examples are businesses, unions, government agencies, religious groups, court systems, educational institutions, community centers, international relief and development organizations, and consulting firms.

Admissions & Policies

Admissions

Admission Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). In addition, applicants must submit all undergraduate and graduate transcripts; two letters of recommendation, one of which should be from a faculty member in the applicant's undergraduate or graduate major field; a resume or curriculum vitae; and a 750- to 1,000-word essay on goals and reasons for seeking admission to the program. GRE or other standardized test scores are not required but may be submitted. The TOEFL is required of international students. For more information, see Admission of International Students (p. 71). Students can be admitted to the MS program for either the Fall or Spring semesters.

Background courses in social sciences, as well as prior work experience, are desirable. Prior graduate academic work is evaluated on an individual basis for possible transfer credit and fulfillment of program requirements; however, Mason usually does not reduce the total credits required for the degree. Students may enroll on a full- or part-time basis. The MS Program is available on-campus, online (https://masononline.gmu.edu/programs/conflict-analysis-and-resolution-ms) or in a hybrid format (on-campus and distance learning).

Policies

Mason requires all students to complete the master’s degree within six years of their official admission date.

Consult the S-CAR student handbook for information on registration procedures.

Transfer of Non-Degree Credit

A maximum of 12 credits of S-CAR graduate courses taken at George Mason as a non-degree graduate student, or as part of S-CAR’s graduate certificate program may be transferred into the MS program. How credit will be counted will be determined in consultation with the admitted student’s advisor. A maximum of six credits of non-S-CAR courses taken as non-degree credit can be counted toward the MS program. Courses counted toward another degree cannot be transferred.

Adding an S-CAR Certificate Program

Students may elect to complete an S-CAR Graduate Certificate (p. 937) in addition to the MS program. Graduate certificates are opportunities for students to further tailor their academic program and specialize in a specific area of conflict resolution practice. Certain graduate certificate courses can be used to fulfill MS program requirements. Students should consult with the Certificate Program Director and the Master’s Program Director for policies on counting certificate courses toward the MS degree.

Requirements

Degree Requirements

Total credits: 33

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Introductory Course 1</td>
<td></td>
</tr>
<tr>
<td>CONF 600</td>
<td>Foundations of Conflict Analysis and Resolution</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Conflict Inquiry</td>
<td></td>
</tr>
<tr>
<td>CONF 610</td>
<td>Conflict Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>or CONF 660</td>
<td>Conflict Assessment and Program Evaluation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conflict Praxis 2</td>
<td></td>
</tr>
<tr>
<td>CONF 657</td>
<td>Facilitation Skills</td>
<td>3</td>
</tr>
<tr>
<td>CONF 625</td>
<td>Engaging Conflict</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

1 Students must take the introductory course in the first semester.

2 Students must take CONF 657 Facilitation Skills and at least 3 credits of CONF 625 Engaging Conflict. Additional credits of CONF 625 Engaging Conflict will count as electives.

Concentration in Social Justice Advocacy and Activism (SJAA)

This concentration will be geared towards students who want to work in communities both in the United States and internationally on issues of social justice and critical human rights promotion.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select nine credits from the following:</td>
<td></td>
</tr>
<tr>
<td>CONF 733</td>
<td>Law and Justice from a Conflict Perspective</td>
<td>9</td>
</tr>
<tr>
<td>CONF 728</td>
<td>Human Rights Theory and Practice in Comparative Perspective</td>
<td></td>
</tr>
<tr>
<td>CONF 722</td>
<td>Conflict and Religion</td>
<td></td>
</tr>
<tr>
<td>CONF 723</td>
<td>Conflict and Gender</td>
<td></td>
</tr>
</tbody>
</table>
Conflict Analysis and Resolution, MS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 747</td>
<td>Reconciliation</td>
<td></td>
</tr>
<tr>
<td>CONF 651</td>
<td>Collaborative Community Action Participation</td>
<td></td>
</tr>
<tr>
<td>CONF 658</td>
<td>Diversity and Difference in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 682</td>
<td>Principles of Environmental Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 740</td>
<td>Addressing Intractable Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 756</td>
<td>Ethics and Conflict</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Professional Opportunities: Conflict Resolution NGOs, Advocacy NGOs, Human Right Organizations, International

Concentration in Dynamics of Violence (DYNV)

This concentration is geared towards students who are interested in understanding the various manifestations of violence, structural sources of violence, networks of violence that straddle the divides between domestic and international contexts and who want to work on violence prevention both in the United States and internationally.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 729</td>
<td>Micro-theories of Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 754</td>
<td>Dynamics of Civil Wars</td>
<td></td>
</tr>
<tr>
<td>CONF 653</td>
<td>World Religions, Diplomacy, and Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 748</td>
<td>Conflict and Gender</td>
<td></td>
</tr>
<tr>
<td>CONF 723</td>
<td>Gender and Violence</td>
<td></td>
</tr>
<tr>
<td>CONF 730</td>
<td>Structural Sources of Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 739</td>
<td>Social Dynamics of Terrorism</td>
<td></td>
</tr>
<tr>
<td>CONF 754</td>
<td>Micro-theories of Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 702</td>
<td>Peace Studies</td>
<td></td>
</tr>
<tr>
<td>CONF 706</td>
<td>Ethics and Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 720</td>
<td>Ethnic and Cultural Factors in Conflict Resolution</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Professional Opportunities: Conflict Resolution NGOs, Advocacy NGOs, International Peacebuilding NGOs, USAID, State Department, Human Rights, Resilience, Community Development, Humanitarian NGOs, Courts, Ombudsmen, Public Schools, Private Sector

Concentration in Inclusive Conflict Engagement (ICEN)

This concentration prepares students for working to resolve conflicts and address divided cultures, societies, and organizations as advocates, mediators, peace-builders, and insider-partialists. It will also prepare students for working with an intersectional awareness of diversity.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 741</td>
<td>Negotiations</td>
<td></td>
</tr>
<tr>
<td>CONF 704</td>
<td>Narrative Approaches to Conflict Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Professional Opportunities: Gang Violence Prevention, Sexual Assault Prevention, Domestic Violence Prevention, Police, Conflict Resolution NGOs, Think Tanks, Development NGOs, Humanitarian organizations, USAID, State Department, UN

Concentration in Conflict-Sensitive Development and Resilience (CSDR)

This concentration will be geared towards students who wish to work in development and humanitarian assistance fields, bringing in-depth knowledge of conflict dynamics to improving communities’ capacity to adapt to change and be resilient in times of social, economic, and political stress.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 751</td>
<td>Dynamics of Civil Wars</td>
<td></td>
</tr>
<tr>
<td>CONF 723</td>
<td>Conflict and Gender</td>
<td></td>
</tr>
<tr>
<td>CONF 707</td>
<td>Gender and Violence</td>
<td></td>
</tr>
<tr>
<td>CONF 728</td>
<td>Human Rights Theory and Practice in Comparative Perspective</td>
<td></td>
</tr>
<tr>
<td>CONF 652</td>
<td>Conflict Analysis and Resolution for Prevention, Reconstruction, and Stabilization Contexts</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Professional Opportunities: Conflict Resolution NGOs, Advocacy NGOs, International Peacebuilding NGOs, USAID, State Department, Human Rights, Resilience, Community Development, Humanitarian NGOs, Courts, Ombudsmen, Public Schools, Private Sector
George Mason University

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 731</td>
<td>Conflict in Organizations</td>
<td></td>
</tr>
<tr>
<td>CONF 659</td>
<td>Leadership in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 740</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONF 705</td>
<td>Conflict and Discourse Analysis</td>
<td></td>
</tr>
<tr>
<td>CONF 651</td>
<td>Collaborative Community Action Participatory Governance</td>
<td></td>
</tr>
<tr>
<td>CONF 650</td>
<td>Conflict Analysis and Resolution Advanced Skills</td>
<td></td>
</tr>
<tr>
<td>CONF 755</td>
<td>Transforming Conflict through Insight</td>
<td></td>
</tr>
<tr>
<td>CONF 708</td>
<td>Identity and Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 722</td>
<td>Conflict and Religion</td>
<td></td>
</tr>
<tr>
<td>CONF 704</td>
<td>Narrative Approaches to Conflict Analysis</td>
<td></td>
</tr>
<tr>
<td>CONF 730</td>
<td>Structural Sources of Conflict</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 9

**Professional Opportunities**: Conflict Resolution NGOs, Humanitarian organizations, development NGOs, USAID, UN, State Department

### Concentration in Media, Narrative, and Public Discourse (MNPD)

This concentration is designed for students who wish to work with and create representation, communication, media, discourse and narratives related to conflict.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 705</td>
<td>Conflict and Discourse Analysis</td>
<td></td>
</tr>
<tr>
<td>CONF 704</td>
<td>Narrative Approaches to Conflict Analysis</td>
<td></td>
</tr>
<tr>
<td>CONF 757</td>
<td>Conflict and Literature</td>
<td></td>
</tr>
<tr>
<td>CONF 625</td>
<td>Engaging Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 758</td>
<td>Social Dynamics of Terrorism</td>
<td></td>
</tr>
</tbody>
</table>

Additional courses under development

**Total Credits**: 9

**Professional Opportunities**: Journalism, Media, Communications, Conflict Resolution NGOs, Advocacy NGOs, International NGOs, Film Production

### Individualized Concentration (IND)

Students will also be able to craft their own 9 credit concentration with the approval of MS Program Director.

### Electives

Select 9 credits of elective courses from any 500, 600, or 700 level CONF courses, except required courses. (p. 1488)

**Total Credits**: 9

Students will need to declare their concentration by the start of their second semester of study. Students will need to take 9 credits of courses within the concentration to meet the concentration's distribution requirement.

Because the choice of courses within concentrations can vary significantly according to individual goals or needs, each student should develop a plan of study that should be discussed once each semester with the advisor and updated as appropriate.

With the advisor's approval, each student is eligible to include a maximum of six credits of electives from outside the S-CAR program, including courses in other Mason departments, consortium courses, and transfer courses from other universities.

Students wishing to complete a Master's Thesis or Internship would count these credits towards their elective requirement.

### Internship

The CONF 694 Internship internship course provides students with opportunities to use and develop conflict resolution skills, integrate theory and practice of conflict analysis and resolution, and network with professionals in the field to enhance employment opportunities. The internship requires 160 hours of supervised work per every 3 credits. The goals and objectives of the internship are defined in an application and memorandum of agreement to be signed by the student, the internship site supervisor, and the director of field experience before the internship begins.

Students may either take 3 or 6 credits of CONF 694 Internship.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 694</td>
<td>Internship (take 3 or 6 credits)</td>
<td>1-6</td>
</tr>
</tbody>
</table>

### Thesis

Students wishing to complete a Master's Thesis are strongly encouraged to take CONF 797 Proposal Development (Proposal Development) the semester before beginning the thesis project. Before registering, students must have identified a Master’s thesis committee chair to supervise the project. Students should contact S-CAR student services to receive the CRN to register for thesis.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 797</td>
<td>Proposal Development</td>
<td>1</td>
</tr>
<tr>
<td>CONF 799</td>
<td>Thesis</td>
<td>1-6</td>
</tr>
</tbody>
</table>

### Directed Readings

Only two directed readings may be applied toward requirements for the master's degree (maximum 6 credits).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 697</td>
<td>Directed Readings and Research</td>
<td>1-3</td>
</tr>
</tbody>
</table>

### Dual Degree Options

#### Dual Degree Program with the University of Malta

Students have the opportunity to pursue a MS in Conflict Analysis and Resolution from George Mason University and a MA in Conflict Resolution and Mediterranean Security from the University of Malta through an innovative Dual Degree Program. Teaching faculty includes professors from both George Mason University and the University of Malta. All teaching is in English and all classes are held at the Valetta Campus of the University of Malta. The 400-year-old University of Malta Valletta campus incorporates state-of-the-art instructional technology. The entire program is delivered over three intensive semesters on a full time basis starting in late September. Classes are held on a two week intensive block basis for the first two semesters while the third semester is devoted to the completion of a thesis.
Orientation in Malta begins at the end of September. Classes run from the beginning of October through June. Students work on their theses from June until October. University of Malta graduation is in November and Mason graduation is in December. The total duration of the program is 15 months. More information is available at the program website (http://scar.gmu.edu/academics/maltaprogram). US and Canadian students apply through the Mason graduate admissions process and indicate they want to participate in the Malta program. All other students should apply through the University of Malta. (http://www.um.edu.mt/imp)

Conflict Analysis and Resolution, MS and Social Work, MSW Dual Degree

The Department of Social Work (p. 279) and the School for Conflict Analysis and Resolution (p. 936) have joined forces to offer a three year dual-degree program. Students can earn both an MSW (p. 284) and an MS in Conflict Analysis and Resolution (p. 951) while taking advantage of the diversity of the Washington, D.C., metropolitan area and the university’s proximity to the nation’s capital. This is the only dual-degree program of its kind.

Admission Requirements

Applicants must meet the admission standards and application requirements specified in Graduate Admissions (p. 68) and apply using the online Application for Graduate Admission (http://admissions.gmu.edu). The application process is competitive, and applications are considered for the fall semester only.

Students interested in the 3-year dual degree program submit one online Application for Graduate Admission (http://admissions.gmu.edu), select the MSW in Social Work (p. 284) as a primary program, and submit all application support materials to the Office of Graduate Admission in the College of Health and Human Services. Applicants should communicate their interest in completing the dual degree program in their essays, and recommendations should address the dual program interest. Students must be admitted to both programs (fall only) to be admitted to the dual degree program.

For application deadlines and detailed application requirements please refer to the CHHS Admissions website (https://chhs.gmu.edu/admissions/graduate-admissions/standards-requirements-and-deadlines). Interested students should consult the MSW program website (https://socialwork.gmu.edu/program/view/19658), the MSW program (p. 284), and the MSW program director for additional information prior to applying.

Transfer of Credit

Transfer credit is governed AP6.5.3 Transfer of Credit (p. 92) and AP6 Graduate Policies (p. 90). Transfer credits must be approved by the program director and the dean. Students who enroll initially through non-degree studies should seek course advising through the department prior to taking a course and plan to submit their application to the dual degree program as soon as possible.

Please refer to the Transfer of Credit policy for the MSW in Social Work (p. 284) for departmental policy governing courses taken at another institution and the maximum number of credits allowed.

MSW-MS Degree Requirements

<table>
<thead>
<tr>
<th>Social Work Courses</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 600</td>
<td></td>
<td>Foundations of Social Work and Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 623</td>
<td></td>
<td>Human Behavior and Social Systems</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 624</td>
<td></td>
<td>Human Behavior and Social Systems II</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 651</td>
<td></td>
<td>Social Policies, Programs, and Services</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 652</td>
<td></td>
<td>Influencing Social Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 657</td>
<td></td>
<td>Direct Social Work Practice I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 658</td>
<td></td>
<td>Direct Social Work Practice II</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 672</td>
<td></td>
<td>Generalist Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 673</td>
<td></td>
<td>Generalist Field Practicum and Seminar II</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 687</td>
<td></td>
<td>Empowering Communities for Change</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 688</td>
<td></td>
<td>Program Evaluation for Social Workers 1</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 695</td>
<td></td>
<td>Specialist Social Change Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 694</td>
<td></td>
<td>Specialist Social Change Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 697</td>
<td></td>
<td>Conflict Assessment and Program Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 30-33

1 Students complete only one of SOCW 688 or CONF 660.

Social Change Specialization (SOCC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 684</td>
<td>Social Work and the Law</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 685</td>
<td>Organizational Leadership for Social Workers</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 694</td>
<td>Specialist Social Change Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 695</td>
<td>Specialist Social Change Field Practicum and Seminar II</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two courses from the following. At least one course must be an Advanced Policy Course.

Advanced Policy

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 653</td>
<td>Immigration Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 654</td>
<td>Social Policy for Children and Youth</td>
<td></td>
</tr>
<tr>
<td>SOCW 655</td>
<td>Aging Programs and Policies</td>
<td></td>
</tr>
<tr>
<td>SOCW 663</td>
<td>Global Human Rights Policy</td>
<td></td>
</tr>
<tr>
<td>SOCW 665</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>6</td>
</tr>
</tbody>
</table>

Additional Course Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 630</td>
<td>Forensic Social Work Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 664</td>
<td>Creative Arts in Social Work Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 674</td>
<td>Psychopathology</td>
<td></td>
</tr>
<tr>
<td>SOCW 675</td>
<td>Selected Topics in Clinical Practice</td>
<td></td>
</tr>
<tr>
<td>SOCW 676</td>
<td>Selected Topics in Social Work and Social Change</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 677</td>
<td>Family Therapy</td>
<td></td>
</tr>
<tr>
<td>SOCW 678</td>
<td>Trauma and Recovery</td>
<td></td>
</tr>
<tr>
<td>SOCW 679</td>
<td>Military Social Work</td>
<td></td>
</tr>
<tr>
<td>SOCW 682</td>
<td>Substance Abuse Interventions</td>
<td></td>
</tr>
<tr>
<td>SOCW 689</td>
<td>Clinical Practice with Older Adults</td>
<td></td>
</tr>
<tr>
<td>SOCW 697</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18
## Clinical Practice Specialization (CLNP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 640</td>
<td>Advanced Clinical Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 674</td>
<td>Psychopathology</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 692</td>
<td>Specialist Clinical Field Practicum and Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 693</td>
<td>Specialist Clinical Field Practicum and Seminar II</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two courses from the following. At least one course must be an Advanced Policy Course.

### Advanced Policy

- SOCW 653 Immigration Policy
- SOCW 654 Social Policy for Children and Youth
- SOCW 655 Aging Programs and Policies
- SOCW 663 Global Human Rights Policy
- SOCW 665
- SOCW 676 Selected Topics in Social Work and Social Change

### Additional Course Options

- SOCW 664 Creative Arts in Social Work Practice
- SOCW 675 Selected Topics in Clinical Practice
- SOCW 677 Family Therapy
- SOCW 678 Trauma and Recovery
- SOCW 679 Military Social Work
- SOCW 682 Substance Abuse Interventions
- SOCW 689 Clinical Practice with Older Adults

Total Credits: 18

## Conflict Analysis and Resolution Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 600</td>
<td>Foundations of Conflict Analysis and Resolution</td>
<td>6</td>
</tr>
<tr>
<td>CONF 610</td>
<td>Conflict Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>CONF 657</td>
<td>Facilitation Skills</td>
<td>3</td>
</tr>
<tr>
<td>CONF 625</td>
<td>Engaging Conflict 1</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

1. CONF 657 Facilitation Skills should be completed before a student takes CONF 625 Engaging Conflict.

## Electives

Select 12 credits of CONF Electives with approval from S-CAR (p. 1488)

Total Credits: 12

## Accelerated Master's

### Conflict Analysis and Resolution, BA or BS/Conflict Analysis and Resolution, Accelerated MS

**Overview**

This accelerated Master's option is designed for highly qualified and motivated undergraduate students that have completed at least 6 credit hours of CONF coursework at the time of application. If accepted, students may take up to 12 credits of graduate coursework before undergraduate degree conferral and will be able to earn an undergraduate degree and the Conflict Analysis and Resolution, MS (p. 951) after satisfactory completion of at least 147 credits. The time period for the combined program is typically five years. It provides a streamlined MS application process with no additional application fee.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

### Application Requirements

For specific application requirements and information for the accelerated Conflict Analysis and Resolution, MS (p. 951), see Eligibility, Policies, and Deadlines (http://scar.gmu.edu/undergraduate/degrees/accelerated-masters). Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68).

Students must have a minimum undergraduate cumulative GPA of 3.25 at the time of application.

### Accelerated Master's Requirements

- During the *first semester in senior status* admitted students may take up to 6 credits (1-2 classes) that will count towards both their undergraduate AND graduate degrees. During the *second semester of senior status*, students may take up to 6 credits (1-2 classes) that will count towards the graduate degree only.

- Students must begin their master's program the semester immediately following conferral of the undergraduate degree and will be expected to complete all remaining graduate program requirements within five years.

- See the program website (https://scar.gmu.edu/academics/undergraduate/accelerated-masters) for additional information.

### Accelerated MS Requirements

- No grade below a B is permitted for any undergraduate or graduate CONF course taken after application to the accelerated master’s program until completion of the undergraduate program.

- If a student receives a grade below a B in any CONF course after acceptance in the program, they will not be allowed to continue on to the master's program. Students that have received a grade below a B in a CONF course after acceptance into the program may re-apply to the master’s program after conferral of the undergraduate degree; however, re-application does not guarantee admission.

- At the time of the undergraduate degree conferral, students' GPAs must meet the standard required for admission to the master's degree.

- Students may not take more than 12 credits a semester if taking two graduate courses or 15 credits a semester if taking one graduate course.

## Conflict Analysis and Resolution Graduate Certificate

Banner Code: CA-CERG-CONF
This 15-credit certificate is specifically tailored to provide students with practical knowledge of conflict analysis and resolution relevant to their focused areas of work. Designed for mid-career professionals studying in a cohort environment, the certificate programs integrate conflict analysis and resolution theory, research, and practical technique. These programs use intensive course sessions, lecture, seminar, and applied mentored learning in real and simulated situations to prepare students to use conflict analysis and resolution approaches in their work in a variety of fields. Students choose one of four concentrations.

This certificate may only be pursued on a part-time basis, unless a student is concurrently enrolled in another degree program or takes additional courses over those required for the certificate program. Some courses are offered only in intensive Saturday and Sunday formats or online.

Concentrations

Advanced Skills
The Advanced Skills concentration covers conflict resolution skills in challenging conflicts and considers innovative and emerging practices. This concentration considers the complexity of conflict in a variety of different settings and prepares students to design and implement interventions for difficult conflicts. The concentration emphasizes skill development.

Prevention and Reconstruction Contexts
The Prevention and Stabilization Contexts concentration augments development, defense, security, or humanitarian aid work experience with the theories and skills of conflict analysis and resolution for designing, implementing, and evaluating conflict-sensitive initiatives internationally in areas of potential violence and post-conflict reconstruction and stabilization. Considers cross-sectoral approaches to long-term violence prevention and constructive conflict resolution.

World Religions and Peacebuilding
The World Religions and Peacebuilding concentration considers strategies to reduce global violence and terrorism by incorporating the best moral practices of religious communities into policy planning, diplomacy, civil society building and democratization. Covers strategies to elicit moderate moral religious expression in conflict regions to strengthen civil society and democracy.

Collaborative Community Action
All communities have conflicts, some much more severe than others, often driven by deep racial and ethnic divisions, economic inequity, complex intractable problems, and environmental degradation. Many community conflicts are triggered by changes, whether a new law or new development. These are among the many issues that effective, inclusive, collaborative community processes can help address. This concentration incorporates theory and skills needed to identify concerns and design collaborative processes that employ a wide range of design options ranging from small group dialogue to facilitated consensus building and online engagement to thousand person town meetings.

Admissions & Policies

Admissions Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Applicants to this certificate must submit an undergraduate transcript showing completion of an undergraduate degree or equivalent, a cover letter specifying interest in the program, two letters of recommendation, and a curriculum vitae or résumé indicating relevant work experience.

In addition, prior work experience in areas related to the chosen graduate certificate is desirable. GRE or other standardized test scores are not required but may be submitted. The TOEFL is required of international students. For more information, see Admission of International Students (p. 71).

Policies

Class Schedule
Please note that some classes for this graduate certificate are offered only in Saturday and Sunday sessions. Please check the Schedule of Classes for each term to identify course meeting dates, and specific add/drop dates for these partial semester courses.

Requirements

Certificate Requirements
Total credits: 15

This certificate may be pursued on a full-or part-time basis.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 501</td>
<td>Introduction to Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 668</td>
<td>Applied Integration for Graduate Certificates</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Students must also select one concentration and complete all requirements therein.

Advanced Skills Concentration (CARA)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 650</td>
<td>Conflict Analysis and Resolution Advanced Skills</td>
<td>3</td>
</tr>
<tr>
<td>CONF 660</td>
<td>Conflict Assessment and Program Evaluation</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 3 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 657</td>
<td>Facilitation Skills</td>
<td>3</td>
</tr>
<tr>
<td>CONF 658</td>
<td>Diversity and Difference in Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 659</td>
<td>Leadership in Conflict Analysis and Resolution</td>
<td></td>
</tr>
</tbody>
</table>
### Collaborative Community Action Concentration (CCA)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 661</td>
<td>Collaborative Community Action Participation Governance</td>
<td>3</td>
</tr>
<tr>
<td>CONF 657</td>
<td>Facilitation Skills</td>
<td>3</td>
</tr>
<tr>
<td>CONF 658</td>
<td>Diversity and Difference in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 659</td>
<td>Leadership in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 660</td>
<td>Conflict Assessment and Program Evaluation</td>
<td></td>
</tr>
<tr>
<td>CONF 665</td>
<td>Special Topics in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 720</td>
<td>Ethnic and Cultural Factors in Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 721</td>
<td>Conflict and Race</td>
<td></td>
</tr>
<tr>
<td>CONF 723</td>
<td>Conflict and Gender</td>
<td></td>
</tr>
<tr>
<td>CONF 733</td>
<td>Law and Justice from a Conflict Perspective</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

1 Application of any other course toward fulfillment of the elective requirement must be approved by the Certificate Program Director.

### Prevention and Reconstruction Contexts Concentration (PRC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 652</td>
<td>Conflict Analysis and Resolution for Prevention, Reconstruction, and Stabilization Contexts</td>
<td>3</td>
</tr>
<tr>
<td>CONF 660</td>
<td>Conflict Assessment and Program Evaluation</td>
<td></td>
</tr>
<tr>
<td>CONF 657</td>
<td>Facilitation Skills</td>
<td></td>
</tr>
<tr>
<td>CONF 658</td>
<td>Diversity and Difference in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 659</td>
<td>Leadership in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 665</td>
<td>Special Topics in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 732</td>
<td>Conflict in Development</td>
<td></td>
</tr>
<tr>
<td>CONF 733</td>
<td>Law and Justice from a Conflict Perspective</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

1 Application of any other course toward fulfillment of the elective requirement must be approved by the Certificate Program Director.

### World Religions and Peacebuilding Concentration (WRP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 653</td>
<td>World Religions, Diplomacy, and Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 660</td>
<td>Conflict Assessment and Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>CONF 657</td>
<td>Facilitation Skills</td>
<td></td>
</tr>
<tr>
<td>CONF 658</td>
<td>Diversity and Difference in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 659</td>
<td>Leadership in Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 665</td>
<td>Special Topics in Conflict Analysis and Resolution</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

1 Application of any other course toward fulfillment of the elective requirement must be approved by the Certificate Program Director.

### Conflict Analysis and Resolution, PhD

**Banner Code: CA-PHD-CONF**

The Conflict Analysis and Resolution doctoral program, the first of its kind in the United States, provides advanced study for students in the field of conflict analysis and conflict resolution. Students are prepared for careers as researchers, theoreticians, and teachers in higher education, and as policy administrators, analysts, and consultants in the public and private sectors.

The program stresses a close link between knowledge of theory and process in the resolution of conflict. For this, training in the methods of research and analysis is emphasized. In addition, students are expected to obtain a background in a substantive area of conflict, usually related to the topic of the dissertation.

### Admissions & Policies

#### Admissions

A master’s or equivalent degree is required for admission to the PhD program.

#### Application Requirements

In addition to meeting all admission requirements for graduate study, applicants must submit:

- all undergraduate and graduate transcripts
- three letters of recommendation, one of which should be from a faculty member in the applicant’s undergraduate or graduate major field
- a 750 to 1,000 word essay on goals and reasons for seeking admission to the program
• a written sample of work that shows the applicant’s potential for completing dissertation research in a doctoral program
• a resume or curriculum vitae.

The Graduate Record Exam (GRE) or other standardized test scores are not required but may be submitted. The Test of English as a Foreign Language (TOEFL) is required of international students.

For more information, see the Admission of International Students (p. 71). Although students may enroll on a full- or part-time basis, entry into the program is in the fall semester only.

Policies
For policies governing all graduate degrees, see AP.6.10 Requirements for Doctoral Degrees (p. 96).

Reduction of Credit
Since a master’s degree or equivalent is required for admission, students will automatically receive a 15 credit reduction of the number of credits required.

Students may have the required number of credits reduced by up to 15 additional credits based on relevant previous coursework. The actual number of applied credits is determined in consultation with the student’s advisor and the program director after a review of courses taken, subsequent to a student’s admission to the program.

Completion Timelines
Students must satisfactorily complete their coursework, comprehensive paper, advance to candidacy, and complete the dissertation within 9 years of admission to the program. Students are expected to have advanced to candidacy within 6 years of admission to the program.

Plan of Study Guidelines
All doctoral students should meet with their faculty advisor before starting classes to develop a plan of study. This plan should show the sequence of courses anticipated. It should be based on a discussion between the student and the advisor about the student’s interest and goals. The plan should ensure that the student completes coursework efficiently and is able to build toward candidacy. The student and the advisor should then meet at least once each semester thereafter to review and amend the plan. The Program Director should receive a copy of each new or revised plan of study.

Transfer of Non-Degree Credit
A maximum of 12 credits of S-CAR graduate courses taken at George Mason as a non-degree graduate student, or as part of S-CAR’s graduate certificate program may be transferred into the PhD program. How credit will be counted will be determined in consultation with the student’s advisor and the Doctoral Program Director. A maximum of 6 credits of non-S-CAR courses taken as non-degree credit can be counted toward the PhD program. Courses counted toward another degree cannot be transferred.

Adding a S-CAR Certificate Program
Students may elect to complete a S-CAR graduate certificate in addition to the PhD program. Graduate certificates are opportunities for students to further tailor their academic program and specialize in a specific area of Conflict Resolution practice. Certain graduate certificate courses can be used to fulfill PhD program requirements. Students should consult with the Certificate Program Director and Doctoral Program Director for policies on counting certificate courses toward the PhD degree.

Requirements
Degree Requirements
Total credits: 72

Required Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 801</td>
<td>Introduction to Conflict Analysis and Resolution (Should be taken in the first semester of coursework)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3

Foundation Courses
Students complete 12 credits of foundation courses distributed as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Theoretical Foundations</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select two courses (6 credits) from the following:</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>CONF 802 Theories of the Person</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONF 803 Structural Theories</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONF 804 Alternate Theoretical Foundations</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Research Foundations</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select two courses (6 credits) from the following:</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>CONF 811 Quantitative Foundations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONF 812 Qualitative Foundations: Social Sciences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONF 813 Qualitative Foundations: Humanities</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

Specialization Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students will take four courses (12 credits) of specialization courses. Three credits each in the areas of theory and research, and six credits of practice specialization.</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits: 12

1 The Doctoral Program Director must approve courses.

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 18 credits from electives that are any 500-, 600-, and 700-level CONF courses that are not required</td>
<td>18</td>
</tr>
</tbody>
</table>

Total Credits: 18

With the advisor’s approval, each student may include a maximum of 6 credits of electives from outside the S-CAR Program, including courses in other Mason departments, consortium courses, and transfer courses from other universities. The intent is to allow students to have maximum flexibility in selecting courses to build skills and knowledge needed in dissertation work. CONF 897 Directed Reading may be taken to meet the requirement. Only two directed readings classes (6 credits) can be applied toward doctoral elective requirements.
Foreign Language Requirement
At the point of application to fulfill the comprehensive paper, students will indicate to the Director of the Doctoral Program the membership of their dissertation committee. This committee will determine, based on the scope and nature of the student’s research, the specific language requirement a student must meet. This will be conveyed to the Director of the Doctoral Program. This language requirement must be completed prior to graduation.

Comprehensive Paper
Students are eligible to complete the comprehensive paper when they have completed all the requirements of coursework in the doctoral program with the exception of CONF 998 Doctoral Dissertation Proposal and CONF 999 Doctoral Dissertation Research and the language requirement. A student is advanced to candidacy upon successful completion of the comprehensive paper. Papers can be submitted for evaluation twice each year, once in the winter and once in the summer. Students who do not pass initially should form a plan of study with the chair of their dissertation committee and the Director of the Doctoral Program that will prepare them to resubmit. The comprehensive paper may be resubmitted two times for a total of three attempts. After three unsuccessful attempts, the student should consult with the Doctoral and Master’s Directors about the possibility of transferring to the MS program.

Advancement to Candidacy
Upon successfully completing coursework (except dissertation) listed on the Plan of Study and passing the comprehensive paper, students will be advanced to candidacy and will be personally notified of this by the Dean of S-CAR. Students are expected to advance to candidacy within 6 years of admission to the program. Students have a total of 9 years from admission to complete all course requirements, including the dissertation.

Dissertation Research
Students are required to complete 12 combined credits of CONF 998 Doctoral Dissertation Proposal and CONF 999 Doctoral Dissertation Research, including at least 3 credits of CONF 999 Doctoral Dissertation Research. Students must have a signed dissertation proposal in order to register for CONF 999 Doctoral Dissertation Research.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>1</td>
</tr>
<tr>
<td>CONF 999</td>
<td>Doctoral Dissertation Research</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits 12

1 All CONF 998 courses are graded In Progress until completion of the proposal. At that time, a grade of Satisfactory is issued.
2 All CONF 999 courses are graded In Progress until the dissertation defense is successfully completed. At that time, a grade of Satisfactory is issued.

Dissertation Committee
Students should propose a Dissertation Committee to the Director of the Doctoral Program and the Dean who then formally appoint the committee. This must be done prior to taking the comprehensive exam. The Dissertation Committee must include a chairperson from among S-CAR graduate faculty and at least two other members of the graduate faculty, one of whom must be a non-S-CAR Mason faculty member. The Dean will inform the student, committee members, and Director of the Doctoral Program when the committee has been appointed.

Dissertation Proposal
After the student passes the comprehensive exam and advances to candidacy, the next job of the committee is to approve the candidate’s dissertation proposal. The proposal is the candidate’s description (in some detail) of his/her dissertation project, reflecting the successful work of the comprehensive examination paper. It will include an argument about the hypothesis/theory question being tackled and the specific methods of research to be used. It should be prepared in consultation with the chair of the committee, and must be approved by all committee members. After receiving permission from the full committee, the candidate makes an oral presentation of the dissertation proposal before the committee and the Director of the Doctoral Program that is also open to other S-CAR faculty, fellow students, and other scholars. In scheduling the defense, it is the student’s responsibility to ensure that all members of the committee are available and will be present for the defense.

A signed cover page from that proposal must be filed with the Doctoral Director. Failure to complete the formation of a committee and an approved proposal by the end of the 12-month period will result in the candidate’s dismissal from the doctoral program. (Candidates may appeal to the Dean a further extension of this dissertation preparation period, but such appeals will be allowed only on grounds of documented illness, family emergency, or military deployment). Candidates should consult thesis.gmu.edu (http://thesis.gmu.edu) to ensure the proposal is in the correct format and has been submitted to all the appropriate offices.

Writing the Dissertation and its Defense
The chair of the dissertation committee usually takes most of the responsibility for guiding the overall project and the writing of the dissertation, although all members (and other useful persons) should be consulted as appropriate. It is the committee’s responsibility to ensure a quality piece of work. When advanced to candidacy, the Guide for Preparing Graduate Thesis, Dissertation and Projects tells exactly how to prepare an acceptable dissertation. Please visit thesis.gmu.edu (http://thesis.gmu.edu) to ensure formatting guidelines are met and submission procedures followed.

It is essential that doctoral committee members have sufficient time to read and evaluate dissertation drafts with care prior to the dissertation defense date. The committee may require no more than one month to read the final draft and provide feedback. It is also essential that students have sufficient time after the defense to do final revisions, editing and formatting. If the University determines the deadlines for final library submission deadline is May 1, for example, the defense must take place prior to April 1 and the full draft dissertation must be delivered to the full committee before March 1.

The dissertation is to be orally defended in public, minimally with the entire committee present. The S-CAR faculty and students must receive public notice of the defense at least two weeks prior. Students are welcome to invite family and friends. The University may also send a representative. The public defense helps ensure that the University’s standards are met, and offers an opportunity to learn from the students’ research. After a successful defense, the cover page is signed by the members of the Dissertation Committee, PhD Program Director and Dean; and the dissertation is filed with the University. An additional signed copy should be delivered to the S-CAR Burton Library.
Dissertations must be presented to the library in the proper format or they will not be accepted. Please visit the University Dissertation & Thesis Services web site at thesis.gmu.edu/ for dissertation formatting requirements and submission deadlines. Mason’s Dissertation and Thesis Coordinator may be reached at udts@gmu.edu or 703-993-2222.

Mass Atrocity and Genocide Prevention Graduate Certificate

Banner Code: CA-CERG-MAGP

This 15-credit program is tailored to provide students with practical knowledge of conflict analysis and resolution relevant to Mass Atrocity Prevention, including genocide and mass violence prevention. Designed for mid-career professionals studying in a cohort environment, or graduate students seeking specialized, practical knowledge, the certificate program integrates conflict analysis and resolution theory, research, and practical techniques of preventing mass atrocities. Certificate courses include intensive sessions, lectures, seminars, and applied-mentored learning in real and simulated situations. Students consider strategies to prevent mass atrocities through policy planning, diplomacy, civil society building, democratization, development, education, and “up-streaming” prevention efforts that apply peace-building, dialogue, and conflict resolution approaches designed specifically for highly-escalated conflict contexts where mass atrocities seem likely to appear.

Admissions & Policies

Admissions

Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Applicants to this certificate must submit an undergraduate transcript showing completion of an undergraduate degree or equivalent, a cover letter specifying interest in the program, two letters of recommendation, and a curriculum vitae or résumé indicating relevant work experience.

In addition, prior work experience in areas related to the chosen graduate certificate is desirable. GRE or other standardized test scores are not required but may be submitted. The TOEFL is required of international students. For more information, see Admission of International Students (p. 71).

Policies

Class Schedule

Please note that some classes for this graduate certificate are offered only in Saturday and Sunday sessions. Please check the Schedule of Classes for each term to identify course meeting dates, and specific add/drop dates for these partial semester courses.

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 501</td>
<td>Introduction to Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 625</td>
<td>Engaging Conflict</td>
<td>3</td>
</tr>
<tr>
<td>CONF 654</td>
<td>Mass Atrocity: Early Warning and Prevention</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>CONF 706</td>
<td>Ethics and Conflict</td>
</tr>
<tr>
<td>CONF 707</td>
<td>Gender and Violence</td>
</tr>
<tr>
<td>CONF 708</td>
<td>Identity and Conflict</td>
</tr>
<tr>
<td>CONF 721</td>
<td>Conflict and Race</td>
</tr>
<tr>
<td>CONF 733</td>
<td>Law and Justice from a Conflict Perspective</td>
</tr>
<tr>
<td>CONF 751</td>
<td>Dynamics of Civil Wars</td>
</tr>
</tbody>
</table>

Total Credits 15

Sport and Conflict Resolution Minor (SCAR)

Banner Code: SCNR

There has been a real growth in the establishment of non-profit organizations that use ‘sport for development’, sport to bring diverse communities together and also ‘sport for peace’ organizations in high conflict areas of the world. This minor will help prepare students to work for organizations dedicated to using sports for development, community building and peace. It provides students with a cross section of courses in sports management and conflict resolution. Courses in sports management frame the sports industry in a philosophical, ethical, cultural and business context. Conflict resolution courses will introduce students to foundational concepts in the study of human conflict, the analysis of conflict and problem solving techniques for helping to resolve conflict.

This is an interdisciplinary minor offered by the School for Conflict Analysis and Resolution (p. 936) and the School of Recreation, Health, and Tourism. (p. 221)

Admissions & Policies

Admissions

This minor is available to all Mason undergraduate students.

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 87).

Requirements

Minor Requirements

Total credits: 18
**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPMT 201</td>
<td>Introduction to Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 302</td>
<td>Philosophical and Ethical Dimensions of Sport</td>
<td>3</td>
</tr>
<tr>
<td>SPMT 304</td>
<td>Sport, Culture, and Society</td>
<td>3</td>
</tr>
<tr>
<td>CONF 101</td>
<td>Conflict and Our World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td>3</td>
</tr>
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</table>

Total Credits 15

**Elective Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CONF 302</td>
<td>Culture, Identity, and Conflict</td>
<td></td>
</tr>
<tr>
<td>CONF 435</td>
<td>Building Peace in Divided Societies</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

**Schar School of Policy and Government**

501 Founders Hall (Arlington Campus)
3351 Fairfax Drive, MS 3B1
Arlington, VA 22201

359 Research Hall (Fairfax Campus)
4400 University Drive, MS 3F4
Fairfax, VA 22030

Phone: 703-993-2280 (Arlington)
703-993-1400 (Fairfax)

Email: schar@gmu.edu
Website: schar.gmu.edu

**Administration**

- Mark J. Rozell, Dean
- Judith Wilde, Chief Operating Officer
- Matthys van Schaik, Associate Dean for Academic Affairs
- Ming Wan, Associate Dean
- Elizabeth C. Eck, Assistant Dean for Graduate Program Management
- Jill V. Emerson, Assistant Dean of Admissions and Student Services
- Ann M. Ludwig, Assistant Dean for Undergraduate Academic Affairs

**College Code**: PP

The Schar School of Policy and Government prepares undergraduate and graduate students to be leaders who advance the public good in the private, public, and nonprofit sectors. Through research and education in policy, government, and international affairs, Schar allows Mason to more effectively serve the region, Commonwealth, nation, and world.

The Schar faculty combines original research with real-world experience to connect theory and practice for the benefit of students and wider constituencies. The School employs approximately 80 full-time faculty members across a wide range of disciplines, including political science, public administration, international relations, economics, management, geography, engineering, sociology, anthropology, and law. Schar is a major research unit of the University, with approximately $2 million per year in sponsored funding. Schar faculty members frequently advise governments, companies, and non-profit organizations, appear in the national and international media, and participate in public debates on critical issues of the day.

Schar offers two undergraduate majors, eight master's degree programs, three doctoral programs, and a range of undergraduate minors and graduate certificates. Collectively, these programs enroll approximately 2000 students. Schar offers classes on Mason's Fairfax and Arlington campuses, and its faculty members have offices on both campuses.

**Undergraduate Programs**

Schar offers two degrees for students interested in political science, government, and international relations: a BA in Government and International Politics and a BS in Public Administration. Majors in Government and International Politics take core courses in American political institutions, the political systems of other countries, and international relations. Students can focus their electives to earn a concentration in American institutions and processes, comparative politics, international political economy, international relations, law, philosophy and governance, political analysis, political behavior and identity politics, public policy, or a higher credit concentration in Philosophy, Politics, and Economics (https://ppe.gmu.edu). Majors in public administration and policy take courses in government, management, policy, and administration. Concentrations are offered in administration and management, economic policy analysis, international political economy, nonprofit management, public policy, and US government institutions.

Students have an opportunity to do internships as part of their degree programs, gaining valuable work experience while earning academic credit.

**Minors**

Schar offers minors in American government, international/comparative studies, international security, legal studies, and public policy and management. In addition, faculty from the School coordinate or participate in the Asia-Pacific and Northeast Asian Studies Minor, Global Systems Minor, Latin American Studies Minor, Middle East Studies Minor, Islamic Studies Minor, and Urban and Suburban Studies Minor. It participates with the Philosophy Department in the Political Philosophy Minor and with the Communications Department in the Political Communication Minor (CHSS). See Minors and Interdisciplinary Minors below.

**Bachelor's/Accelerated Master's Programs**

The School offers qualified undergraduates in any major the opportunity to apply to several accelerated master's degree programs. If accepted, students may earn both an undergraduate and a graduate degree, sometimes within five years. More information about the degree options and application process may be found here (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

**Graduate Programs**

Schar offers three doctoral degree programs and eight master's degree programs, as well as numerous graduate certificate programs. Specific information on each program may be found by clicking the “Programs” tab at the top of this page.
The Schar School of Policy and Government and the Antonin Scalia Law School offer a joint JD/MPP degree program in law and public policy studies. For more information, go to the website (http://www.law.gmu.edu/academics/degrees/jd_mpp).

Research Centers
The Schar School of Policy and Government’s research centers focus on a wide range of issues and areas.

Center for Energy Science and Policy
Co-Directors: Richard Kauzlarich, PhD and Paul R. Houser, PhD
This center, a joint initiative of the College of Science and Schar School, provides objective analysis of key issues in the energy field that is grounded in original research. It serves as a center of gravity for the many researchers at George Mason whose work engages them with these issues and connects them with decision-makers in the economy, society, and government.

Center for Global Policy
Director: Jack Goldstone, PhD
This center conducts research on a wide range of global policy issues, including foreign trade, democratization and state-building, and transnational networks. It also analyzes specific policy issues for a variety of government agencies, and develops and serves as the home to several major cross-national databases for global policy.

Center for Microeconomic Policy Research
Director: John Earle, PhD
This center is a forum for policy-relevant research using micro-economic and micro-econometric methods.

Center for Regional Analysis
Director: Terry Clower, PhD
Focusing on economic development in technologically intensive regions, the Center for Regional Analysis (CRA) maintains a corporate technology database for the national capital region. The CRA provides economic forecasting services to government agencies at all levels around the world.

Center for Science and Technology Policy
Co-Directors: David M. Hart, PhD and Connie McNeely, PhD
This center helps facilitate the exchange of information and ideas among the worldwide science, foreign affairs, trade, and technology communities. Areas of emphasis include international trade and science and technology.

Center for Security Policy Studies
Director: Ellen Laipson, MA
Today’s security challenges—from proliferation and terrorism to climate change and cyber security— are beyond the scope of any one nation-state to address. Finding solutions requires international and multi-lateral cooperation among regional and global leaders, both state-based and outside the state, including corporate and non-governmental actors. The purpose of the Center for Security Policy Studies is to strengthen global strategic thinking by current and future policy-makers, so as to improve US and global security in the 21st century.

Center for the Study of International Medical Policies and Practices
Director: Arnauld Nicogossian, MD
This center provides leadership and focus on global medical and public health policies and processes, working collaboratively with health, science, and medical organizations in the public and private sectors, and academic organizations to address pressing global policy concerns.

Center for Transportation Public-Private Partnership Policy
Director: Jonathan L. Gifford, PhD
The Center is devoted to advancing the objective consideration of public-private partnerships for transportation system renewal and expansion through research, education and public service. The Center supports development of U.S. and international case studies of P3 projects and programs, analyses of the impact of P3s, sponsors workshops and conferences, and supports graduate students and faculty.

Michael V. Hayden Center for Intelligence, Policy, and International Security
Director: Larry Pfeiffer, M.A.
The threats to global security have rarely ever been so great in scope and number—in such a complex, complicated world, intelligence has never been more vital. The Michael V. Hayden Center for Intelligence, Policy, and International Security at the Schar School for Policy and Government provides for the full examination of intelligence and its interplay with US national security.

Stephen S. Fuller Institute for Research on the Washington Region’s Economic Future
Director: Stephen S. Fuller, PhD
Through consistent monitoring of regional issues and the economy, the institute is able to identify critical conditions and trends impacting the future vitality of the Washington region’s economy. Regularly communicating these findings and producing timely research on short- and long-term regional policy options ensure local business and government leaders are equipped with the data needed to make informed decisions regarding the region’s future.

Terrorism, Transnational Crime and Corruption Center
Director: Louise I. Shelley, PhD
The Terrorism, Transnational Crime and Corruption Center (TraCCC) is the first center in the United States devoted to understanding the links among terrorism, transnational crime and corruption. The center teaches, researches and formulates policy on these critical issues. TraCCC accomplishes its mission through international research partnerships engaging in fundamental and applied research projects. Research addresses such diverse concerns as national security, economic development and human rights.

Faculty

School Faculty
Professors
Abramson, Acs, Button, Clower, Conant, Conlan, Dinan, Dudley, Dueck, Earle, Fuller, Gifford, Goldstone, Hart, Hughes Hallett, Katz, Malawer, Mandaville, McNeely, Olds, Pfiffner, Regan, Reinert, Rhodes, Root, Rozell, Ruth, Shelley, Singh, Slavov, Sackett, Thatchenkery, Travis, Wan, Wedel
Academic Load

Students should review AP1.2 Academic Load (p. 77).

In order to be considered for a credit overload, students must fulfill all of the following criteria:

- Be in good academic standing
- Have completed the prior semester with a GPA of 2.33 or higher
- Have a cumulative GPA of 2.33 or higher
- Have demonstrated in prior semesters at Mason the ability to handle an increased and demanding course load while maintaining high performance
- Have no remaining incompletes (INs) from a previous semester

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

Excluded Courses and Credits

At most 3 credits of 100-level Recreation (RECR) activity courses may be taken for general elective credit for an undergraduate degree in the Schar School of Policy and Government.

Only Military Science (MLSC) courses at the 400-level can be used for credit for a degree in the School; credit for other MLSC courses may not be applied toward a degree in the School.

Once matriculated at Mason, students may not take CLEP exams and apply credits from those exams to degrees in the School. Students may apply credits from CLEP exams to degrees in the School only if those credits were awarded and reported prior to admission.

University Consortium

Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstances. All consortium registration requests must be submitted to the Schar Undergraduate Student Services office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Permission to Study at Another Regionally-Accredited U.S. Institution

Once enrolled in degree status at Mason, students with fewer than 60 hours of transfer coursework (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through Mason Study Abroad) may take up to 8 hours of coursework in Schar disciplines at another institution. See the university Permission to Study Elsewhere policy for additional information.

Study Abroad

In order to be considered for study through Mason Study Abroad, students must plan well in advance and receive prior written permission from the Assistant Dean. Students must also meet all of the following criteria:
• Meet all eligibility requirements for their program as specified by Mason Study Abroad including course prerequisites and minimum GPA.

• Have completed the immediately preceding semester at Mason with a minimum GPA of 2.00.

• Have completed the necessary forms and have obtained all required signatures and course equivalencies.

Students in danger of probation, suspension, or dismissal should plan very carefully before requesting to study abroad. Students who are not in good academic standing will not be permitted to study abroad.

Leave of Absence
All undergraduate students who are planning an absence from George Mason must submit a formal request for Leave of Absence to the Office of the University Registrar. Students do not need to complete the Leave of Absence form if they are participating in a George Mason University sponsored study abroad program or have received permission to study elsewhere.

The maximum time allowed for a Leave of Absence is two years. A new admission application will be required if a Leave of Absence extends beyond two years. If a Leave of Absence was not submitted, a new admission application will be required if a student misses two graded semesters, excluding the summer term. Re-admission is not guaranteed. See Academic Policies for full university policy.

Withdrawals
Students should review the Withdrawal section in the Academic Policies (p. 77) section of this catalog. Courses for which a withdrawal is approved receive a grade of "W."

Students should be aware of the potential consequences of withdrawing on their academic standing. Although credits graded "W" do not affect a student's GPA, they do count towards the total attempted hours. The total attempted hours and cumulative GPA together determine a student's academic standing. These are explained in the Academic Standing section of Academic Policies.

Academic Clemency
Students should review the university policies regarding academic clemency in the Academic Standing section of Academic Policies (p. 77).

To be considered for clemency, students must meet all of the following criteria:

• Be absent from George Mason for a minimum of three consecutive calendar years.

• Provide a detailed explanation for why they were unsuccessful in those courses and how they have made changes to ensure their academic progress upon their return.

• Submit their request within 12 months of the first day of the re-enrollment term.

• Complete at least 6 credits during their first 12 months back at George Mason.

• Earn a minimum GPA of 2.50 each semester back prior to making the clemency request with no individual grade below 2.00.

If the last three minimum academic requirements are not met, clemency will not be allowed under any circumstances.

Appeals Process
Undergraduate students may appeal decisions concerning academic actions to the Schar Office of Undergraduate Student Services. They may appeal decisions of the Office of Undergraduate Student Services to the Associate Dean. Students may appeal decisions of the Associate Dean to the Associate Provost, Undergraduate Academic Affairs and Programs. Students who feel that the School's appeal process was conducted unfairly may appeal to the Provost's Office as specified in the Academic Policies (p. 77) section of this catalog.

The grade appeal process occurs at the Dean's Council level as discussed above.

Students should file all appeals in a timely manner, usually within the semester in which the original decision is rendered, but no later than the final day of classes of the following semester.

Second Bachelor's Degree
Students should review the university policies regarding second bachelor’s degrees in the Undergraduate Admission Policies (p. 65) and in Academic Policies/ Requirements for Undergraduate Programs (p. 87) sections of the catalog. Students pursuing a second bachelor's degree concurrently with their first bachelor's degree at Mason must meet all the additional requirements for the School (see second paragraph of the Policies for Undergraduate Students section) if they differ from the requirements in the School or College of their first major.

Students pursuing a second bachelor's degree in the School after already having received one or more bachelor's degrees are considered to have met all of the Mason Core requirements. Students pursuing a Bachelor of Science degree do not have additional School-level requirements. Students pursuing a Bachelor of Arts degree in the School must complete these additional School-level requirements: one additional 3-credit course each in philosophy or religious studies, in social and behavioral science, and in non-Western culture (for a total of 9 credits). They must also demonstrate proficiency in a foreign language through the intermediate level.

Minors
Students may elect to take up to two minors in addition to their major field of study. For policies governing all minors, see the AP.5.3.4 Minors (p. 87) section of this catalog. Students interested in earning a minor should complete the appropriate section of the Change/Declaration of Academic Program form and submit it to the Office of the University Registrar. See All about Minors for more information.

Concentration Courses and Minors
Students may elect to declare a concentration, which requires four of their major field electives to be from the same designated field. Students should be aware that minors usually require between 15 and 21 credits of study; at least 8 of which must be applied only to that minor and may not be used to fulfill requirements of the student’s major, concentration, an undergraduate certificate, or another minor.

Honors in the Major
Highly qualified students majoring in Government and International Politics and Public Administration may pursue advanced work leading to graduation with honors in the major. Those students selected for participation in this program take a two-course sequence: GOVT 491 Honors Seminar (Mason Core) (p. 142) and GOVT 496 Directed Readings
and Research. To graduate with honors in the major, students must complete these courses with a minimum GPA of 3.50.

**Policies for Graduate Students**

Students should become familiar with the university’s Academic Policies (p. 77) in addition to those specific to each academic unit.

**Graduate Student Appeal and Grievance Procedures**

Graduate student appeal and grievance procedures are based on George Mason University’s honor system. Students are responsible for understanding the provisions of the code described in detail in the Academic Policies (p. 77) section of this catalog and in Schar’s graduate student guides.

Students with grievances should direct them in writing to the Assistant Dean of Admissions and Student Services, who will provide guidance on how to resolve their concerns in accordance with established procedures.

Students may appeal decisions concerning academic actions, including termination. Written appeals must be submitted to the Assistant Dean of Admissions and Student Services. The merit of these appeals will be reviewed by the Dean or Dean’s designate.

Grade appeals are made to the Dean. Students should contact the Associate Dean for Academic Affairs in writing to initiate the process. The Dean's decision is final.

A student who is facing termination from the program for non-academic reasons may appeal the decision to the Dean. This appeal must be in writing and must be received within 30 calendar days of the date on the notice of dismissal or termination. The Dean or Dean’s designate will make a final determination. This determination may not be appealed.

**Programs**

- American Government Minor
- Biodefense Graduate Certificate
- Biodefense, MS
- Biodefense, PhD
- Emergency Management and Homeland Security Graduate Certificate
- Global Health and Security Graduate Certificate
- Global Systems Minor
- Government Analytics Minor (Schar)
- Government and International Politics, BA
- International Commerce and Policy, MA
- International Security Minor
- International Security, MA
- International / Comparative Studies Minor
- Legal Studies Minor
- Management of Secure Information Systems, MS (Schar)
- National Security and Public Policy Graduate Certificate
- Nonprofit Management Graduate Certificate
- Organization Development and Knowledge Management, MS
- Peace Operations, MS
- Political Communication Minor (Schar)
- Political Science, MA
- Political Science, PhD
- Public Administration, BS
- Public Administration, MPA
- Public Management Graduate Certificate
- Public Policy and Management Minor
- Public Policy, MPP
- Public Policy, PhD
- Science, Technology, and Security Graduate Certificate
- Terrorism and Homeland Security Graduate Certificate
- Transportation Policy, Operations, and Logistics, MA
- Urban and Suburban Studies Minor

**American Government Minor**

**Banner Code:** AMGV

**Academic Advising**

359 Research Hall
Fairfax Campus

The minor in American government provides students the opportunity to focus on the most relevant features of American government, its institutions, the political behavior of its citizens and leaders, and the defining political questions of our time.

**Faculty**

Travis (minor advisor)

**Admissions & Policies**

**Policies**

Students pursuing this minor must complete 18 credits in government with a minimum grade of C in each course. Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 18

**Core Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 3

**Electives**

Select five electives from the following:

- Any course on political institutions: GOVT 301–GOVT 309
- Any course on political behavior GOVT 310–GOVT 319
- Any course from GOVT 409–GOVT 420
- GOVT 344 American Foreign Policy
Biodefense, MS

Banner Code: PP-MS-BIOD

Academic Advising

560 Founders Hall
Arlington Campus

359 Research Hall
Fairfax Campus

Website: schar.gmu.edu

The master of science in biodefense prepares students to become the next generation of biodefense and biosecurity professionals and scholars. This program provides students with a foundation in microbiology and biotechnology combined with a broader security and organizational context.

Admissions & Policies

Admissions

Admission Requirements

Please see the Graduate Admissions (p. 68) for information on graduate admission to George Mason University. Specific information on application requirements and deadlines for the Biodefense master’s program may be found on the Schar admissions web site (http://schar.gmu.edu/admissions).

Completed applications for fall and spring semesters are reviewed on a rolling basis, with late applications considered on a space-available basis. Students may be admitted for nondegree study and apply a limited number of credits toward the master’s degree should they choose to apply to the degree program later, in accordance AP.6.4.1 Change from Nondegree Status (p. 91).

Policies

Academic Policies

Students admitted to a Schar program will be terminated from the Schar school upon receiving one grade of F and are no longer eligible to take courses in the school. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses.

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Requirements

Degree Requirements

Total credits: 36

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>BIOD 604</td>
<td>Emerging Infectious Diseases I: Bacteria and Toxins</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 605</td>
<td>Emerging Infectious Diseases II: Viral Agents</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 609</td>
<td>Biodefense Strategy</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 620</td>
<td>Global Health Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 710</td>
<td>Health Security Preparedness</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 500</td>
<td>The Scientific Method and Research Design</td>
<td>3</td>
</tr>
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<td>Total Credits</td>
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<td>18</td>
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Electives

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<table>
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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>15</td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 756</td>
<td>Global Medical Systems Policy Analysis</td>
<td></td>
</tr>
<tr>
<td>PUBP 757</td>
<td>Public Policy in Global Health and Medical Practice</td>
<td></td>
</tr>
<tr>
<td>PUBP 758</td>
<td>Global Threats and Medical Policies</td>
<td></td>
</tr>
<tr>
<td>PUBP 765</td>
<td>Human Smuggling and Trafficking</td>
<td></td>
</tr>
<tr>
<td>PUBP 767</td>
<td>Ethics in Health Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 770</td>
<td>Health Policy Analysis</td>
<td></td>
</tr>
<tr>
<td>PUBP 783</td>
<td>Global Governance</td>
<td></td>
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<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td></td>
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<tr>
<td>GOVT 641</td>
<td>Global Governance</td>
<td></td>
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<tr>
<td>GOVT 742</td>
<td>International Negotiation</td>
<td></td>
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<tr>
<td>GOVT 744</td>
<td>Foundations of Security Studies</td>
<td></td>
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<tr>
<td>GOVT 745</td>
<td>International Security</td>
<td></td>
</tr>
<tr>
<td>PUAD 630</td>
<td>Emergency Planning and Preparedness</td>
<td></td>
</tr>
<tr>
<td>PUAD 631</td>
<td>Disaster Response Operations and Recovery</td>
<td></td>
</tr>
<tr>
<td>PUAD 635</td>
<td>Emergency Preparedness: Interagency Communication and Coordination</td>
<td></td>
</tr>
<tr>
<td>PUAD 637</td>
<td>Managing Homeland Security</td>
<td></td>
</tr>
<tr>
<td>ANTH 631</td>
<td>Refugees in the Contemporary World</td>
<td></td>
</tr>
<tr>
<td>GCH 543</td>
<td>Global Health</td>
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<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
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<tr>
<td>Any BIOD course (p. 1299)</td>
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<td>15</td>
</tr>
</tbody>
</table>

Total Credits: 15

1 Other courses must be approved by the program advisor. Up to six elective credits may be taken outside of Schar.
Accelerated Master's

Bachelor's Degree (any)/Biodefense, Accelerated MS

Overview
Highly qualified undergraduates in any major may apply to the accelerated Biodefense, MS. If accepted, students will be able to earn a bachelor's degree in their chosen major and a Biodefense, MS with a reduced number of overall credits and within a reduced time frame, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission
Please see the Graduate Admissions (p. 68) for general information on graduate admission to George Mason University. Information specific to the accelerated MS program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

To be considered for this accelerated master's program, applicants must have completed a minimum of 75 credits and have a minimum GPA of 3.50 in all coursework applied to the degree.

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses (six credits) that may be counted toward both the bachelor's and master's degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master's degree. The courses are BIOD 604 Emerging Infectious Diseases I: Bacteria and Toxins, GOVT 500 The Scientific Method and Research Design, BIOD 605 Emerging Infectious Diseases II: Viral Agents and BIOD 620 Global Health Security Policy. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor's/Accelerated Master's Transition Form to apply credits to the master's degree. Students must begin their master's program the semester immediately following conferral of the undergraduate degree (excluding summer).

Biodefense Graduate Certificate

Banner Code: PP-CERG-BIOD

Academic Advising
560 Founders Hall
Arlington Campus
359 Research Hall

Fairfax Campus
Website: schar.gmu.edu

The certificate provides an interdisciplinary introduction to man-made and natural biological threats, including a background in the science and technology of biodefense and the specialized areas of threat assessment, non-proliferation, and medical and public health preparedness. Students already pursuing a master's degree in the school may, after admission to a certificate program, in most cases, earn an additional six credits (two courses) in the Schar School to receive a certificate in addition to the master's degree.

The graduate certificate may be pursued on a part-time or full-time basis.

Admissions & Policies

Admissions
Applicants to all graduate programs must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies (p. 68). Participants must be admitted to a certificate program. Admission requirements are the same as those for the master's programs and may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Termination from Program
Students admitted to a Schar program will be terminated from the program upon receiving one grade of F and are no longer eligible to take courses in the school. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. See AP.6.6.2 Academic Termination (p. 92).

Requirements

Certificate Requirements
Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 604</td>
<td>Emerging Infectious Diseases I: Bacteria and Toxins</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 609</td>
<td>Biodefense Strategy</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Electives
Select three electives from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 605</td>
<td>Emerging Infectious Diseases II: Viral Agents</td>
<td>9</td>
</tr>
</tbody>
</table>
Biodefense, PhD

Banner Code: PP-PHD-BIOD

Academic Advising

560 Founders Hall
Arlington Campus
359 Research Hall
Fairfax Campus
Website: schar.gmu.edu

This program is designed to prepare students to serve as scholars and professionals in the fields of biodefense and biosecurity. The program integrates knowledge of natural and man-made biological threats with the skills to develop and analyze policies and strategies for enhancing biosecurity. Other areas of biodefense, including nonproliferation, intelligence and threat assessment, and medical and public health preparedness are integral parts of the program.

Admissions & Policies

Admissions

See Graduate Admissions (p. 68) for general information on graduate admission to George Mason University. See the Schar School of Policy and Government Admissions website (http://schar.gmu.edu/admissions/doctorate-admissions) for application requirements and deadlines. Students are considered for admission for the Fall term only.

Policies

For policies governing all graduate degrees, see AP.6.10 Requirements for Doctoral Degrees (p. 96).

Reduction of Credit

Students who enter the doctoral program with a master's degree or other graduate credit may have their credit reduced by up to 30 credits, subject to the approval of the program director.

Requirements

Degree Requirements

Total credits: 72

Students are strongly encouraged to take the core courses as early as possible because they provide the foundation for the rest of the program. The courses which students plan to take should be approved in a program of study designed by the student and their advisor during the student's first semester. Students may take up to 12 credits of courses outside of the Biodefense Program with prior written approval of their advisor. Consult with the graduate program director or coordinator for a list of BIOD electives and approved non-BIOD electives that may be used to fulfill some of the requirements below.

A complete description of the program policies, procedures, and requirements is in the PhD student and faculty handbook (https://schar.gmu.edu/current-students/phd-student-services/phd-handbook-forms), which is published annually.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 604</td>
<td>Emerging Infectious Diseases I: Bacteria and Toxins</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 605</td>
<td>Emerging Infectious Diseases II: Viral Agents</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 609</td>
<td>Biodefense Strategy</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 620</td>
<td>Global Health Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 500</td>
<td>The Scientific Method and Research Design</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following advanced research courses:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GOVT 717</td>
<td>Qualitative Methods</td>
<td></td>
</tr>
<tr>
<td>POGO 611</td>
<td>Advanced Data Analysis for Policy and Government</td>
<td></td>
</tr>
<tr>
<td>POGO 646</td>
<td>Policy and Program Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 21

Field of Specialization

Select one field of specialization and complete the requirements therein.

International Security

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 744</td>
<td>Foundations of Security Studies</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 745</td>
<td>International Security</td>
<td>3</td>
</tr>
</tbody>
</table>

Select six credits of electives (courses may be chosen from the electives list below)

Total Credits: 12

Terrorism and Homeland Security

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 722</td>
<td>Examining Terrorist Groups</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 725</td>
<td>Terrorism and Weapons of Mass Destruction</td>
<td>3</td>
</tr>
</tbody>
</table>
Select six credits of electives (courses may be chosen from the electives list below) 6

**Technology and Weapons of Mass Destruction**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 706</td>
<td>Nuclear, Biological, and Chemical Weapons Policy and Security</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 760</td>
<td>National Security Technology and Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

Select six credits of electives (courses may be chosen from the electives list below) 6

**Total Credits** 12

**Additional Specialization Courses**

Of the courses listed for the preceding fields of specialization, students must select two courses from those that are not in their chosen field. 6

**Total Credits** 12

**Electives**

Select 9 to 21 credits of additional electives in consultation with advisor. 9-21

Courses may be offered by Schar or by other units. Schar courses include the following:

- BIOD 610: Advanced Topics in Global Health Security
- BIOD 620: Global Health Security Policy
- BIOD 621: Ethics and International Security
- BIOD 622: Negotiating in the International Arena
- BIOD 705: Intelligence: Theory and Practice
- BIOD 706: Nuclear, Biological, and Chemical Weapons Policy and Security
- BIOD 709: Nonproliferation and Arms Control
- BIOD 710: Health Security Preparedness
- BIOD 722: Examining Terrorist Groups
- BIOD 723: Legal Dimensions of Homeland Security
- BIOD 725: Terrorism and Weapons of Mass Destruction
- BIOD 726: Food Security
- BIOD 751: Biosurveillance
- BIOD 752: The Role of the Military in Homeland Security
- BIOD 760: National Security Technology and Policy
- BIOD 762: Biotechnology and Society
- BIOD 766: Development of Vaccines and Therapeutics
- BIOD 793: Directed Studies in Biodefense
- BIOD 810: Advanced Seminar in Biodefense
- BIOD 890: Doctoral Supervised Internship
- BIOD 899: Directed Research in Biodefense
- GOVT 510: American Government and Politics
- GOVT 641: Global Governance
- GOVT 706: Federalism and Intergovernmental Relations
- GOVT 739: Issues in Comparative and International Politics
- GOVT 741: Advanced Seminar in International Politics
- GOVT 745: International Security
- GOVT 755: Seminar in Politics and Bureaucracy
- GOVT 843: Diplomacy
- PUAD 504: Managing in the International Arena: Theory and Practice
- PUAD 630: Emergency Planning and Preparedness
- PUAD 631: Disaster Response Operations and Recovery
- PUAD 632: Terrorism: Theory and Practice
- PUAD 635: Emergency Preparedness: Interagency Communication and Coordination
- PUAD 701: Cross-Cultural and Ethical Dimensions of International Management
- PUAD 727: Seminar in Risk Assessment and Decision Making
- PUAD 731: Homeland/Transportation Security Administration
- PUAD 738: Issues in International Security
- PUAD 750: Federalism and Intergovernmental Relations
- PHIL 642: Biomedical Ethics
- PUBP 757: Public Policy in Global Health and Medical Practice
- PUBP 758: Global Threats and Medical Policies

**Total Credits** 9-21

**Qualifying Exam**

The purpose of the qualifying exam is to determine if the student is ready to engage in dissertation research. Doctoral students are eligible to take the exam at the conclusion of coursework, provided an approved Degree Plan is on file with Schar. The exam must be completed before the student takes dissertation proposal (BIOD 998 Doctoral Dissertation Proposal).

**Advancement to Candidacy**

Advancement to candidacy for the doctoral degree occurs when a student has met the coursework requirements, passed the comprehensive qualifying examination, presented and successfully defended a dissertation proposal, and has an approved dissertation committee.

**Dissertation Research**

Once enrolled in BIOD 998, students in this degree program must maintain continuous registration in BIOD 998 or BIOD 999 each semester (excluding summers) until the dissertation is submitted to and accepted by the University Libraries. Once enrolled in BIOD 999, students must follow the university's continuous registration policy as specified in AP6.10.6 Dissertation Registration (p. 98). Students who defend in the summer must be registered for at least 1 credit of BIOD 999.

Students may apply to this degree a minimum of 3 and a maximum of 6 credits of BIOD 998 and a minimum of 6 and a maximum of 18 credits of
BIOD 999. They apply a minimum of 12 and a maximum of 24 dissertation credits (BIOD 998 and BIOD 999 combined) to the degree. Because of the continuous registration policy, students may be required to register for additional credits of these courses.

Before registering in BIOD 999, students must offer a successful public defense of the dissertation proposal. Students must present the results of the dissertation research to their dissertation committee in a seminar and defend their dissertation to the university community. Successful completion of a dissertation is contingent on approval of the dissertation committee and the dean.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 998</td>
<td>Doctoral Dissertation Proposal (minimum of 3 credits)</td>
<td></td>
</tr>
<tr>
<td>BIOD 999</td>
<td>Doctoral Dissertation (minimum of 6 credits)</td>
<td></td>
</tr>
</tbody>
</table>

| Total Credits | 12-24 |

**Certificate Requirements**

Total credits: 15

This certificate may be pursued on a part-time basis only.

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUAD 502</td>
<td>Administration in Public and Nonprofit Organizations</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 630</td>
<td>Emergency Planning and Preparedness</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 637</td>
<td>Managing Homeland Security</td>
<td>3</td>
</tr>
</tbody>
</table>

| Total Credits | 9 |

**Electives**

Students choose electives in the emergency management and homeland security area. A list of relevant electives is available under the concentration in emergency management and homeland security in the MPA (master of public administration) (p. 999).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

| Total Credits | 6 |

**Global Health and Security Graduate Certificate**

Banner Code: PP-CERG-GHS

**Academic Advising**

560 Founders Hall
Arlington Campus

359 Research Hall
Fairfax Campus

Website: schar.gmu.edu

The Schar School of Policy and Government offers certificate programs in conjunction with its master’s programs. The certificate in global health and security provides an introduction to the intersection of global public health and security, covering topics such as emerging infectious diseases, biosurveillance, the development of vaccines, and emergency

**Admissions**

Applicants to all graduate programs must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 90) section of this catalog. Participants must be admitted to a certificate program. Admission requirements are the same as those for the master’s programs and may be found on the Schar admissions web site (http://spgia.gmu.edu/admissions).
response to public health disasters. Students already pursuing a master’s degree in the school may, in most cases, after admission to a certificate program, earn an additional six credits (two courses) in Schar to receive a certificate in addition to the master’s degree.

The graduate certificate in global health and security may be pursued on a part-time or full-time basis.

Admissions & Policies

Admissions

Applicants to all graduate programs must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 90) section of this catalog. Participants must be admitted to a certificate program. Admission requirements are the same as those for the master’s programs and may be found on the Schar admissions web site (http://spgia.gmu.edu/admissions).

Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Termination from Program

Students admitted to a Schar program will be terminated from the program upon receiving one grade of F and are no longer eligible to take courses in the school. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. See the Academic Policies (p. 77) section of the catalog for additional policies pertaining to graduate students.

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 620</td>
<td>Global Health Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>GCH 543</td>
<td>Global Health</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Electives

Select three (9 credits) from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 620</td>
<td>Health Communication</td>
<td></td>
</tr>
<tr>
<td>GCH 560</td>
<td>Environmental Health</td>
<td></td>
</tr>
<tr>
<td>GCH 602</td>
<td>Global Infectious Diseases</td>
<td></td>
</tr>
<tr>
<td>GCH 640</td>
<td>U.S. and Global Public Health Systems</td>
<td></td>
</tr>
<tr>
<td>GCH 712</td>
<td>Introduction to Epidemiology</td>
<td></td>
</tr>
<tr>
<td>GCH 726</td>
<td>Advanced Methods in Epidemiology I</td>
<td></td>
</tr>
<tr>
<td>GCH 772</td>
<td>Social Epidemiology</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Global Systems Minor

Banner Code: GLOS

Academic Advising

359 Research Hall
Fairfax Campus

Global systems have become increasingly important to the way we live and work, and a global perspective makes us more aware of how we are connected to others around the world and to the whole of nature.

The interdisciplinary minor in global systems is designed to complement virtually any undergraduate major. It works well for majors in business disciplines, economics, languages, geography, government and international politics, history, and other disciplines that take a global view. Students in professional programs learn to connect their professional concerns to global issues of health care, trade and finance, or technology. Students in the liberal arts gain insights into their disciplines as they learn how the arts, humanities, sciences, and social sciences are affected by global issues such as demographic change, telecommunications, and environmental protection.

Other globally oriented courses may also fulfill or substitute for the requirements of this program with written permission of the coordinator prior to registration.

This is an interdisciplinary minor offered by the Schar School of Policy and Government (p. 961) and the College of Humanities and Social Sciences (p. 305).

Faculty

Lopez-Santana (minor advisor)

Admissions & Policies

Policies

Students must complete all coursework with a minimum GPA of 2.00. At least 9 credits must be at the 300 level or above. Eight credits of coursework must be unique to the minor.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements

Total credits: 18
### Required Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLOA 101</td>
<td>Introduction to Global Affairs (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 132</td>
<td>Introduction to International Politics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 125</td>
<td>Introduction to World History (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3

### Electives

Select five electives from at least two of the following fields:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEVA 132</td>
<td>Introduction to International Politics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CRIM 444</td>
<td>Issues in International Studies</td>
<td></td>
</tr>
<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
</tbody>
</table>

**Field A: Government, geography, and administration of justice**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 132</td>
<td>Introduction to International Politics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CRIM 444</td>
<td>Issues in International Studies</td>
<td></td>
</tr>
<tr>
<td>CRIM 405</td>
<td>Law and Justice around the World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 301</td>
<td>Political Geography</td>
<td></td>
</tr>
<tr>
<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 304</td>
<td>Population Geography (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GGS 305</td>
<td>Economic Geography</td>
<td></td>
</tr>
</tbody>
</table>

**Field B: Economics, anthropology, marketing, history, and sociology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 300</td>
<td>Civilizations</td>
<td></td>
</tr>
<tr>
<td>ANTH 312</td>
<td>Political Anthropology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 331</td>
<td>Refugees (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ANTH 375</td>
<td>Culture, Power, History</td>
<td></td>
</tr>
<tr>
<td>ECON 360</td>
<td>Economics of Developing Areas (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 361</td>
<td>Economic Development of Latin America (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 380</td>
<td>Economies in Transition (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 390</td>
<td>International Economics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>HIST 387</td>
<td>Topics in Global History (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>MKTG 407</td>
<td>Global Marketing</td>
<td></td>
</tr>
<tr>
<td>SOCI 332</td>
<td>The Urban World (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Field C: Environmental science, global health, systems engineering, urban and suburban studies, civil and infrastructure engineering**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 377</td>
<td>Applied Ecology</td>
<td></td>
</tr>
<tr>
<td>CEIE 100</td>
<td>Environmental Engineering around the World (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CEIE 450</td>
<td>Environmental Engineering Systems</td>
<td></td>
</tr>
</tbody>
</table>

**Field D: Modes of communication**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 305</td>
<td>Foundations of Intercultural Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>COMM 456</td>
<td>Comparative Mass Media (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>DANC 118</td>
<td>World Dance (Mason Core) (p. 142)</td>
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<tr>
<td>MUSI 103</td>
<td>Musics of the World (Mason Core) (p. 142)</td>
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<tr>
<td>MUSI 431</td>
<td>Music History in Society III (Mason Core) (p. 142)</td>
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<tr>
<td>THR 359</td>
<td>World Stages (Mason Core) (p. 142)</td>
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</tbody>
</table>

Total Credits: 15

1. Other globally-oriented courses may also be applied to this requirement with written approval of the director.

**Government and International Politics, BA**

Banner Code: PP-BA-GVIP

**Academic Advising**

359 Research Hall
Fairfax Campus

Phone: 703-993-1400
Email: gvip@gmu.edu
Website: schar.gmu.edu

**Admissions & Policies**

**Policies**

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

**Program Requirements**

Students must fulfill all Requirements for Bachelor’s Degrees (p. 87) including the Mason Core (p. 142). Students pursuing a BA in Government and International Politics must complete additional requirements for the BA degree in the Schar School of Policy and Government.

Students pursuing this degree must complete 43 credits in GOVT and earn a minimum grade of 2.00 in each course applied to the major.

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students pursuing a BA in Government and International Politics and wishing to narrow their focus may choose to concentrate in one of...
eight government fields or complete a higher credit concentration in Philosophy, Politics, and Economics.

### BA with or without Government Concentration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 101</td>
<td>Democratic Theory and Practice (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 132</td>
<td>Introduction to International Politics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 133</td>
<td>Introduction to Comparative Politics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 300</td>
<td>Research Methods and Analysis (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Senior Seminar**

Select one seminar from the following:

- GOVT 490 Synthesis Seminar (Mason Core) (p. 142) 3
- GOVT 491 Honors Seminar (Mason Core) (p. 142) 1

Total Credits 19

1 This option is for students who have been accepted to pursue honors in the major.

### Government Field Study

Select any eight advanced government field courses, with or without a government concentration

Total Credits 24

Students may complete a government concentration (four courses) in one field, then complete any four more advanced government field courses to satisfy this requirement. Students who do not pursue a government concentration may choose 24 credits from the advanced government field courses listed below (with restriction) for a broader learning experience.

### Concentration in American Institutions and Processes (AMIP)

<table>
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<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>GOVT 301</td>
<td>Public Law and the Judicial Process</td>
<td>3</td>
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<td>GOVT 302</td>
<td>American Political Development</td>
<td>3</td>
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<tr>
<td>GOVT 304</td>
<td>American State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 305</td>
<td>Contemporary American Federalism</td>
<td>3</td>
</tr>
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<td>GOVT 307</td>
<td>Legislative Behavior</td>
<td>3</td>
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<tr>
<td>GOVT 308</td>
<td>The American Presidency</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 309</td>
<td>Government and Politics of Metropolitan Areas</td>
<td>3</td>
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<tr>
<td>GOVT 311</td>
<td>Public Opinion and Electoral Behavior</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 319</td>
<td>Issues in Government and Politics</td>
<td>1-3</td>
</tr>
<tr>
<td>GOVT 344</td>
<td>American Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 357</td>
<td>Urban Planning</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 364</td>
<td>Public Policy Making</td>
<td>3</td>
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<tr>
<td>GOVT 365</td>
<td>State and Regional Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 409</td>
<td>Virginia Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 422</td>
<td>Constitutional Interpretation</td>
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<tr>
<td>GOVT 423</td>
<td>Constitutional Law: Civil Rights and Liberties</td>
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### Concentration in Comparative Politics (CPOL)

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<th>Title</th>
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<tbody>
<tr>
<td>GOVT 331</td>
<td>Government and Politics of Latin America</td>
<td>3</td>
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<tr>
<td>GOVT 332</td>
<td>Government and Politics of the Middle East and North Africa</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 333</td>
<td>Government and Politics of Asia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 334</td>
<td>Government and Politics of Europe</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 337</td>
<td>Ethnic Politics in Western Europe and North America</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 338</td>
<td>Government and Politics of Russia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 339</td>
<td>Issues in the Politics of Advanced Industrial Societies</td>
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</tr>
<tr>
<td>GOVT 340</td>
<td>Central Asian Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 341</td>
<td>Chinese Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 342</td>
<td>Diplomacy</td>
<td>3</td>
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<td>GOVT 344</td>
<td>American Foreign Policy</td>
<td>3</td>
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<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
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<tr>
<td>GOVT 430</td>
<td>Comparative Political Leadership</td>
<td>3</td>
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<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
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<tr>
<td>GOVT 434</td>
<td>Democracy in Global Perspective</td>
<td>3</td>
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<tr>
<td>GOVT 443</td>
<td>Law and Ethics of War</td>
<td>3</td>
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<tr>
<td>Code</td>
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<td>Credits</td>
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<tr>
<td>GOVT 444</td>
<td>Issues in International Studies</td>
<td>1-3</td>
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<tr>
<td>GOVT 445</td>
<td>Human Rights</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 447</td>
<td>Revolution and International Politics</td>
<td>3</td>
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<tr>
<td>GOVT 448</td>
<td>Ethics and International Politics</td>
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**Concentration in International Political Economy (IPE)**

<table>
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<tbody>
<tr>
<td>GOVT 322</td>
<td>International Relations Theory</td>
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<tr>
<td>GOVT 339</td>
<td>Issues in the Politics of Advanced Industrial Societies</td>
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</tr>
<tr>
<td>GOVT 343</td>
<td>International Political Economy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 366</td>
<td>Public Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 367</td>
<td>Money, Markets and Economic Policy</td>
<td>3</td>
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<tr>
<td>GOVT 368</td>
<td>Tools for Economic Policy Analysis</td>
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<tr>
<td>GOVT 444</td>
<td>Issues in International Studies</td>
<td>1-3</td>
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<tr>
<td>GOVT 446</td>
<td>International Law and Organization</td>
<td>3</td>
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<tr>
<td>GOVT 469</td>
<td>Philosophy, Politics, and Economics</td>
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<td>ECON 385</td>
<td>International Economic Policy</td>
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**Concentration in International Relations (INTR)**

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<tr>
<td>GOVT 342</td>
<td>Diplomacy</td>
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<tr>
<td>GOVT 344</td>
<td>American Foreign Policy</td>
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<td>Islam and Politics</td>
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<td>GOVT 346</td>
<td>American Security Policy</td>
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<td>GOVT 347</td>
<td>International Security</td>
<td>3</td>
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<td>GOVT 443</td>
<td>Law and Ethics of War</td>
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<tr>
<td>GOVT 444</td>
<td>Issues in International Studies</td>
<td>1-3</td>
</tr>
<tr>
<td>GOVT 445</td>
<td>Human Rights</td>
<td>3</td>
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<tr>
<td>GOVT 446</td>
<td>International Law and Organization</td>
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<td>GOVT 447</td>
<td>Revolution and International Politics</td>
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<td>GOVT 448</td>
<td>Ethics and International Politics</td>
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**Concentration in Law, Philosophy and Governance (LPGV)**

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<td>Public Law and the Judicial Process</td>
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<td>GOVT 302</td>
<td>American Political Development</td>
<td>3</td>
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<tr>
<td>GOVT 307</td>
<td>Legislative Behavior</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 322</td>
<td>International Relations Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 324</td>
<td>Classical Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 327</td>
<td>Contemporary Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 328</td>
<td>Global Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 329</td>
<td>Issues in Political Theories and Values</td>
<td>1-3</td>
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<tr>
<td>GOVT 334</td>
<td>Government and Politics of Europe</td>
<td>3</td>
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<td>GOVT 407</td>
<td>Law and Society</td>
<td>3</td>
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<td>GOVT 420</td>
<td>American Political Thought</td>
<td>3</td>
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<td>GOVT 422</td>
<td>Constitutional Interpretation</td>
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<tr>
<td>GOVT 423</td>
<td>Constitutional Law: Civil Rights and Liberties</td>
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**Concentration in Political Analysis (PA)**

<table>
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<tr>
<td>GOVT 307</td>
<td>Legislative Behavior</td>
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<tr>
<td>GOVT 343</td>
<td>International Political Economy</td>
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<tr>
<td>GOVT 356</td>
<td>Public Budgeting and Finance</td>
<td>3</td>
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<td>GOVT 357</td>
<td>Urban Planning</td>
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<td>GOVT 358</td>
<td>Nonprofit Financial Planning</td>
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<td>GOVT 366</td>
<td>Public Policy Analysis</td>
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<tr>
<td>GOVT 367</td>
<td>Money, Markets and Economic Policy</td>
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<tr>
<td>GOVT 368</td>
<td>Tools for Economic Policy Analysis</td>
<td>3</td>
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<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
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<tr>
<td>GOVT 469</td>
<td>Philosophy, Politics, and Economics</td>
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<tr>
<td>STAT 350</td>
<td>Introductory Statistics II</td>
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*Any 400-level STAT course*

**Concentration in Political Behavior and Identity Politics (PBIP)**

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<tr>
<td>GOVT 311</td>
<td>Public Opinion and Electoral Behavior</td>
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<tr>
<td>GOVT 312</td>
<td>Political Parties and Campaigns</td>
<td>3</td>
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<tr>
<td>GOVT 313</td>
<td>Political Psychology</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 318</td>
<td>Interest Groups, Lobbying, and the Political Process</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 319</td>
<td>Issues in Government and Politics</td>
<td>1-3</td>
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<tr>
<td>GOVT 345</td>
<td>Islam and Politics</td>
<td>3</td>
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<tr>
<td>GOVT 353</td>
<td>Social Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 412</td>
<td>Politics and the Mass Media</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 414</td>
<td>Politics of Race and Gender</td>
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</tr>
<tr>
<td>GOVT 423</td>
<td>Constitutional Law: Civil Rights and Liberties</td>
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**Concentration in Public Policy and Administration (PPA)**

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>GOVT 304</td>
<td>American State and Local Government</td>
<td>3</td>
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<tr>
<td>GOVT 329</td>
<td>Issues in Political Theories and Values</td>
<td>1-3</td>
</tr>
<tr>
<td>GOVT 351</td>
<td>Administration in the Political System</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 353</td>
<td>Social Entrepreneurship</td>
<td>3</td>
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<tr>
<td>GOVT 354</td>
<td>Nonprofit Sector in Society</td>
<td>3</td>
</tr>
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<td>GOVT 355</td>
<td>Public Personnel Administration</td>
<td>3</td>
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<td>GOVT 356</td>
<td>Public Budgeting and Finance</td>
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<td>GOVT 357</td>
<td>Urban Planning</td>
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<td>GOVT 358</td>
<td>Nonprofit Financial Planning</td>
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</tr>
<tr>
<td>GOVT 361</td>
<td>Introduction to Environmental Policy</td>
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</table>
GOVT 362 - GOVT 349
GOVT 430 - GOVT 449

Public Policy and Administration
GOVT 467 - Current Issues in Economic Policy
GOVT 469 - Philosophy, Politics, and Economics

Additional Upper Level GOVT Courses
GOVT 422 - Constitutional Interpretation
Two additional upper division GOVT courses

Total Credits: 24

Additional Concentration Courses
Code | Title | Credits
---|---|---
PHIL 324 | Modern Western Political Theory | 3
or PHIL 327 | Contemporary Western Political Theory
PHIL 357 | Philosophy of the Social Sciences | 3
or PHIL 371 | Philosophy of Natural Sciences
PHIL 358 | Ethics and Economics | 3
PHIL 411 | Theories of Decision | 3
ECON 103 | Contemporary Microeconomic Principles | 3
(Mason Core) (p. 142)
ECON 104 | Contemporary Macroeconomic Principles | 3
(Mason Core) (p. 142)
ECON 306 | Intermediate Microeconomics | 3
ECON 412 | Game Theory and Economics of Institutions | 3

Total Credits: 24

Writing-Intensive Requirement
The university requires all students to complete at least one course designated “writing intensive” in their majors. Students majoring in government and international politics may fulfill this requirement by successfully completing GOVT 490 Synthesis Seminar (Mason Core) (p. 142) or GOVT 491 Honors Seminar (Mason Core) (p. 142) in their major programs.

Schar Requirements in Addition to Mason Core Below
Code | Title | Credits
---|---|---
One course in Philosophy or Religion
One additional course in Social and Behavioral Sciences
One course in Non-Western Culture
Proficiency in a foreign language through the intermediate level

Mason Core
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

Code | Title | Credits
---|---|---
Foundation Requirements
Written Communication (ENGH 101) (p. 142) | 3
Oral Communication (p. 142) | 3
Quantitative Reasoning (p. 143) | 3
Information Technology and Computing (p. 143) | 3

Exploration Requirements

Individualized Concentration (IND)
Create your own concentration consisting of four upper level courses with Director approval. A minimum of two courses in this concentration must be GOVT.

BA with Non-Government Concentration
Concentration in Philosophy, Politics, and Economics (PPE)
Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>GOVT 101</td>
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<td>Introduction to American Government (Mason Core) (p. 142)</td>
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<td>GOVT 132</td>
<td>Introduction to International Politics (Mason Core) (p. 142)</td>
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<td>GOVT 133</td>
<td>Introduction to Comparative Politics (Mason Core) (p. 142)</td>
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<td>GOVT 300</td>
<td>Research Methods and Analysis (Mason Core) (p. 142)</td>
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Total Credits: 16

Senior Seminar

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<td>Synthesis Seminar (Mason Core) (p. 142)</td>
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<td>GOVT 491</td>
<td>Honors Seminar (Mason Core) (p. 142)</td>
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</table>

Total Credits: 3

1 This option is for students who have been accepted to pursue honors in the major.

Government Field Study
Students complete the following coursework:

<table>
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<tr>
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<td>GOVT 401 - GOVT 419</td>
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<tr>
<td>Political Theory and Law</td>
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<tr>
<td>GOVT 323</td>
<td>Classical Western Political Theory</td>
<td>3</td>
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<tr>
<td>International and Comparative Politics</td>
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<td></td>
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<tr>
<td>Select one course from the following:</td>
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</table>
Integration Requirements
Written Communications (ENGH 302) (p. 142)  3
Writing-Intensive (p. 151)  1  3
Synthesis/Capstone (p. 153)  2  3

Total Credits  40

1 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted toward the total required for Mason Core.
2 Minimum 3 credits required.

Honors

Honors in the Major
Highly qualified students majoring in Government and International Politics and Public Administration may pursue advanced work leading to graduation with honors in the major. Those students selected for participation in this program take a two-course sequence: GOVT 491 Honors Seminar (Mason Core) (p. 142) and GOVT 496 Directed Readings and Research. To graduate with honors in the major, students must complete these courses with a minimum GPA of 3.50.

Accelerated Master’s

Bachelor’s Degree (any)/Biodefense, Accelerated MS
Overview
Highly qualified undergraduates in any major may apply to the accelerated Biodefense, MS. If accepted, students will be able to earn a bachelor’s degree in their chosen major and a Biodefense, MS with a reduced number of overall credits and within a reduced time frame, sometimes within five years.

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admission
Please see the Graduate Admissions (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including at least 12 credits of Government, Economics, and/or Global Affairs courses, and have a minimum GPA of 3.50 in all coursework applied to the degree. The courses are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 504</td>
<td>Grand Strategy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 506</td>
<td>Ethics and the Use of Force</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are BIOD 604 Emerging Infectious Diseases I: Bacteria and Toxins, GOVT 500 The Scientific Method and Research Design, BIOD 605 Emerging Infectious Diseases II: Viral Agents and BIOD 620 Global Health Security Policy. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

Bachelor’s Degree (any)/International Security, Accelerated MA
Overview
Highly-qualified undergraduates in any major may apply to the accelerated MA degree program in International Security. If accepted students will be able to earn a bachelor’s degree in their major and an MA in International Security with a reduced number of overall credits and within a reduced time frame, sometimes within five years. More information on bachelor’s/accelerated master’s programs may be found in AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP 6.9 Requirements for Master’s Degrees. (p. 94)

Admission
Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including at least 12 credits of Government, Economics, and/or Global Affairs courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

Accelerated Option Requirements
While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 504</td>
<td>Grand Strategy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 506</td>
<td>Ethics and the Use of Force</td>
<td>3</td>
</tr>
</tbody>
</table>
Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

**Bachelor’s Degree (any)/International Commerce and Policy, Accelerated MA**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated MA degree program in International Commerce and Policy. If accepted students will be able to earn a bachelor’s degree in their major and an MA in International Commerce and Policy with a reduced number of overall credits and within a reduced time frame, sometimes within five years. More information on bachelor’s/accelerated master’s programs may be found in AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP.6.9 Requirements for Master’s Degrees. (p. 94)

**Admission**

Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including 12 credits of Government, Economics and/or Global Affairs courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are chosen from GOVT 500 The Scientific Method and Research Design, GOVT 510 American Government and Politics, GOVT 520 Political Theory, GOVT 530 Comparative Politics, GOVT 540 International Relations. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

**Bachelor’s Degree (any)/Political Science, Accelerated MA**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated MA degree in Political Science. If accepted, students will be able to earn a bachelor’s degree in their chosen major and a MA in Political Science with a reduced number of overall credits and within a reduced time frame, sometimes five years. More information on bachelor’s/accelerated master’s programs may be found in AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP.6.9 Requirements for Master’s Degrees. (p. 94)

**Admission**

See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines for the Political Science master’s program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including 12 GOVT credits, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are chosen from ITRN 500 Global Political Economy, ITRN 504 Microeconomics and Trade Policy, ITRN 503 Macroeconomic Policy in the Global Economy and ITRN 605 Technology, Culture and Commerce. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

**Bachelor’s Degree (any)/Public Administration, Accelerated MPA**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated master’s degree in public administration. If accepted, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in public administration with a reduced number of overall credits and within a reduced time frame, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Information specific to the accelerated MPA program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).
To be considered for this accelerated master's program, applicants must have completed a minimum of 75 credits, including 12 GOVT credits, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master's students complete two graduate courses (six credits) that may be counted toward both the bachelor's and master's degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master's degree. The courses are PUAD 502 Administration in Public and Nonprofit Organizations, POGO 511 Introductory Data Analysis for Policy and Government, PUAD 520 Organization Theory and Management Behavior and PUAD 540 Public Policy Process. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor's/Accelerated Master's Transition Form to apply credits to the master's degree. Students must begin their master's program the semester immediately following conferral of the undergraduate degree (excluding summer).

**Bachelor's Degree (any)/Public Policy, Accelerated MPP**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated Master of Public Policy (MPP) program. If accepted students will be able to earn a bachelor's degree in their chosen major and the Master of Public Policy with a reduced number of overall credits and within a reduced time frame, sometimes within five years. More information on bachelor's/accelerated master's programs may be found in AP.6.7 Bachelor's/Accelerated Master's Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. See AP.6.9 Requirements for Master's Degrees. (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-9)

**Admission**

Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Information specific to the accelerated Master of Public Policy program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

To be considered for this accelerated master's program, applicants must have completed a minimum of 75 credits, including 12 credits of Government and/or Economics courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master's students complete two graduate courses (six credits) that may be counted toward both the bachelor's and master's degrees. In addition, students may take another two courses (six credits) from the following list to be held as reserve graduate credit and count only toward the master's degree. The student must have a minimum GPA of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 500</td>
<td>Theory and Practice in Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 503</td>
<td>Culture, Organization, and Technology</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 503</td>
<td>Macroeconomic Policy in the Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
</tbody>
</table>

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor's/Accelerated Master's Transition Form to apply credits to the master's degree. Students must begin their master's program the semester immediately following conferral of the undergraduate degree (excluding summer).

**International Commerce and Policy, MA**

**Banner Code: PP-MA-ICP**

**Academic Advising**

560 Founders Hall
Arlington Campus

359 Research Hall
Fairfax Campus

Website: schar.gmu.edu

The International Commerce and Policy, MA program (ICP) is an interdisciplinary course of study to help students from around the world prepare for jobs in the new economy. Unlike traditional international affairs programs, the degree is focused on such international economic issues as global trade and investment. The MA in international commerce and policy differs from an MBA program by providing training in the political, social, and technological aspects of the global economy. In today's world, it is critical for all participants in global markets to understand the multifaceted environment in which they work.

**Faculty**

The core faculty is augmented by adjunct faculty members who bring a wealth of practical knowledge and experience, as well as strong academic qualifications to the program. Adjuncts are drawn from the U.S. Commerce and State Departments, the Office of the U.S. Trade Representative, and the International Trade Commission, among other government agencies, as well as from the private sector, the think tank community, and trade associations.

**Courses**

Courses are offered primarily in the late afternoon and evening to fit the schedules of busy professionals. In addition to classroom study, the program emphasizes experiential learning by supporting student internships, cooperative education, and research activities with private- and public-sector employers, and sponsoring a variety of study-abroad experiences.
Admissions & Policies

Admissions

Applications

Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

Students from all academic backgrounds are welcome to apply; however, some knowledge of economics, preferably through at least two undergraduate economics courses, is encouraged. While many students may have prior educational and work-related training in business and economics, others see the ICP Program as a bridge from government, education, and other non-business occupations to careers in the global economy.

Completed applications for fall and spring semesters are reviewed on a rolling basis, with late applications considered on a space-available basis. Students may be admitted for nondegree study and apply a limited number of credits toward the master's degree should they choose to apply to the degree program later, in accordance with university policy.

Policies

For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Termination from Program

Students admitted to an Schar graduate program will be terminated from Schar upon receiving one grade of F and are no longer eligible to take courses in Schar. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses.

Program Requirements

The ICP Program requires 36 credits of coursework. All degree candidates must take 21 credits of work in required courses. The remaining 15 credits consist of electives that may include internships, independent studies, and study abroad. Upon entering the program students complete core courses first to prepare for higher-level elective coursework.

Requirements

Degree Requirements

Total credits: 36

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITRN 500</td>
<td>Global Political Economy</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 501</td>
<td>Methods of Analysis for International Commerce and Policy</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 503</td>
<td>Macroeconomic Policy in the Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 504</td>
<td>Microeconomics and Trade Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

Select 15 credits of electives in consultation with the student's advisor

Total Credits 15

If desired, a student has the option to declare one of three concentrations. Students without a concentration may select any ITRN or POGO course, any courses from the concentrations listed below, or other courses as approved by the advisor or program director.

Concentration in Global Finance, Investment and Trade (GFIT)

Select four courses of the 15 elective credits within the area of concentration. Preapproved courses include the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 622</td>
<td>Negotiating in the International Arena</td>
<td></td>
</tr>
<tr>
<td>GOVT 641</td>
<td>Global Governance</td>
<td></td>
</tr>
<tr>
<td>GOVT 742</td>
<td>International Negotiation</td>
<td></td>
</tr>
<tr>
<td>ITRN 604</td>
<td>International Trade and Technology</td>
<td></td>
</tr>
<tr>
<td>ITRN 612</td>
<td>International Business Operations and the Multinational Corporation</td>
<td></td>
</tr>
<tr>
<td>ITRN 701</td>
<td>Special Topics in International Commerce and Policy</td>
<td></td>
</tr>
<tr>
<td>ITRN 702</td>
<td>Special Topics in International Commerce and Policy: Study Abroad</td>
<td></td>
</tr>
<tr>
<td>ITRN 710</td>
<td>International Business Transactions: Finance and Investment</td>
<td></td>
</tr>
<tr>
<td>ITRN 711</td>
<td>United States Law and Global Trade</td>
<td></td>
</tr>
<tr>
<td>ITRN 712</td>
<td>World Trade Organization and Global Trade</td>
<td></td>
</tr>
<tr>
<td>ITRN 731</td>
<td>Business-to-Business Marketing in International Commerce</td>
<td></td>
</tr>
<tr>
<td>ITRN 736</td>
<td>Sources of Growth in East Asia</td>
<td></td>
</tr>
<tr>
<td>ITRN 738</td>
<td>Fundamentals of International Marketing</td>
<td></td>
</tr>
<tr>
<td>ITRN 740</td>
<td>Trade and Regulatory Compliance</td>
<td></td>
</tr>
<tr>
<td>ITRN 752</td>
<td>Global Business and Policy</td>
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</tr>
<tr>
<td>ITRN 757</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITRN 758</td>
<td>Global Market Planning Practicum</td>
<td></td>
</tr>
<tr>
<td>ITRN 759</td>
<td>Country Risk Analysis</td>
<td></td>
</tr>
<tr>
<td>ITRN 761</td>
<td>European Political and Economic Union</td>
<td></td>
</tr>
<tr>
<td>ITRN 767</td>
<td>Political Economy and Integration in Latin America</td>
<td></td>
</tr>
<tr>
<td>ITRN 770</td>
<td>International Contract Negotiation</td>
<td></td>
</tr>
<tr>
<td>ITRN 771</td>
<td>Trade, Investment, and Politics in South and Southeast Asia</td>
<td></td>
</tr>
<tr>
<td>ITRN 791</td>
<td>Advanced Trade Policy</td>
<td></td>
</tr>
<tr>
<td>PUAD 739</td>
<td>Issues in International Management</td>
<td></td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 736</td>
<td>International Migration and Public Policy</td>
<td></td>
</tr>
</tbody>
</table>

ITRN 602 | Global Financial Crises and Institutions | 3      |
ITRN 603 | Global Trade Relations                    | 3      |
ITRN 605 | Technology, Culture and Commerce          | 3      |

Total Credits 21
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>BIOD 620</td>
<td>Global Health Security Policy</td>
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<tr>
<td>GOVT 641</td>
<td>Global Governance</td>
<td></td>
</tr>
<tr>
<td>GOVT 631</td>
<td>Seminar in Comparative Politics and Institutions</td>
<td></td>
</tr>
<tr>
<td>GOVT 734</td>
<td>Democratization</td>
<td></td>
</tr>
<tr>
<td>GOVT 735</td>
<td>Comparative Public Management</td>
<td></td>
</tr>
<tr>
<td>GOVT 742</td>
<td>International Negotiation</td>
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</tr>
<tr>
<td>ITRN 701</td>
<td>Special Topics in International Commerce and Policy</td>
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<tr>
<td>ITRN 702</td>
<td>Special Topics in International Commerce and Policy</td>
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<tr>
<td>ITRN 718</td>
<td>Sources of Growth in East Asia</td>
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<tr>
<td>ITRN 757</td>
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<td></td>
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<tr>
<td>ITRN 759</td>
<td>Country Risk Analysis</td>
<td></td>
</tr>
<tr>
<td>ITRN 760</td>
<td>International Environmental Politics</td>
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<tr>
<td>ITRN 761</td>
<td>European Political and Economic Union</td>
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</tr>
<tr>
<td>ITRN 767</td>
<td>Political Economy and Integration in Latin America</td>
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</tr>
<tr>
<td>ITRN 770</td>
<td>International Contract Negotiation</td>
<td></td>
</tr>
</tbody>
</table>
| ITRN 771 | Trade, Investment, and Politics in South and Southeast Asia | |}

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
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<tr>
<td>PUBP 763</td>
<td>Illicit Trade</td>
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</tr>
<tr>
<td>PUBP 782</td>
<td>International Financial Policy</td>
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<tr>
<td>PUBP 783</td>
<td>Global Governance</td>
<td></td>
</tr>
<tr>
<td>PUBP 750</td>
<td>Topics in Policy and Government</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PUBP 750</td>
<td>Topics in Policy and Government</td>
<td>12</td>
</tr>
</tbody>
</table>

1 Courses must be approved by the student's academic advisor.

**Concentration in Global Development and Governance (GDGV)**

Select four courses of the 15 elective credits within the area of concentration. Preapproved courses include the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOD 620</td>
<td>Global Health Security Policy</td>
<td></td>
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<tr>
<td>BIOD 709</td>
<td>Nonproliferation and Arms Control</td>
<td></td>
</tr>
<tr>
<td>BIOD 722</td>
<td>Examining Terrorist Groups</td>
<td></td>
</tr>
<tr>
<td>BIOD 725</td>
<td>Terrorism and Weapons of Mass Destruction</td>
<td></td>
</tr>
<tr>
<td>BIOD 726</td>
<td>Food Security</td>
<td></td>
</tr>
<tr>
<td>ITRN 701</td>
<td>Special Topics in International Commerce and Policy</td>
<td></td>
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</tbody>
</table>
| ITRN 710 | International Business Transactions: Finance and Investment | |}

<table>
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<th>Code</th>
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</thead>
<tbody>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
</tbody>
</table>
| PUBP 714 | Topics in Transportation Policy, Operations, and Logistics | |}

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 736</td>
<td>International Migration and Public Policy</td>
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</tr>
<tr>
<td>PUBP 743</td>
<td>National Security Management and Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 751</td>
<td>International Police Operations</td>
<td></td>
</tr>
<tr>
<td>PUBP 759</td>
<td>National Security Law and Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 763</td>
<td>Illicit Trade</td>
<td></td>
</tr>
<tr>
<td>PUBP 764</td>
<td>Transnational Crime and Corruption</td>
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</tr>
<tr>
<td>PUBP 765</td>
<td>Human Smuggling and Trafficking</td>
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</tr>
<tr>
<td>PUBP 769</td>
<td>Political Violence and Terrorism</td>
<td></td>
</tr>
<tr>
<td>PUBP 781</td>
<td>Entrepreneurship and Economic Development</td>
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</tr>
<tr>
<td>PUBP 783</td>
<td>Global Governance</td>
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<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
<td>12</td>
</tr>
</tbody>
</table>

1 Courses must be approved by the student's academic advisor.
Accelerated Master's

Bachelor's Degree (any)/International Commerce and Policy, Accelerated MA

Overview
Highly-qualified undergraduates in any major may apply to the accelerated MA degree program in International Commerce and Policy. If accepted students will be able to earn a bachelor's degree in their major and an MA in International Commerce and Policy with a reduced number of overall credits and within a reduced time frame, sometimes within five years. More information on bachelor's/accelerated master's programs may be found in AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP6.9 Requirements for Master's Degrees. (p. 94)

Admission
Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including at least 12 credits of Government, Economics and/or Global Affairs courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses (six credits) that may be counted toward both the bachelor's and master's degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master's degree. The courses are ITRN 500 Global Political Economy, ITRN 504 Microeconomics and Trade Policy, ITRN 503 Macroeconomic Policy in the Global Economy and ITRN 605 Technology, Culture and Commerce. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor's/Accelerated Master's Transition Form to apply credits to the master's degree. Students must begin their master's program the semester immediately following conferral of the undergraduate degree (excluding summer).

International Security, MA

Banner Code: PP-MA-INLS

Academic Advising
560 Founders Hall
Arlington Campus
359 Research Hall
Fairfax Campus
Website: schar.gmu.edu

The program trains early to mid-career professionals who seek the analytical and substantive capabilities to address the security challenges of the 21st century. In addition to understanding the traditional military and diplomatic approaches that characterized the state-centric security framework of the last century, the program’s core courses will provide a firm grounding with regard to public-private and international collaborative responses to emerging and unconventional threats, ranging from transnational crime, terrorism, illicit trade, proliferation of emerging technologies and WMD, and corruption to state fragility and ethnic and sectarian conflict.

Admissions & Policies

Admissions
See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines for the MA in International Security program may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

Completed applications for fall and spring semesters are reviewed on a rolling basis, with late applications considered on a space-available basis. Students may be admitted for nondegree study and apply a limited number of credits toward the master’s degree should they choose to apply to the degree program later, in accordance with university policy.

Policies
Students admitted to a Schar program will be terminated from Schar upon receiving one grade of F and are no longer eligible to take courses in Schar. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. For additional information, see Graduate Policies (p. 90).

Requirements

Degree Requirements
Total credits: 36

International Security Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 504</td>
<td>Grand Strategy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 506</td>
<td>Ethics and the Use of Force</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 505</td>
<td>Politics and Practice of International Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 745</td>
<td>International Security</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 760</td>
<td>National Security Technology and Policy</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits
21

Electives
Students may pursue the program with or without a concentration.

Elective Options For Students Not Pursuing a Concentration
Focus area courses have been selected to provide additional breadth and depth on specific security challenges or areas of policy debate.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select five elective courses (15 credits), including at least one course (3 credits) from each of the three areas below. Exceptions must be approved by the student advisor.</td>
<td></td>
</tr>
</tbody>
</table>

**Managing Global Risks**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 610</td>
<td>Advanced Topics in Global Health Security</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 620</td>
<td>Global Health Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 641</td>
<td>Global Governance</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 734</td>
<td>Democratization</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 739</td>
<td>Issues in Comparative and International Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 741</td>
<td>Advanced Seminar in International Politics</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 631</td>
<td>Disaster Response Operations and Recovery</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 637</td>
<td>Managing Homeland Security</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 654</td>
<td>Analysis for Peace Operations</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 655</td>
<td>State- and Institution-Building</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 714</td>
<td>Topics in Transportation Policy, Operations, and Logistics</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 751</td>
<td>International Police Operations</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 777</td>
<td>Critical Infrastructure Protection: Policy and Practice</td>
<td>3</td>
</tr>
<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**National Security Policy and Processes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 609</td>
<td>Biodefense Strategy</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 610</td>
<td>Advanced Topics in Global Health Security</td>
<td>1-4</td>
</tr>
<tr>
<td>BIOD 705</td>
<td>Intelligence: Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 706</td>
<td>Nuclear, Biological, and Chemical Weapons Policy and Security</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 709</td>
<td>Nonproliferation and Arms Control</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 751</td>
<td>Biosurveillance</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 713</td>
<td>The Constitution, Criminal Procedure, and Security</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 742</td>
<td>International Negotiation</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 746</td>
<td>Media and International Affairs</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 755</td>
<td>Seminar in Politics and Bureaucracy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 758</td>
<td>Homeland/Transportation Security Administration</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 759</td>
<td>Issues in Public Administration and Management</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Regional and Transnational Security Challenges**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 841</td>
<td>Ethics and Human Rights in International Affairs</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 843</td>
<td>Diplomacy</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 504</td>
<td>Managing in the International Arena: Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 520</td>
<td>Organization Theory and Management Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 630</td>
<td>Emergency Planning and Preparedness</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 634</td>
<td>Management of International Security</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 636</td>
<td>The NGO: Policy and Management</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 727</td>
<td>Seminar in Risk Assessment and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 653</td>
<td>Interagency Operations in Conflict and Post-Conflict Settings</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td>1-3</td>
</tr>
<tr>
<td>PUBP 740</td>
<td>U.S. Foreign Policy: Formulation and Practice</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 743</td>
<td>National Security Management and Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 759</td>
<td>National Security Law and Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 766</td>
<td>Modern Counterinsurgency: Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Elective Options For Students Pursuing a Concentration**

If desired, a student has the option to declare one of three concentrations.

**Concentration in Intelligence (IN)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 722</td>
<td>Examining Terrorist Groups</td>
<td>3</td>
</tr>
</tbody>
</table>

Select four courses of the 15 elective credits within the area of concentration. Preapproved courses include the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 722</td>
<td>Examining Terrorist Groups</td>
<td>3</td>
</tr>
</tbody>
</table>
BIOD 725  Terrorism and Weapons of Mass Destruction  3
BIOD 610  Advanced Topics in Global Health Security (Specific topic approved by advisor)  1-4
PUBP 570  Policy Writing Fundamentals  3
PUBP 710  Topics in Public Policy (Specific Topic Approved by Advisor)  1-3
PUBP 754  Geographic Information Systems and Spatial Analysis for Public Policy  3
POGO 750  Topics in Policy and Government (Specific Topic Approved by Advisor)  1-3

1 Additional courses must be approved by the student's academic advisor.

### Concentration in Peace Operations (PO)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 650</td>
<td>International Conflict and Crisis Response</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 651</td>
<td>Peace and Stabilization Operations</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 652</td>
<td>Strategies for Peace and Stabilization Operations</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 655</td>
<td>State- and Institution-Building</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy (Specific Topic Approved by Advisor)</td>
<td>1-3</td>
</tr>
<tr>
<td>PUBP 751</td>
<td>International Police Operations</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Additional courses must be approved by the student's academic advisor.

### Concentration in Transnational Challenges (TC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 722</td>
<td>Examining Terrorist Groups</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy (Specific Topic Approved by Advisor)</td>
<td>1-3</td>
</tr>
<tr>
<td>PUBP 751</td>
<td>International Police Operations</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 763</td>
<td>Illicit Trade</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 764</td>
<td>Transnational Crime and Corruption</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 765</td>
<td>Human Smuggling and Trafficking</td>
<td>3</td>
</tr>
<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government (Specific Topic Approved by Advisor)</td>
<td>1-3</td>
</tr>
</tbody>
</table>

1 Additional courses must be approved by the student's academic advisor.

### Accelerated Master's

**Bachelor's Degree (any)/International Security, Accelerated MA**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated MA degree program in International Security. If accepted students will be able to earn a bachelor's degree in their major and an MA in International Security with a reduced number of overall credits and within a reduced time frame, sometimes within five years. More information on bachelor’s/accelerated master’s programs may be found in AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP.6.9 Requirements for Master’s Degrees. (p. 94)

**Admission**

Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including at least 12 credits of Government, Economics and/or Global Affairs courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 504</td>
<td>Grand Strategy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 506</td>
<td>Ethics and the Use of Force</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

**International Security Minor**

Banner Code: INLS

**Academic Advising**

359 Research Hall
International/Comparative Studies Minor

Banner Code: ICS

Academic Advising
359 Research Hall
Fairfax Campus

In this minor, students learn the key features of government systems as they are applied in different contexts around the world. Students explore the interaction between government, society, and humans' most important challenges with respect to different regions and the international community.

Faculty
Butt (minor advisor)

Admissions & Policies

Policies
Students must complete all coursework with a minimum GPA of 2.00 and 8 credits of coursework must be unique to the minor. For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students must complete all coursework with a minimum grade of 2.00 in each course.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 132</td>
<td>Introduction to International Politics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 346</td>
<td>American Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 347</td>
<td>International Security</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Electives

Select four electives from the following categories with only one from each category:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Any GOVT 330–GOVT 339 world regions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any GOVT 340–GOVT 349 politics and policy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any GOVT 430–GOVT 439 global perspectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any GOVT 440–GOVT 449 international studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVT 480</td>
<td>Internship (when relevant, with the prior written approval of the minor advisor)</td>
<td>12</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>
Legal Studies Minor

Banner Code: LGLS

Academic Advising
359 Research Hall
Fairfax Campus

The minor in legal studies focuses on constitutional foundations and interpretations, legal processes, the development of common, statutory, and agency law, and the functions of judicial systems.

Faculty
Walker (minor advisor)

Admissions & Policies

Policies
Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 18

Students must complete all coursework with a minimum grade of 2.0 in each course.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 301</td>
<td>Public Law and the Judicial Process</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Electives

Select four from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 480</td>
<td>Internship (when relevant, may be used to partially meet this requirement with prior written approval of the minor advisor.)</td>
<td>12</td>
</tr>
<tr>
<td>GOVT 307</td>
<td>Legislative Behavior</td>
<td></td>
</tr>
<tr>
<td>GOVT 414</td>
<td>Politics of Race and Gender</td>
<td></td>
</tr>
<tr>
<td>GOVT 420</td>
<td>American Political Thought</td>
<td></td>
</tr>
<tr>
<td>GOVT 422</td>
<td>Constitutional Interpretation</td>
<td></td>
</tr>
<tr>
<td>GOVT 423</td>
<td>Constitutional Law: Civil Rights and Liberties</td>
<td></td>
</tr>
<tr>
<td>GOVT 446</td>
<td>International Law and Organization</td>
<td></td>
</tr>
<tr>
<td>GOVT 452</td>
<td>Administrative Law and Procedures</td>
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</tr>
<tr>
<td>CRIM 424</td>
<td>Constitutional Law: Criminal Process and Rights</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

National Security and Public Policy Graduate Certificate

Banner Code: PP-CERG-NSP

Academic Advising
560 Founders Hall
Arlington Campus
359 Research Hall
Fairfax Campus

Website: schar.gmu.edu

The Schar School offers certificate programs in conjunction with its master’s programs. Students already pursuing a master’s degree in the school may, in most cases, after admission to a certificate program, earn an additional six credits (two courses) in Schar to receive a certificate in addition to the master’s degree.

The graduate certificate may be pursued on a part-time or full-time basis.

Admissions & Policies

Admissions
Requirements
Applicants to all graduate programs must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies (p. 68). Participants must be admitted to a certificate program. Admission requirements are the same as those for the master’s programs and may be found with Schar Admissions (http://schar.gmu.edu/admissions).

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Termination from Program
Students admitted to a Schar program will be terminated from the program upon receiving one grade of F and are no longer eligible to take courses in the school. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. For policies governing all graduate degrees, see Graduate Policies (p. 90).

Requirements

Certificate Requirements
Total credits: 15

This certificate may be pursued on a full-or part-time basis.

Required Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 500</td>
<td>Theory and Practice in Public Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3
### Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 650</td>
<td>International Conflict and Crisis Response</td>
<td></td>
</tr>
<tr>
<td>PUBP 651</td>
<td>Peace and Stabilization Operations</td>
<td></td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 743</td>
<td>National Security Management and Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 750</td>
<td>History of Military Operations Other than War</td>
<td></td>
</tr>
<tr>
<td>PUBP 751</td>
<td>International Police Operations</td>
<td></td>
</tr>
<tr>
<td>PUBP 755</td>
<td>National Security Decision-Making Policy</td>
<td></td>
</tr>
<tr>
<td>ITRN 701</td>
<td>Special Topics in International Commerce and Policy</td>
<td></td>
</tr>
<tr>
<td>ITRN 756</td>
<td>National Security and the Global Economy</td>
<td></td>
</tr>
<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

1 One of the four electives must have an international focus

### Nonprofit Management Graduate Certificate

**Banner Code:** PP-CERG-NPMG

**Academic Advising**

560 Founders Hall  
Arlington Campus  
359 Research Hall  
Fairfax Campus  

Website: schar.gmu.edu

The Schar school offers certificate programs in conjunction with its master's programs. Students already pursuing a master's degree in the school may, in most cases, after admission to a certificate program, earn an additional six credits (two courses) in Schar to receive a certificate in addition to the master's degree.

The graduate certificate in nonprofit management may only be pursued on a part-time basis.

### Admissions & Policies

#### Admissions

Applicants to all graduate programs must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Participants must be admitted to a certificate program. Admission requirements are the same as those for the master's programs and may be found on the Schar Admissions website (http://schar.gmu.edu/admissions).

#### Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94)

### Termination from Program

Students admitted to a Schar program will be terminated from the program upon receiving one grade of F and are no longer eligible to take courses in the school. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. See AP.6 Graduate Policies (p. 90) for additional policies pertaining to graduate students.

### Requirements

**Certificate Requirements**

Total credits: 15

This certificate may be pursued on a part-time basis only.

#### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUAD 505</td>
<td>Introduction to Management of Nonprofits</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 659</td>
<td>Nonprofit Law, Governance, and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 664</td>
<td>Nonprofit Financial Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

#### Electives

Select two electives (6 credits) in the nonprofit area.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Total Credits 6

1 A list of relevant electives is available under the concentration in nonprofit management in the MPA (master of public administration) (p. 998).

### Organization Development and Knowledge Management, MS

**Banner Code:** PP-MS-ODKM

**Academic Advising**

560 Founders Hall  
Arlington Campus  

Website: schar.gmu.edu

The master of science in organization development and knowledge management is an integrated program taught in executive format and designed for professionals who have several years of work experience. Providing conceptual tools and practical guidance to foster organizational change, the program focuses on three related areas: creating and leveraging knowledge through networks of people who communicate and collaborate; understanding and managing change by integrating the diverse roles of people, processes, and technology; and enhancing and facilitating collaboration by building effective relationships in technology-rich environments. A feature of this program
is the group-oriented approach to learning supported by the use of web-based collaborative computer technologies. Students develop the competencies to apply these technologies to make organizations more effective.

The cohort usually completes the program on a part-time basis. Full-time study is also possible by arrangement with the program director.

Students work in teams and complete most of the courses in sequence. The second academic year includes an action learning component, in which participants undertake projects in organizations and apply research methods. Overall, the process and methods of evaluation stress the cumulative development of competencies and the capacity to apply the insights gained. Students are expected to have easy access to a computer and the Internet. Minimum computer specifications can be obtained from the program office.

### Admissions & Policies

#### Admissions

Students are considered for admission for the fall term only.

Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

#### Policies

Students admitted to a Schar program will be terminated from Schar upon receiving one grade of F and are no longer eligible to take courses in Schar. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses.

See AP 6 Graduate Policies (p. 90) for more information.

#### Requirements

### Degree Requirements

Total credits: 35-38

#### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODKM 700</td>
<td>Foundations of Organization Development and Knowledge Management</td>
<td>3</td>
</tr>
<tr>
<td>ODKM 705</td>
<td>Group Dynamics and Team Learning</td>
<td>3</td>
</tr>
<tr>
<td>ODKM 710</td>
<td>Social and Organizational Inquiry</td>
<td>4</td>
</tr>
<tr>
<td>ODKM 715</td>
<td>Creating Learning Organizations</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 503</td>
<td>Culture, Organization, and Technology (3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>ODKM 720</td>
<td>Socio-technical Systems and Collaborative Work</td>
<td>3</td>
</tr>
<tr>
<td>ODKM 725</td>
<td>Knowledge Management and Collaborative Work</td>
<td>3</td>
</tr>
<tr>
<td>ODKM 732</td>
<td>Leadership and Social Justice</td>
<td>4</td>
</tr>
<tr>
<td>ODKM 735</td>
<td>Organizational Development Practices</td>
<td>3</td>
</tr>
<tr>
<td>ODKM 740</td>
<td>Learning Community</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 32

#### Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits of electives</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 3

1. Must be approved by the program director or advisor

#### Experiential Requirement

A 3-credit internship is required. For students with appropriate work experience, this requirement can be waived with the approval of the program director or dean.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 credits of</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>POGO 794</td>
<td>Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 3

---

### Peace Operations, MS

**Banner Code:** PP-MS-PO

#### Academic Advising

560 Founders Hall
Arlington Campus

This program is no longer accepting applications for new students.

This program is designed for students and practicing professionals engaged in the planning, regulation, management, and conduct of peace operations. Students obtain a working knowledge of the theory, policy, law, research, and practices required to effectively and efficiently participate in or conduct a peace operation. Students also learn to think critically and analytically about the problems and challenges in this field and communicate their analyses clearly and effectively through written and oral presentations.

---

This program is no longer accepting applications for new students.

#### Admissions

Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

Completed applications for fall and spring semesters are reviewed on a rolling basis, with late applications considered on a space-available basis.

#### Policies

Students admitted to a Schar program will be terminated from Schar upon receiving one grade of F and are no longer eligible to take courses in Schar. Per university regulation, students are terminated from the
university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses.

See AP.6 Graduate Policies (p. 90) for more information.

### Requirements

This program is no longer accepting applications for new students.

### Degree Requirements

Total credits: 38

#### Peace Operations Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 650</td>
<td>International Conflict and Crisis Response</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 651</td>
<td>Peace and Stabilization Operations</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 652</td>
<td>Strategies for Peace and Stabilization Operations</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 653</td>
<td>Interagency Operations in Conflict and Post-Conflict Settings</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 654</td>
<td>Analysis for Peace Operations</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 655</td>
<td>State- and Institution-Building</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 503</td>
<td>Culture, Organization, and Technology (3 credits)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 23

#### Electives

Select 15 credits from the following, in consultation with the student’s advisor.\(^1\)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 751</td>
<td>International Police Operations</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 765</td>
<td>Human Smuggling and Trafficking</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 794</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PUBP 796</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PUAD 505</td>
<td>Introduction to Management of Nonprofits</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 631</td>
<td>Disaster Response Operations and Recovery</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 636</td>
<td>The NGO: Policy and Management</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 738</td>
<td>Issues in International Security</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 739</td>
<td>Issues in International Management</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 701</td>
<td>Special Topics in International Commerce and Policy</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 702</td>
<td>Special Topics in International Commerce and Policy: Study Abroad</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 631</td>
<td>Refugees in the Contemporary World</td>
<td>3</td>
</tr>
<tr>
<td>CONF 708</td>
<td>Identity and Conflict</td>
<td>3</td>
</tr>
<tr>
<td>CONF 728</td>
<td>Human Rights Theory and Practice in Comparative Perspective</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

\(^1\) Other courses must be approved by the program director or academic advisor.

### Admissions & Policies

#### Admissions

This minor is available to all Mason undergraduate students with the exception of communication majors pursuing a concentration in political communication.

#### Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. A minimum of 6 COMM credits and a minimum of 6 GOVT credits are required. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

### Requirements

Total credits: 18

Students should be aware of the specific policies associated with this program, located on the Admissions & Policies (p. 329) tab.

#### Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 327</td>
<td>Political Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 412</td>
<td>Politics and the Mass Media</td>
<td>3</td>
</tr>
</tbody>
</table>
or GOVT 412 Politics and the Mass Media
Total Credits 6

Communication and Political Process

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELECT</td>
<td>one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>COMM 326</td>
<td>Rhetoric of Social Movements and Political Controversy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>COMM 374</td>
<td>Political Journalism</td>
<td></td>
</tr>
<tr>
<td>COMM 431</td>
<td>New Media and Democracy</td>
<td></td>
</tr>
<tr>
<td>COMM 454</td>
<td>Free Speech and Ethics (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>GOVT 311</td>
<td>Public Opinion and Electoral Behavior</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Persuasion Theory

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELECT</td>
<td>one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>COMM 230</td>
<td>Case Studies in Persuasion</td>
<td></td>
</tr>
<tr>
<td>COMM 261</td>
<td>Theories of Argumentation</td>
<td></td>
</tr>
<tr>
<td>COMM 362</td>
<td>Argument and Public Policy (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>COMM 430</td>
<td>Persuasion</td>
<td></td>
</tr>
<tr>
<td>GOVT 313</td>
<td>Political Psychology</td>
<td></td>
</tr>
<tr>
<td>GOVT 342</td>
<td>Diplomacy</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Political Process

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELECT</td>
<td>one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 308</td>
<td>The American Presidency</td>
<td></td>
</tr>
<tr>
<td>GOVT 312</td>
<td>Political Parties and Campaigns</td>
<td></td>
</tr>
<tr>
<td>GOVT 318</td>
<td>Interest Groups, Lobbying, and the Political Process</td>
<td></td>
</tr>
<tr>
<td>GOVT 353</td>
<td>Social Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>GOVT 364</td>
<td>Public Policy Making</td>
<td></td>
</tr>
<tr>
<td>GOVT 430</td>
<td>Comparative Political Leadership</td>
<td></td>
</tr>
<tr>
<td>GOVT 445</td>
<td>Human Rights</td>
<td></td>
</tr>
<tr>
<td>GOVT 447</td>
<td>Revolution and International Politics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Cultural Politics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELECT</td>
<td>one course from the following:</td>
<td>3</td>
</tr>
<tr>
<td>COMM 380</td>
<td>Media Criticism</td>
<td></td>
</tr>
<tr>
<td>COMM 433</td>
<td>Environmental Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 465</td>
<td>Topics in Communication and Gender</td>
<td></td>
</tr>
<tr>
<td>GOVT 361</td>
<td>Introduction to Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>GOVT 414</td>
<td>Politics of Race and Gender</td>
<td></td>
</tr>
<tr>
<td>GOVT 427</td>
<td>Feminist Political Thought</td>
<td></td>
</tr>
<tr>
<td>GOVT 460</td>
<td>Surveillance and Privacy in Contemporary Society</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

1 COMM 386 Special Topics in Political Communication may be substituted for any other COMM course with the permission of the minor director, depending on the specific topic.
GOVT 319 Issues in Government and Politics may be substituted for any other GOVT course with the permission of the minor director, depending on the specific topic. Courses from the Schar School of Policy and Government (p. 961) may be substituted in the cultural politics, persuasion theory, or political process categories, with the permission of the minor director.

Political Science, MA

Banner Code: PP-MA-POS

Academic Advising

560 Founders Hall
Arlington Campus
359 Research Hall
Fairfax Campus
Website: schar.gmu.edu

The master of arts in political science program prepares students for advanced work in political science, teaching, and research about government; a career in government and politics; and work in domestic and international nongovernmental organizations.

The program is made up of four core courses in political science and completion of either a concentration in international security or a broader field of specialization in American government and politics, international relations, or comparative politics. Students choosing a specialization have interdisciplinary opportunities to take up to 9 credits in related fields such as history or public policy.

The master’s degree is the first step in an engaging and stimulating career. Students develop a deeper understanding of political ideas and institutions, more sophisticated research skills, a better grasp of the intricacies of governments abroad, and a deeper knowledge of the complexities of international politics. This degree can lead to a career teaching about government; working with legislative bodies, government agencies, and international organizations; or doing research and writing about politics and government.

Admissions & Policies

Admissions

Requirements

See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found with Schar Admissions (http://schar.gmu.edu/admissions).

Completed applications for fall and spring semesters are reviewed on a rolling basis, with late applications considered on a space-available basis. Students may be admitted for nondegree study and apply a limited number of credits toward the master’s degree should they choose to apply to the degree program later, in accordance with university policy.
Policies

Termination from Program

Students admitted to an Schar program will be terminated from Schar upon receiving one grade of F and are no longer eligible to take courses in Schar. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. For policies governing all graduate degrees, see Graduate Policies (p. 90).

Requirements

Degree Requirements

Total credits: 36

Students should develop an education plan with their advisors that lists the courses they plan to take. The plan is approved by the student’s advisor. Students may include courses from other units to complement their field of specialization; they should reflect the ideas, institutions, or processes of contemporary governance.

Students who wish to begin a career in government and politics or to alter their current career path in government and politics are encouraged to take a 3-credit internship in their area of interest. Internships can be arranged through the Schar school.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 510</td>
<td>American Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 520</td>
<td>Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 530</td>
<td>Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12</td>
</tr>
</tbody>
</table>

Methods Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 500</td>
<td>The Scientific Method and Research Design</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Concentration or a Specialization

Select three to five courses in the concentration or a specialization

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Credits</td>
<td>9-15</td>
</tr>
</tbody>
</table>

Students complete the degree by completing additional coursework in the concentration or one of the specializations.

Concentration in International Security (INLS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 744</td>
<td>Foundations of Security Studies</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 745</td>
<td>International Security</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td></td>
</tr>
</tbody>
</table>

Select one to three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 640</td>
<td>Strategic Responses to Terrorism: Coordinated Decision Making</td>
<td></td>
</tr>
<tr>
<td>GOVT 641</td>
<td>Global Governance</td>
<td></td>
</tr>
<tr>
<td>GOVT 741</td>
<td>Advanced Seminar in International Politics</td>
<td></td>
</tr>
<tr>
<td>GOVT 843</td>
<td>Diplomacy</td>
<td></td>
</tr>
<tr>
<td>BIOD 621</td>
<td>Ethics and International Security</td>
<td></td>
</tr>
<tr>
<td>BIOD 622</td>
<td>Negotiating in the International Arena</td>
<td></td>
</tr>
<tr>
<td>BIOD 705</td>
<td>Intelligence: Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>BIOD 706</td>
<td>Nuclear, Biological, and Chemical Weapons Policy and Security</td>
<td></td>
</tr>
<tr>
<td>BIOD 709</td>
<td>Nonproliferation and Arms Control</td>
<td></td>
</tr>
<tr>
<td>BIOD 722</td>
<td>Examining Terrorist Groups</td>
<td></td>
</tr>
<tr>
<td>BIOD 725</td>
<td>Terrorism and Weapons of Mass Destruction</td>
<td></td>
</tr>
<tr>
<td>BIOD 760</td>
<td>National Security Technology and Policy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9-15</td>
</tr>
</tbody>
</table>

American Government and Politics Specialization

Required Field Seminars

Select two field seminars from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 603</td>
<td>Seminar in the Courts and Constitutional Law</td>
<td></td>
</tr>
<tr>
<td>GOVT 604</td>
<td>Seminar on Congress and Legislative Behavior</td>
<td></td>
</tr>
<tr>
<td>GOVT 605</td>
<td>Seminar on the Presidency</td>
<td></td>
</tr>
<tr>
<td>GOVT 706</td>
<td>Federalism and Intergovernmental Relations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>3-9</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9-15</td>
</tr>
</tbody>
</table>

Comparative Politics Specialization

Required Field Seminars

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 631</td>
<td>Seminar in Comparative Politics and Institutions</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 731</td>
<td>Advanced Seminar in Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>3-9</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>9-15</td>
</tr>
</tbody>
</table>

International Relations Specialization

Required Field Seminars

Select two field seminars from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 641</td>
<td>Global Governance</td>
<td></td>
</tr>
<tr>
<td>GOVT 741</td>
<td>Advanced Seminar in International Politics</td>
<td></td>
</tr>
<tr>
<td>GOVT 743</td>
<td>International Political Economy</td>
<td></td>
</tr>
<tr>
<td>GOVT 745</td>
<td>International Security</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td></td>
</tr>
</tbody>
</table>
Bachelor's/Accelerated Master's Degrees may be found in AP.6.7. Bachelor's/accelerated master's programs may be found on the Schar website (http://schar.gmu.edu/undergraduate-degrees/accelerated-masters-programs). Additional information on Master's Degrees. A reduced time frame, sometimes five years. More information on the master's degree. See AP.6.9 Requirements for application requirements and deadlines for the Political Science master's graduate admission to George Mason University. Specific information on admission to the Political Science PhD. See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Please see the Schar School of Policy and Government Admissions website (http://schar.gmu.edu/admissions/doctorate-admissions) for application requirements and deadlines. Students are considered for admission for the Fall term only.

Accelerated Master's

Bachelor's Degree (any)/Political Science, Accelerated MA

Overview
Highly-qualified undergraduates in any major may apply to the accelerated MA degree in political science. If accepted, students will be able to earn a bachelor’s degree in their chosen major and a MA in Political Science with a reduced number of overall credits and within a reduced time frame, sometimes five years. More information on bachelor's/accelerated master’s programs may be found in AP.6.7 Bachelor's/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP.6.9 Requirements for Master’s Degrees. (p. 94)

Admission
See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines for the Political Science master's program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

3 Credits of Project or 6 Credits of Thesis
A project or thesis is required for the MA in political science. Students who choose to do a project take 3 credits of GOVT 798 Political Science Research Project linked to an advanced specialty course and produce a final research project. Students who choose to do a thesis should be aware of the policies governing theses. They must follow the enrollment policy of the university and, once enrolled in GOVT 799 Political Science Thesis, must maintain continuous enrollment as specified in AP.6.9.3 Master’s Thesis (p. 95). A thesis director and a committee of two additional faculty members appointed by the school read and approve the thesis. Students should make arrangements for doing a project or thesis with their advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 798</td>
<td>Political Science Research Project</td>
<td>3-6</td>
</tr>
<tr>
<td>GOVT 799</td>
<td>Political Science Thesis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3-6</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select up to two electives.</td>
<td>0-6</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>0-6</td>
</tr>
</tbody>
</table>

1 The number of electives students have will depend on how many credits they took in the concentration or field of specialization and whether they choose a 3-credit project or a 6-credit thesis. Students choose the remaining credits required for the degree, if any, from other courses in Schar, including an internship, additional courses in the field of specialization, or from course work offered by other units.

Accelerated Option Requirements

While undergraduate students, accelerated master's students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master's degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are chosen from GOVT 500 The Scientific Method and Research Design, GOVT 510 American Government and Politics, GOVT 520 Political Theory, GOVT 530 Comparative Politics, GOVT 540 International Relations. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master's degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

Political Science, PhD

Banner Code: PP-PHD-POS

Academic Advising
560 Founders Hall
Arlington Campus
359 Research Hall
Fairfax Campus
Website: schar.gmu.edu

The doctoral degree in political science program is designed to prepare students for teaching and conducting research about government, careers in government and politics, and work in domestic and international nongovernmental organizations. The program allows students to combine their academic education with experience in the kinds of complex domestic and international political organizations they are studying. This model for political science education, patterned after the American Political Science Association's Congressional Fellows Program, is designed to foster scholarship and a firsthand understanding of domestic and international institutions such as think tanks, international bodies, nongovernmental organizations, journals of political opinion, and congressional and executive branch offices.

Admissions & Policies

Admissions

Application Requirements
Please see Graduate Admissions (p. 68) for general information on graduate admission to George Mason University. Please see the Schar School of Policy and Government Admissions website (http://schar.gmu.edu/admissions/doctorate-admissions) for application requirements and deadlines. Students are considered for admission for the Fall term only.
For students who have been admitted with a bachelor's degree, the Faculty Review Committee will review each student's progress after 30 credits of course work to determine whether the student will be allowed to continue their work toward the PhD. For students entering the program with a master's degree, this review will occur after 12 credits in this program. Students who are not allowed to continue to work toward the PhD will be allowed to complete the MA degree.

Policies

Academic Advising

A total of 12 credits of supporting courses may be taken in other departments to fulfill a minority of the credits for any of the requirements below, including the methodology requirement, with prior written approval of the program director. All courses should be planned with an advisor and appear on a program of study, which requires the approval of the program director.

A complete description of the program policies, procedures, and requirements is in the PhD student and faculty handbook (https://schar.gmu.edu/current-students/phd-student-services/phd-handbook-forms), which is published annually.

Reduction of Credit

For students entering the program with a master's or MPA degree, the number of credits required for the doctorate may be reduced by up to 30 credits subject to approval of the doctoral program director.

Requirements

Degree Requirements

Total credits: 72

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 510</td>
<td>American Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 520</td>
<td>Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 530</td>
<td>Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 550</td>
<td>Seminar in Theories of Public Administration</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Advanced Courses in Two Major Fields

Students choose two major fields from the four fields below and complete all course requirements for both fields of study for a total of 21 credits.

American Government and Politics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 603</td>
<td>Seminar in the Courts and Constitutional Law</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 604</td>
<td>Seminar on Congress and Legislative Behavior</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 605</td>
<td>Seminar on the Presidency</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Public Administration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 753</td>
<td>Third-Party Governance</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 755</td>
<td>Seminar in Politics and Bureaucracy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9-15

Advanced Courses in a Minor Field

Select three advanced courses in a minor field in consultation with an advisor. 1

Total Credits 9

1 The courses in the minor field should complement the two major fields and need the prior written approval of the advisor.

Advanced Courses in Methodology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 500</td>
<td>The Scientific Method and Research Design</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
</tbody>
</table>

1 The courses in the minor field should complement the two major fields and need the prior written approval of the advisor.
Elective Methodology Course
Select an elective methodology course to meet dissertation research needs. ¹
Total Credits 9

¹ Course work in language or to help achieve proficiency in quantitative or qualitative research techniques may be used to meet this requirement with certification of proficiency by a specific outside examination.

Electives
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 0-12 credits of electives</td>
<td>0-12</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>0-12</td>
</tr>
</tbody>
</table>

Advancement to Candidacy
To advance to candidacy, students must complete all course work required by their approved program of study. Students must also successfully complete and pass two comprehensive qualifying exams in major fields. In addition, students must have an approved dissertation committee and must present and successfully defend a dissertation proposal before advancing to candidacy.

Dissertation Research
Once enrolled in GOVT 998 Doctoral Dissertation Proposal, students in this degree program must maintain continuous registration in GOVT 998 Doctoral Dissertation Proposal or GOVT 999 Doctoral Dissertation Research each semester (excluding summers) until the dissertation is submitted to and accepted by the University Libraries. Once enrolled in GOVT 999 Doctoral Dissertation Research, students must follow the university’s continuous registration policy as specified in AP.6.10.6 Dissertation Research (p. 98). Students who defend in the summer must be registered for at least 1 credit of GOVT 999 Doctoral Dissertation Research.

Students may apply to this degree a minimum of 3 and a maximum of 6 credits of GOVT 998 Doctoral Dissertation Proposal and a minimum of 6 credits of GOVT 999 Doctoral Dissertation Research. They apply a minimum of 12 and a maximum of 24 dissertation credits (GOVT 998 Doctoral Dissertation Proposal and GOVT 999 Doctoral Dissertation Research combined) to the degree. Because of the continuous registration policy, students may be required to register for additional credits of these courses.

Students who do fewer than 24 credits of dissertation will complete their degree with additional electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 12-24 credits from the following:</td>
<td>12-24</td>
</tr>
<tr>
<td></td>
<td>GOVT 998 Doctoral Dissertation Proposal (minimum of 3, maximum of 6 credits)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GOVT 999 Doctoral Dissertation Research (minimum of 6 credits)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>12-24</td>
</tr>
</tbody>
</table>

Public Administration, BS
Banner Code: PP-BS-PUAD

Academic Advising

359 Research Hall
Fairfax Campus
Email: puad@gmu.edu
Website: schar.gmu.edu

Admissions & Policies

Policies
For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

Requirements

Degree Requirements
Total credits: minimum 120

Students must fulfill all Requirements for Bachelor's Degrees (p. 87) including the Mason Core (p. 142). Students pursuing a BS in Public Administration must complete additional requirements for the BS degree in the Schar School of Policy and Government (p. 961).

Students must earn a minimum grade of 2.00 in each course applied to the major, including GOVT courses as well as the supporting courses in other disciplines used to fulfill the requirements below. See an advisor before registering.

Core Courses
The math or statistics core course cannot be used to fulfill the Mason Core requirement in quantitative reasoning.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 101</td>
<td>Democratic Theory and Practice (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 132</td>
<td>Introduction to International Politics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or GOVT 133</td>
<td>Introduction to Comparative Politics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 300</td>
<td>Research Methods and Analysis (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GOVT 351</td>
<td>Administration in the Political System</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 367</td>
<td>Money, Markets and Economic Policy (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 368</td>
<td>Tools for Economic Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>One course (3 credits) in math or statistics in addition to the quantitative reasoning Mason Core requirement</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

Senior Seminar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 490</td>
<td>Synthesis Seminar (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or GOVT 491</td>
<td>Honors Seminar (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Public Administration Field Study

Students complete the degree by taking a minimum of 24 credits of advanced public administration field courses, with or without concentration.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 309</td>
<td>Economic Problems and Public Policies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 310</td>
<td>Money and Banking</td>
<td>3</td>
</tr>
<tr>
<td>ECON 320</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ECON 335</td>
<td>Environmental Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 355</td>
<td>The Political Economy of Nonprofit Institutions</td>
<td>3</td>
</tr>
<tr>
<td>ECON 385</td>
<td>International Economic Policy</td>
<td>3</td>
</tr>
<tr>
<td>ECON 390</td>
<td>International Economics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 301</td>
<td>Public Law and the Judicial Process</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 302</td>
<td>American Political Development</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 304</td>
<td>American State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 305</td>
<td>Contemporary American Federalal 3</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 307</td>
<td>Legislative Behavior</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 308</td>
<td>The American Presidency</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 309</td>
<td>Government and Politics of Metropolitan Areas</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 311</td>
<td>Public Opinion and Electoral Behavior</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 312</td>
<td>Political Parties and Campaigns</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 313</td>
<td>Political Psychology</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 318</td>
<td>Interest Groups, Lobbying, and the Political Process</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 322</td>
<td>International Relations Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 339</td>
<td>Issues in the Politics of Advanced Industrial Societies</td>
<td>1-3</td>
</tr>
<tr>
<td>GOVT 343</td>
<td>International Political Economy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 346</td>
<td>American Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 347</td>
<td>International Security</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 353</td>
<td>Social Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 354</td>
<td>Nonprofit Sector in Society</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 355</td>
<td>Public Personnel Administration</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 356</td>
<td>Public Budgeting and Finance</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 358</td>
<td>Nonprofit Financial Planning</td>
<td>4</td>
</tr>
<tr>
<td>GOVT 361</td>
<td>Introduction to Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 364</td>
<td>Public Policy Making</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 366</td>
<td>Public Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 409</td>
<td>Virginia Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 412</td>
<td>Politics and the Mass Media</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 446</td>
<td>International Law and Organization</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 452</td>
<td>Administrative Law and Procedures</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 464</td>
<td>Issues in Public Policy and Administration</td>
<td>1-3</td>
</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>INTS 431</td>
<td>Principles of Fund Raising</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 24

Students may complete a concentration of at least 12 credits in one field to fulfill a concentration. Students who do not wish to pursue a concentration may choose at least 24 credits from any of the advanced public administration courses listed below (with restrictions noted below) for a broader learning experience. Up to three credits of GOVT 496 Directed Readings and Research may be used to fulfill this requirement with prior advisor approval. Up to six credits of GOVT 496 Directed Readings and Research may be used to fulfill this requirement with prior advisor approval. GOVT 490 Synthesis Seminar (Mason Core) (p. 142) or GOVT 491 Honors Seminar (Mason Core) (p. 142) may not be used to fulfill this requirement.

Advanced Public Administration courses

Students pursuing a concentration will complete the degree by taking four courses (minimum of 12 credits) within one concentration, chosen from the lists of advanced field courses shown below, to complete a minimum of 24 credits of field courses.

Concentration Areas

- Concentration in Administration and Management (ADMM) (p. 994)
- Concentration in Public Policy (PUBP) (p. 994)
- Concentration in Nonprofit Management (NPMG) (p. 995)
- Concentration in US Government Institutions (USGI) (p. 995)
- Concentration in Economic Policy Analysis (ECPA) (p. 995)
- Concentration in International Political Economy (IPE) (p. 995)
- Individualized Concentration (IND) (p. 995)

Concentration in Administration and Management (ADMM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 305</td>
<td>Contemporary American Federalal 3</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 313</td>
<td>Political Psychology</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 355</td>
<td>Public Personnel Administration</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 356</td>
<td>Public Budgeting and Finance</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 358</td>
<td>Nonprofit Financial Planning</td>
<td>4</td>
</tr>
<tr>
<td>GOVT 452</td>
<td>Administrative Law and Procedures</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 0-12

Students may partially satisfy the field focus requirement by completing at least 12 credits in any one (1) approved concentration as described below.

Concentration in Public Policy (PUBP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 312</td>
<td>Political Parties and Campaigns</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 318</td>
<td>Interest Groups, Lobbying, and the Political Process</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 346</td>
<td>American Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 347</td>
<td>International Security</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 361</td>
<td>Introduction to Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 364</td>
<td>Public Policy Making</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 366</td>
<td>Public Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 412</td>
<td>Politics and the Mass Media</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 464</td>
<td>Issues in Public Policy and Administration</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Total Credits 0-12
ECON 309  Economic Problems and Public Policies (Mason Core) (p. 142)  3  
ECON 335  Environmental Economics  3  

Concentration in Nonprofit Management (NPMG)  
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 313</td>
<td>Political Psychology</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 353</td>
<td>Social Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 354</td>
<td>Nonprofit Sector in Society</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 358</td>
<td>Nonprofit Financial Planning</td>
<td>4</td>
</tr>
<tr>
<td>ECON 355</td>
<td>The Political Economy of Nonprofit Institutions</td>
<td>3</td>
</tr>
<tr>
<td>INTS 331</td>
<td>The Nonprofit Sector (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>INTS 431</td>
<td>Principles of Fund Raising</td>
<td>4</td>
</tr>
</tbody>
</table>

Concentration in US Government Institutions (USGI)  
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 301</td>
<td>Public Law and the Judicial Process</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 302</td>
<td>American Political Development</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 304</td>
<td>American State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 305</td>
<td>Contemporary American Federalism</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 307</td>
<td>Legislative Behavior</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 308</td>
<td>The American Presidency</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 309</td>
<td>Government and Politics of Metropolitan Areas</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 311</td>
<td>Public Opinion and Electoral Behavior</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 409</td>
<td>Virginia Government and Politics</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in Economic Policy Analysis (ECPA)  
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 309</td>
<td>Economic Problems and Public Policies (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 310</td>
<td>Money and Banking</td>
<td>3</td>
</tr>
<tr>
<td>ECON 320</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ECON 335</td>
<td>Environmental Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 355</td>
<td>The Political Economy of Nonprofit Institutions</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in International Political Economy (IPE)  
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 322</td>
<td>International Relations Theory</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 339</td>
<td>Issues in the Politics of Advanced Industrial Societies</td>
<td>1-3</td>
</tr>
<tr>
<td>GOVT 343</td>
<td>International Political Economy</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 366</td>
<td>Public Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 433</td>
<td>Political Economy of East Asia</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 446</td>
<td>International Law and Organization</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 469</td>
<td>Philosophy, Politics, and Economics</td>
<td>3</td>
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<tr>
<td>ECON 385</td>
<td>International Economic Policy</td>
<td>3</td>
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</tbody>
</table>

Individualized Concentration (IND)  
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Create your own concentration consisting of four upper level courses with Director approval</td>
<td>1</td>
</tr>
</tbody>
</table>

1  A minimum of two courses in this concentration must be advanced public administration field courses.

Writing-Intensive Requirement  
The university requires all students to complete at least one course designated “writing intensive” in their majors. Students majoring in public administration may fulfill this requirement by successfully completing GOVT 490 Synthesis Seminar (Mason Core) (p. 142) or GOVT 491 Honors Seminar (Mason Core) (p. 142) in their major programs.

Mason Core  
Some Mason Core (p. 142) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (p. 142) requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication (ENGH 101) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Oral Communication (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology and Computing (p. 143)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science (p. 148)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Integration Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communications (ENGH 302) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing-Intensive (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone (p. 153)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>40</td>
</tr>
</tbody>
</table>

1  Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.
2  Minimum 3 credits required.

Honors in the Major  
Highly qualified students majoring in Government and International Politics and Public Administration may pursue advanced work leading to graduation with honors in the major. Those students selected for participation in this program take a two-course sequence: GOVT 491 Honors Seminar (Mason Core) (p. 142) and GOVT 496 Directed Readings and Research. To graduate with honors in the major, students must complete these courses with a minimum GPA of 3.50.

Honors
Accelerated Master's

Bachelor's Degree (any)/Biodefense, Accelerated MS

Overview
Highly qualified undergraduates in any major may apply to the accelerated Biodefense, MS. If accepted, students will be able to earn a bachelor's degree in their chosen major and a Biodefense, MS with a reduced number of overall credits and within a reduced time frame, sometimes within five years.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission
Please see the Graduate Admissions (p. 68) for general information on graduate admission to George Mason University. Information specific to the accelerated MS program may be found on the Schar website (http://schar.gmu.edu/admissions).

To be considered for this accelerated master's program, applicants must have completed a minimum of 75 credits and have a minimum GPA of 3.50 in all coursework applied to the degree.

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses (six credits) that may be counted toward both the bachelor's and master's degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master's degree. The courses are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 540</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 504</td>
<td>Grand Strategy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 506</td>
<td>Ethics and the Use of Force</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor's/Accelerated Master's Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

Bachelor's Degree (any)/International Commerce and Policy, Accelerated MA

Overview
Highly-qualified undergraduates in any major may apply to the accelerated MA degree program in International Commerce and Policy. If accepted students will be able to earn a bachelor’s degree in their major and an MA in International Security with a reduced number of overall credits and within a reduced time frame, sometimes within five years. More information on bachelor's/accelerated master's programs may be found in AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP6.9 Requirements for Master’s Degrees. (p. 94)

Admission
Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

To be considered for this accelerated master's program, applicants must have completed a minimum of 75 credits, including at least 12 credits of Government, Economics and/or Global Affairs courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master's degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master's degree. The courses are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 501</td>
<td>International Methods and Research Design</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 504</td>
<td>Grand Strategy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 506</td>
<td>Ethics and the Use of Force</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor's/Accelerated Master's Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).
To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including at least 12 credits of Government, Economics and/or Global Affairs courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are ITRN 500 Global Political Economy, ITRN 504 Microeconomics and Trade Policy, ITRN 503 Macroeconomic Policy in the Global Economy and ITRN 605 Technology, Culture and Commerce. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

**Bachelor’s Degree (any)/Political Science, Accelerated MA**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated MA degree in political science. If accepted, students will be able to earn a bachelor’s degree in their chosen major and a MA in Political Science with a reduced number of overall credits and within a reduced time frame, sometimes five years. More information on bachelor’s/accelerated master’s programs may be found in AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP.6.9 Requirements for Master’s Degrees. (p. 94)

**Admission**

See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines for the Political Science master’s program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including 12 GOVT credits, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are chosen from GOVT 500 The Scientific Method and Research Design, GOVT 510 American Government and Politics, GOVT 520 Political Theory, GOVT 530 Comparative Politics, GOVT 540 International Relations. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

**Bachelor’s Degree (any)/Public Administration, Accelerated MPA**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated master’s degree in public administration. If accepted, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in public administration with a reduced number of overall credits and within a reduced time frame, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Information specific to the accelerated MPA program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including 12 GOVT credits, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are PUAD 502 Administration in Public and Nonprofit Organizations, POGO 511 Introductory Data Analysis for Policy and Government, PUAD 520 Organization Theory and Management Behavior and PUAD 540 Public Policy Process. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

**Bachelor’s Degree (any)/Public Policy, Accelerated MPP**

**Overview**

Highly-qualified undergraduates in any major may apply to the accelerated Master of Public Policy (MPP) program. If accepted students will be able to earn a bachelor’s degree in their chosen major and the Master of Public Policy with a reduced number of overall credits and within a reduced time frame, sometimes within five years. More
information on bachelor’s/accelerated master’s programs may be found in AP:6.7 Bachelor’s/Accelerated Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. See AP:6.9 Requirements for Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-9).

**Admission**

Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Information specific to the accelerated Master of Public Policy program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including 12 credits of Government and/or Economics courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

**Accelerated Option Requirements**

While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) from the following list to be held as reserve graduate credit and count only toward the master’s degree. The student must have a minimum GPA of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 500</td>
<td>Theory and Practice in Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 503</td>
<td>Culture, Organization, and Technology</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 503</td>
<td>Macroeconomic Policy in the Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
</tbody>
</table>

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

**Public Administration, MPA**

**Banner Code:** PP-MPA-PUAD

**Academic Advising**

560 Founders Hall
Arlington Campus

359 Research Hall
Fairfax Campus

Website: schar.gmu.edu

The Master of Public Administration (MPA) is designed for people who hold or aspire to hold leadership positions in organizations that participate in the development and implementation of public policy. The mission of the MPA program is to give graduate students the opportunity to build their knowledge of politics, public policy and management and to enhance their analytic, problem solving, and communication skills.

MPA students at Mason have the research and cultural resources of the Washington, D.C. area at their disposal. Government agencies representing all levels in the U.S. federal system are located close to the campus, as are the National Archives, the Library of Congress, and the Smithsonian Institution. Another benefit is the wide range of internship opportunities available in governmental and nonprofit organizations. The MPA Program regularly has internship invitations from national, state, and local government organizations, as well as from nonprofit organizations whose principal work is at the local, state, national, or international levels. Many of these internships are paid positions.

MPA courses are held at the Fairfax and the Arlington campuses during the week and on the weekend in an accelerated format.

**Admissions & Policies**

**Admissions Requirements**

See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found with Schar Admissions (http://schar.gmu.edu/admissions).

Completed applications for fall and spring semesters are reviewed on a rolling basis, with late applications considered on a space-available basis. Students may be admitted for nondegree study and apply a limited number of credits toward the master’s degree should they choose to apply to the degree program later, in accordance with university and school policy.

**Policies**

**Termination from Program**

Students admitted to an Schar program will be terminated from Schar upon receiving one grade of F and are no longer eligible to take courses in Schar. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. For policies governing all graduate degrees, see Graduate Policies (p. 90).

**Program Requirements**

The MPA curriculum is arranged in a sequential manner. PUAD 500-level courses are foundation courses, 600-level courses are intermediate courses, and the 700-level courses are advanced courses. Students must take PUAD 500-level, or foundation courses, during the first two semesters, followed by 600-level classes. The PUAD 700-level courses should be taken during the last semester or two of enrollment in the MPA program.

For example, a full-time student should enroll in PUAD 502 Administration in Public and Nonprofit Organizations and two other 500-level courses, such as POGO 511 Introductory Data Analysis for Policy and Government and PUAD 520 Organization Theory and Management Behavior, during the first semester. In the second semester the student should enroll in PUAD 540 Public Policy Process and two intermediate
courses such as PUAD 662 National Budgeting and a 600-level elective course.

Part-time students taking two courses a semester should take PUAD 502 Administration in Public and Nonprofit Organizations and either POGO 511 Introductory Data Analysis for Policy and Government or PUAD 520 Organization Theory and Management Behavior during the first semester, followed by either POGO 511 Introductory Data Analysis for Policy and Government or PUAD 520 Organization Theory and Management Behavior and PUAD 540 Public Policy Process in the second semester.

Requests for taking a course out of sequence must be made in writing to the student's advisor and must be approved by the advisor before enrollment.

Requirements

Degree Requirements

Total credits: 36-39

The required courses emphasize the development of knowledge about public policy and management, as well as analytical problem-solving and communication skills, and third-party governance. Through these courses, students develop a shared knowledge base and skill set. The elective courses can be used by students to focus their knowledge and skill development within one concentration. Alternatively, the electives can be used to extend the breadth of study with courses drawn from a variety of concentrations or from other departments and schools across the university.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUAD 502</td>
<td>Administration in Public and Nonprofit Organizations</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 520</td>
<td>Organization Theory and Management Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 540</td>
<td>Public Policy Process</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 700</td>
<td>Ethics and Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 703</td>
<td>Third-Party Governance</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

Additional Methods Course

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUAD 613</td>
<td>Economic Analysis in Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 645</td>
<td>Policy Analysis</td>
<td></td>
</tr>
<tr>
<td>POGO 611</td>
<td>Advanced Data Analysis for Policy and Government</td>
<td></td>
</tr>
<tr>
<td>POGO 646</td>
<td>Policy and Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Accounting, Budgeting, and Financial Management

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUAD 660</td>
<td>Public and Nonprofit Accounting and Finance</td>
<td></td>
</tr>
<tr>
<td>PUAD 662</td>
<td>National Budgeting</td>
<td></td>
</tr>
<tr>
<td>PUAD 663</td>
<td>State and Local Budgeting</td>
<td></td>
</tr>
<tr>
<td>PUAD 664</td>
<td>Nonprofit Financial Management</td>
<td></td>
</tr>
<tr>
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Electives

Select four electives

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<tr>
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1. Students may take their electives within one of the concentrations which follow. As an alternative, with the approval of their advisor, students may select their electives from several concentrations or fields. Students not pursuing a concentration may select electives from Schar course offerings.

Concentrations

Students may declare only one concentration. PUAD 794 Internship and POGO 796 Directed Readings and Research may be applied to a concentration where content is appropriate and with prior written approval of the student's advisor. Other courses may also be applied to a concentration with prior written approval of the advisor.

Concentrations

• Concentration in Administration of Justice (ADJ) (p. 999)
• Concentration in Emergency Management and Homeland Security (EMHS) (p. 1000)
• Concentration in Environmental Science and Public Policy (EVPP) (p. 1000)
• Concentration in Human Resources Management (HRM) (p. 1000)
• Concentration in International Management (IM) (p. 1001)
• Concentration in Nonprofit Management (NPMG) (p. 1001)
• Concentration in Policy Studies (PS) (p. 1001)
• Concentration in Public Management (PMG) (p. 1001)
• Concentration in Public and Nonprofit Finance (PNF) (p. 1002)
• Concentration in State and Local Government (SLG) (p. 1002)
• Concentration in Third-Party Governance (TPG) (p. 1002)

Concentration in Administration of Justice (ADJ)

Select four courses from the following:

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<tr>
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<tbody>
<tr>
<td>PUAD 730</td>
<td>Professional Development Workshop</td>
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<tr>
<td>PUAD 781</td>
<td>Information Management: Technology and Policy</td>
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<tr>
<td>CONF 501</td>
<td>Introduction to Conflict Analysis and Resolution</td>
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<tr>
<td>CRIM 509</td>
<td>Justice Organizations and Processes</td>
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<tr>
<td>CRIM 510</td>
<td>Policing in a Democratic Society</td>
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<td>Justice Organizations</td>
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<td>CRIM 741</td>
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<tr>
<td>CRIM 742</td>
<td>Leadership in Justice and Security Organizations</td>
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<tr>
<td>CRIM 743</td>
<td>Changing Justice and Security Organizations</td>
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<td>CRIM 781</td>
<td>Justice Program Evaluation</td>
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<td>SOCI 607</td>
<td>Criminology</td>
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<td>SOCI 608</td>
<td>Juvenile Delinquency</td>
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<td>PUBP 710</td>
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<tr>
<td>POGO 796</td>
<td>Directed Readings and Research</td>
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**Concentration in Emergency Management and Homeland Security (EMHS)**

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<tr>
<td>PUAD 631</td>
<td>Disaster Response Operations and Recovery</td>
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<tr>
<td>PUAD 632</td>
<td>Terrorism: Theory and Practice</td>
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<tr>
<td>PUAD 633</td>
<td>Hazard Mitigation Policy</td>
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<tr>
<td>PUAD 634</td>
<td>Management of International Security</td>
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<tr>
<td>PUAD 635</td>
<td>Emergency Preparedness: Interagency Communication and Coordination</td>
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<td>PUAD 637</td>
<td>Managing Homeland Security</td>
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<tr>
<td>PUAD 727</td>
<td>Seminar in Risk Assessment and Decision Making</td>
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<td>PUAD 731</td>
<td>Homeland/Transportation Security Administration</td>
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<tr>
<td>PUAD 738</td>
<td>Issues in International Security</td>
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<tr>
<td>BIOD 723</td>
<td>Legal Dimensions of Homeland Security</td>
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<td>The Role of the Military in Homeland Security</td>
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<td>PUBP 742</td>
<td>Transportation Safety and Security</td>
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<td>Geographic Information Systems and Spatial Analysis for Public Policy</td>
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<td>PUBP 758</td>
<td>Global Threats and Medical Policies</td>
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<td>POGO 750</td>
<td>Topics in Policy and Government</td>
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<td>Selected Topics</td>
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1 If not already taken to meet core requirements.

**Concentration in Human Resources Management (HRM)**

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<tr>
<td>PUAD 623</td>
<td>Managing Government Contracting</td>
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<td>PUAD 652</td>
<td>Leading in the Nonprofit Sector</td>
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<tr>
<td>PUAD 671</td>
<td>Public Employee Labor Relations</td>
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<td>PUAD 672</td>
<td>Human Resources Reforms for Public Administration</td>
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<tr>
<td>PUAD 729</td>
<td>Issues in Public Management</td>
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<tr>
<td>PUAD 730</td>
<td>Professional Development Workshop</td>
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</tr>
<tr>
<td>PSYC 631</td>
<td>Industrial and Personnel Testing and Evaluation</td>
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<tr>
<td>PSYC 636</td>
<td>Survey of Industrial Psychology</td>
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<td>PSYC 638</td>
<td>Training: Psychological Contributions to Theory, Design, and Evaluation</td>
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<td>PSYC 639</td>
<td>Survey of Organizational Processes</td>
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<td>PSYC 667</td>
<td>Behavior in Small Groups and Teams</td>
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<td>PSYC 739</td>
<td>Seminar in Industrial/Organizational Psychology</td>
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<td>ODKM 705</td>
<td>Group Dynamics and Team Learning</td>
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<td>ODKM 715</td>
<td>Creating Learning Organizations</td>
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<td>ODKM 731</td>
<td>Consulting Skills for Organizational Change</td>
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<td>ODKM 735</td>
<td>Organizational Development Practices</td>
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<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
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**Concentration in Environmental Science and Public Policy (EVPP)**

CONF 695 Selected Topics and COMM 590 Seminar in Communication when topic is the environment, may be used to fulfill this requirement with the prior written approval of the student's advisor.
### Concentration in International Management (IM)

<table>
<thead>
<tr>
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<th>Title</th>
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<tr>
<td>PUAD 504</td>
<td>Managing in the International Arena: Theory and Practice</td>
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Select three courses from the following:

- 9
- CONF courses (p. 1488)
- ITRN courses (p. 1877)

<table>
<thead>
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<th>Title</th>
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<tbody>
<tr>
<td>PUAD 634</td>
<td>Management of International Security</td>
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<tr>
<td>PUAD 636</td>
<td>The NGO: Policy and Management</td>
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<tr>
<td>PUAD 730</td>
<td>Professional Development Workshop</td>
<td></td>
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<tr>
<td>PUAD 738</td>
<td>Issues in International Security</td>
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<tr>
<td>PUAD 739</td>
<td>Issues in International Management</td>
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<tr>
<td>GOVT 540</td>
<td>International Relations</td>
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<tr>
<td>GOVT 631</td>
<td>Seminar in Comparative Politics and Institutions</td>
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<td>PUBP 710</td>
<td>Topics in Public Policy</td>
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<tr>
<td>ITRN 701</td>
<td>Special Topics in International Commerce and Policy</td>
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<td>POGO 796</td>
<td>Directed Readings and Research</td>
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<tr>
<td>ITRN 702</td>
<td>Special Topics in International Commerce and Policy: Study Abroad</td>
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</table>

Total Credits: **12**

1 With written prior approval of the director.

### Concentration in Nonprofit Management (NPMG)

Students in the nonprofit concentration may take PUAD 505 Introduction to Management of Nonprofits as one of their first four courses and may take PUAD 505 Introduction to Management of Nonprofits simultaneously with PUAD 502 Administration in Public and Nonprofit Organizations. Likewise, students in the international concentration may take PUAD 504 Managing in the International Arena: Theory and Practice as one of their first four courses.

<table>
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<th>Code</th>
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<tr>
<td>PUAD 505</td>
<td>Introduction to Management of Nonprofits</td>
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<tr>
<td>PUAD 659</td>
<td>Nonprofit Law, Governance, and Ethics</td>
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Select two courses from the following:

- 6

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<th>Title</th>
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<tr>
<td>PUAD 636</td>
<td>The NGO: Policy and Management</td>
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<tr>
<td>PUAD 649</td>
<td>Advocacy and Lobbying</td>
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<tr>
<td>PUAD 652</td>
<td>Leading in the Nonprofit Sector</td>
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<tr>
<td>PUAD 654</td>
<td>The Community, Marketing, and Public Relations</td>
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<tr>
<td>PUAD 655</td>
<td>Nonprofit Fund Raising and Resource Development</td>
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<tr>
<td>PUAD 657</td>
<td>Association Management</td>
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<tr>
<td>PUAD 658</td>
<td>Social Entrepreneurship and Social Enterprise</td>
<td></td>
</tr>
<tr>
<td>PUAD 660</td>
<td>Public and Nonprofit Accounting and Finance</td>
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<tr>
<td>PUAD 664</td>
<td>Nonprofit Financial Management</td>
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<tr>
<td>PUAD 680</td>
<td>Managing Information Resources</td>
<td></td>
</tr>
<tr>
<td>PUAD 720</td>
<td>Performance Measurement</td>
<td></td>
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<tr>
<td>PUAD 730</td>
<td>Professional Development Workshop</td>
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<td>Topics in Public Policy</td>
<td></td>
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<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
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<td>Internship</td>
<td></td>
</tr>
<tr>
<td>POGO 796</td>
<td>Directed Readings and Research</td>
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<tr>
<td>ITRN 702</td>
<td>Special Topics in International Commerce and Policy: Study Abroad</td>
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Total Credits: **12**

### Concentration in Policy Studies (PS)

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<tr>
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<td>PUAD 622</td>
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<td>PUAD 645</td>
<td>Policy Analysis</td>
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<td>PUAD 649</td>
<td>Advocacy and Lobbying</td>
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<td>PUAD 658</td>
<td>Social Entrepreneurship and Social Enterprise</td>
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<td>PUAD 661</td>
<td>Public Budgeting Systems</td>
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<td>PUAD 662</td>
<td>National Budgeting</td>
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<td>PUAD 663</td>
<td>State and Local Budgeting</td>
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<td>Managing Information Resources</td>
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<td>PUAD 727</td>
<td>Seminar in Risk Assessment and Decision Making</td>
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<td>Professional Development Workshop</td>
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<td>PUAD 749</td>
<td>Issues in Public Policy</td>
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<tr>
<td>PUAD 750</td>
<td>Federalism and Intergovernmental Relations</td>
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Total Credits: **12**

### Concentration in Public Management (PMG)

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Total Credits: **12**
### Concentration in Public and Nonprofit Finance (PNF)

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<td>Public Budgeting Systems</td>
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<td>PUAD 662</td>
<td>National Budgeting</td>
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<td>State and Local Budgeting</td>
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<td>Human Resources Management in the Public Sector</td>
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<td>Human Resources Reform for Public Administration</td>
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<td>PUAD 679</td>
<td>Leadership Skills for the 21st Century</td>
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<td>Managing Information Resources</td>
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<td>PUAD 730</td>
<td>Professional Development Workshop</td>
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<tr>
<td>PUAD 731</td>
<td>Homeland/Transportation Security Administration</td>
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<td>Federalism and Intergovernmental Relations</td>
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<td>PUAD 781</td>
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<td>Policy and Program Evaluation</td>
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**Total Credits:** 12

### Concentration in State and Local Government (SLG)

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<td>PUAD 630</td>
<td>Emergency Planning and Preparedness</td>
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<td>PUAD 651</td>
<td>Virginia Politics, Policy, and Administration</td>
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<tr>
<td>PUAD 661</td>
<td>Public Budgeting Systems</td>
<td></td>
</tr>
<tr>
<td>PUAD 662</td>
<td>National Budgeting</td>
<td></td>
</tr>
<tr>
<td>PUAD 663</td>
<td>State and Local Budgeting</td>
<td></td>
</tr>
<tr>
<td>PUAD 680</td>
<td>Managing Information Resources</td>
<td></td>
</tr>
<tr>
<td>PUAD 729</td>
<td>Issues in Public Management</td>
<td></td>
</tr>
<tr>
<td>PUAD 730</td>
<td>Professional Development Workshop</td>
<td></td>
</tr>
<tr>
<td>PUAD 750</td>
<td>Federalism and Intergovernmental Relations</td>
<td></td>
</tr>
<tr>
<td>PUAD 759</td>
<td>Issues in Local Government Administration</td>
<td></td>
</tr>
<tr>
<td>PUAD 781</td>
<td>Information Management: Technology and Policy</td>
<td></td>
</tr>
<tr>
<td>PUAD 781</td>
<td>Information Management: Technology and Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
<td></td>
</tr>
<tr>
<td>POGO 794</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>POGO 796</td>
<td>Directed Readings and Research</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 12

### Concentration in Third-Party Governance (TPG)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUAD 613</td>
<td>Economic Analysis in Public Administration</td>
<td>12</td>
</tr>
<tr>
<td>PUAD 622</td>
<td>Program Planning and Implementation</td>
<td></td>
</tr>
<tr>
<td>PUAD 623</td>
<td>Managing Government Contracting</td>
<td></td>
</tr>
<tr>
<td>PUAD 635</td>
<td>Emergency Preparedness: Interagency Communication and Coordination</td>
<td></td>
</tr>
<tr>
<td>PUAD 636</td>
<td>The NGO: Policy and Management</td>
<td></td>
</tr>
<tr>
<td>PUAD 658</td>
<td>Social Entrepreneurship and Social Enterprise</td>
<td></td>
</tr>
<tr>
<td>PUAD 659</td>
<td>Nonprofit Law, Governance, and Ethics</td>
<td></td>
</tr>
<tr>
<td>PUAD 750</td>
<td>Federalism and Intergovernmental Relations</td>
<td></td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
<td></td>
</tr>
<tr>
<td>POGO 794</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>POGO 796</td>
<td>Directed Readings and Research</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 12
Accelerated Master’s

Bachelor’s Degree (any)/Public Administration, Accelerated MPA

Overview

Highly-qualified undergraduates in any major may apply to the accelerated master’s degree in public administration. If accepted, students will be able to earn a bachelor’s degree in their chosen major and a master’s degree in public administration with a reduced number of overall credits and within a reduced time frame, sometimes within five years. See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Information specific to the accelerated MPA program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

To be considered for this accelerated master’s program, applicants must have completed a minimum of 75 credits, including 12 GOVT credits, and have a minimum GPA of 3.50 in all coursework applied to the degree.

Accelerated Option Requirements

While undergraduate students, accelerated master’s students complete two graduate courses (six credits) that may be counted toward both the bachelor’s and master’s degrees. In addition, students may take another two courses (six credits) to be held as reserve graduate credit and count only toward the master’s degree. The courses are PUAD 502 Administration in Public and Nonprofit Organizations, POGO 511 Introductory Data Analysis for Policy and Government, PUAD 520 Organization Theory and Management Behavior and PUAD 540 Public Policy Process. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor’s/Accelerated Master’s Transition Form to apply credits to the master’s degree. Students must begin their master’s program the semester immediately following conferral of the undergraduate degree (excluding summer).

Public Management Graduate Certificate

Banner Code: PP-CERG-PMG

Admissions & Policies

Admissions

Applicants to all graduate programs must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies (p. 68). Participants must be admitted to a certificate program. Admission requirements are the same as those for the master’s programs and may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

Requirements

Certificate Requirements

Total credits: 15
This certificate may be pursued on a part-time basis only.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUAD 502</td>
<td>Administration in Public and Nonprofit Organizations</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 520</td>
<td>Organization Theory and Management Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PUAD 540</td>
<td>Public Policy Process</td>
<td>3</td>
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<tr>
<td><strong>Total Credits</strong></td>
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<td><strong>9</strong></td>
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</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two electives in the public management area. ¹</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

¹ See the Public Administration, MPA (p. 999), Public Management Concentration (PMA) for a list of relevant electives.

Public Policy and Management Minor

Banner Code: PPMG

Academic Advising

359 Research Hall
Fairfax Campus

This minor equips students with the background and tools to understand the complexities of policy formation and implementation as leaders and managers in the political arena.

Faculty

Conant (minor advisor)

Admissions & Policies

Requirements

Minor Requirements

Total credits: 18

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 103</td>
<td>Introduction to American Government (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 351</td>
<td>Administration in the Political System</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

¹ Only when relevant, with the prior written approval of the minor advisor.

Elective Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 35X</td>
<td>public administration</td>
<td></td>
</tr>
<tr>
<td>GOVT 36X</td>
<td>public policy</td>
<td></td>
</tr>
<tr>
<td>GOVT 45X</td>
<td>administration, law and procedures</td>
<td></td>
</tr>
<tr>
<td>GOVT 46X</td>
<td>public policy issues</td>
<td></td>
</tr>
<tr>
<td>GOVT 480</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Public Policy, MPP

Banner Code: PP-MPP-PUBP

Academic Advising

560 Founders Hall
Arlington Campus
359 Research Hall
Fairfax Campus

Website: schar.gmu.edu

The master of public policy leads to a degree for aspiring or experienced professionals who seek career advancement through cutting-edge education and training in policy analysis and development in increasingly technical and global environments. The program prepares students to be reflective practitioners who develop, implement, manage, analyze, evaluate, and effect innovative change in the public and private sectors through a course of study that emphasizes the fundamentals of policy development; the role of technology, analytic assessment, and modeling for policy evaluation; and the implications of international and global perspectives on policy formation. Courses are offered primarily in late afternoon and evening to fit the schedules of busy professionals.

Admissions & Policies

Admissions

Requirements

See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found with Schar Admissions (http://schar.gmu.edu/admissions). Completed applications for fall and spring semesters are reviewed on a rolling basis, with late applications considered on a space-available basis. Students may be admitted for nondegree study and apply a limited number of credits toward the master's degree should they choose to apply to the degree program later, in accordance with university policy.

Policies

Termination from Program

Students admitted to a Schar program will be terminated from Schar upon receiving one grade of F and are no longer eligible to take courses in Schar. Per university regulation, students are terminated from the
Program Requirements

Students must complete 36 to 39 credits of coursework through a combination of core courses, electives, and a professional experience requirement. Appropriate professional experience can be demonstrated through previous employment or a supervised internship. Students will also be exposed to the global nature of public policy activity through the core requirement of international comparative policy assessment.

Requirements

Degree Requirements

Total credits: 36-39

Required Public Policy Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 500</td>
<td>Theory and Practice in Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 503</td>
<td>Culture, Organization, and Technology (3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 503</td>
<td>Macroeconomic Policy in the Global Economy (3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 720</td>
<td>Managerial Economics and Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 741</td>
<td>U.S. Financial Policy Process and Procedures</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following, or approved substitution: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POGO 611</td>
<td>Advanced Data Analysis for Policy and Government</td>
<td></td>
</tr>
<tr>
<td>POGO 646</td>
<td>Policy and Program Evaluation</td>
<td></td>
</tr>
<tr>
<td>PUBP 754</td>
<td>Geographic Information Systems and Spatial Analysis for Public Policy</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 21

Electives

Electives are chosen from one of the following policy emphasis areas. One of the courses in the emphasis sequence should have an international focus.

- Education Policy
- Global Medical and Health Policy
- International Governance and Institutions
- National Security and Public Policy
- Public Finance and Budgeting
- Regional Economic Development
- Science and Technology Policy
- Social Policy
- Terrorism, Transnational Crime and Corruption
- Transportation Policy
- Urban Policy and Development
- US Government Institutions and Policy Management

Code | Title                                               | Credits |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 504</td>
<td>Grand Strategy</td>
<td>15</td>
</tr>
<tr>
<td>PUBP 506</td>
<td>Ethics and the Use of Force</td>
<td></td>
</tr>
<tr>
<td>PUBP 650</td>
<td>International Conflict and Crisis Response</td>
<td></td>
</tr>
<tr>
<td>PUBP 651</td>
<td>Peace and Stabilization Operations</td>
<td></td>
</tr>
<tr>
<td>PUBP 710</td>
<td>Topics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 721</td>
<td>Transportation Economics</td>
<td></td>
</tr>
<tr>
<td>PUBP 723</td>
<td>Metropolitan Transportation Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 726</td>
<td>Telecommunications Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 730</td>
<td>US Institutions and the Policy Process</td>
<td></td>
</tr>
<tr>
<td>PUBP 733</td>
<td>Urban Politics and Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 737</td>
<td>Cases and Concepts in E-Government</td>
<td></td>
</tr>
<tr>
<td>PUBP 739</td>
<td>Media and Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 742</td>
<td>Transportation Safety and Security</td>
<td></td>
</tr>
<tr>
<td>PUBP 743</td>
<td>National Security Management and Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 747</td>
<td>Air Transportation Policy, Operations and Logistics</td>
<td></td>
</tr>
<tr>
<td>PUBP 750</td>
<td>History of Military Operations Other than War</td>
<td></td>
</tr>
<tr>
<td>PUBP 751</td>
<td>International Police Operations</td>
<td></td>
</tr>
<tr>
<td>PUBP 753</td>
<td>Ethics in Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 754</td>
<td>Geographic Information Systems and Spatial Analysis for Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 755</td>
<td>National Security Decision-Making Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 757</td>
<td>Public Policy in Global Health and Medical Practice</td>
<td></td>
</tr>
<tr>
<td>PUBP 758</td>
<td>Global Threats and Medical Policies</td>
<td></td>
</tr>
<tr>
<td>PUBP 759</td>
<td>National Security Law and Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 760</td>
<td>Science and Technology Policy in the 21st Century</td>
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<tr>
<td>PUBP 762</td>
<td>Social Institutions and Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 763</td>
<td>Illicit Trade</td>
<td></td>
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<tr>
<td>PUBP 764</td>
<td>Transnational Crime and Corruption</td>
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</tr>
<tr>
<td>PUBP 765</td>
<td>Human Smuggling and Trafficking</td>
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</tr>
<tr>
<td>PUBP 766</td>
<td>Modern Counterinsurgency: Theory and Practice</td>
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<tr>
<td>PUBP 768</td>
<td>Education and Public Policy (Topic Varies)</td>
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<tr>
<td>PUBP 769</td>
<td>Political Violence and Terrorism</td>
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</tr>
<tr>
<td>PUBP 777</td>
<td>Critical Infrastructure Protection: Policy and Practice</td>
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<tr>
<td>PUBP 783</td>
<td>Global Governance</td>
<td></td>
</tr>
<tr>
<td>PUAD 729</td>
<td>Issues in Public Management</td>
<td></td>
</tr>
<tr>
<td>POGO 796</td>
<td>Directed Readings and Research</td>
<td></td>
</tr>
<tr>
<td>POGO 550</td>
<td>Topics in Policy and Government</td>
<td></td>
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<tr>
<td>POGO 750</td>
<td>Topics in Policy and Government</td>
<td></td>
</tr>
<tr>
<td>PUAD 738</td>
<td>Issues in International Security</td>
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<tr>
<td>PUAD 739</td>
<td>Issues in International Management</td>
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<tr>
<td>PUAD 749</td>
<td>Issues in Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUAD 759</td>
<td>Issues in Local Government Administration</td>
<td></td>
</tr>
</tbody>
</table>
PUAD 769  Issues in Public Financial Management
ITRN 602  Global Financial Crises and Institutions
ITRN 603  Global Trade Relations
ITRN 701  Special Topics in International Commerce and Policy
ITRN 702  Special Topics in International Commerce and Policy: Study Abroad
ITRN 710  International Business Transactions: Finance and Investment
ITRN 712  World Trade Organization and Global Trade
ITRN 718
ITRN 740  Trade and Regulatory Compliance
ITRN 752  Global Business and Policy
ITRN 761  European Political and Economic Union
ITRN 767  Political Economy and Integration in Latin America
ITRN 772  International Telecommunications
CONF 501  Introduction to Conflict Analysis and Resolution
HAP 609  Comparative International Health Systems
HAP 678  Introduction to the U.S. Health System
HAP 706  Integrated Health Systems Management

Total Credits 15

1 Other courses must be approved by the advisor or program director.

Professional Experience Requirement
Certification that the student has experience in the public policy process outside the classroom and is ready to take leadership responsibilities must be exhibited by one of two ways: relevant professional experience, approved by the program director, or an approved internship.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POGO 794</td>
<td>Internship</td>
<td>0-3</td>
</tr>
<tr>
<td></td>
<td>Up to three credits of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>0-3</td>
</tr>
</tbody>
</table>

Accelerated Master's

Bachelor's Degree (any)/Public Policy, Accelerated MPP
Overview
Highly-qualified undergraduates in any major may apply to the accelerated Master of Public Policy (MPP) program. If accepted students will be able to earn a bachelor's degree in their chosen major and the Master of Public Policy with a reduced number of overall credits and within a reduced time frame, sometimes within five years. More information on bachelor's/accelerated master's programs may be found in AP.6.7 Bachelor's/Accelerated Master's Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. See AP.6.9 Requirements for Master's Degrees. (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-9)

Admission
Please see Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Information specific to the accelerated Master of Public Policy program may be found on the Schar website (http://schar.gmu.edu/programs/undergraduate-degrees/accelerated-masters-programs).

To be considered for this accelerated master's program, applicants must have completed a minimum of 75 credits, including 12 credits of Government and/or Economics courses, and have a minimum GPA of 3.50 in all coursework applied to the degree.

Accelerated Option Requirements
While undergraduate students, accelerated master's students complete two graduate courses (six credits) that may be counted toward both the bachelor's and master's degrees. In addition, students may take another two courses (six credits) from the following list to be held as reserve graduate credit and count only toward the master's degree. The student must have a minimum GPA of 3.00 in each course. Students must maintain a minimum GPA of 3.00 in these courses and in coursework applied to their major.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 500</td>
<td>Theory and Practice in Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 503</td>
<td>Culture, Organization, and Technology</td>
<td>3</td>
</tr>
<tr>
<td>ITRN 503</td>
<td>Macroeconomic Policy in the Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
</tbody>
</table>

Upon completion and conferral of the undergraduate degree in the semester indicated in the application, students must submit the Bachelor's/Accelerated Master's Transition Form to apply credits to the master's degree. Students must begin their master's program the semester immediately following conferral of the undergraduate degree (excluding summer).

Public Policy, PhD
Banner Code: PP-PHD-PUBP

Academic Advising
560 Founders Hall
Arlington Campus
359 Research Hall
Fairfax Campus
Website: schar.gmu.edu

This doctoral degree in public policy is distinctive in its heavy emphasis on the combined influence of technology, culture, and institutions on public policy. Students investigate the increasing tensions created by technologically driven organizational change. This doctoral program prepares its graduates to assume positions of significant responsibility in academia, government, and the private and public sectors. With a focus on analytical and research-based approaches to public policy, our students seek to understand the underlying determinants of public policy.
choices, analyze and improve the implementation of policy, and identify and assess new opportunities to address emerging issues.

To investigate the policy issues associated with substantive policy areas, students develop in-depth understanding of American institutions, values, and culture; competence in research methods and advanced analytical methodologies; and a comparative, international perspective. At the time of admission, each student is assigned a faculty advisor who assists in the design and development of the student’s program.

Admissions & Policies

Admissions

Requirements

The program seeks students with exceptional potential for accumulating, sorting, analyzing, and communicating information and findings effectively. Public policy is inherently complex and value-laden. In the end, high-quality policy analysis requires thoughtful and judicious management of complex and incommensurate information, both quantitative and qualitative. Potential students must be able to manage and integrate both kinds of information and produce persuasive, well-organized, written syntheses and analytical insight.

The ideal applicant has demonstrated capabilities in research and writing, basic mathematical skills roughly equal to one semester of calculus, competence in statistics, some background in economics, and a theoretical and working knowledge of public policy processes. Applicants with strong records who are lacking in one or more of these areas may be admitted to the program and will receive assistance in making up deficiencies.

Applicants must hold a master’s degree from a regionally-accredited institution and have a GPA of 3.00 or higher. Prospective students are encouraged to attend an information session.

See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. See Schar Admissions (http://schar.gmu.edu/admissions) for application requirements and deadlines for the PhD in Public Policy. Students are considered for admission for the Fall term only.

Policies

For policies governing all graduate degrees, see Graduate Policies (p. 90).

Program Requirements

Students are required to complete a minimum of 82 credits of graduate coursework, of which no more than 12 may be dissertation credits. Specific coursework requirements include four foundational core courses, one semester of participation in the research colloquium (public policy seminar), two advanced methodology courses, three courses in an area of program specialization, and three advanced courses tailored to the student’s research needs and interests. Courses are determined in collaboration with the student’s advisor and are drawn widely not only from Schar, but also from other programs at Mason.

At the completion of core skills coursework (Stage One), students must pass a qualifying exam that evaluates mastery of the first year’s material, as well as the ability to integrate that material when addressing important and complex public policy problems and issues. Students must then develop their research areas through specialized coursework, and pass a field exam structured around their specific field of proposed doctoral research (Stages Two and Three). Other requirements include the successful preparation and defense of a doctoral research proposal and the ensuing dissertation (Stage Four).

A complete description of the program policies, procedures, and requirements is in the PhD student and faculty handbook (https://schar.gmu.edu/current-students/phd-student-services/phd-handbook-forms), which is published annually.

Reduction of Credit

Students must have a master’s degree before being admitted to the PhD in public policy. Up to 30 credits from a prior master’s degree may be applied toward the doctoral requirements at the program director’s discretion. The program director determines whether the credits are eligible for reduction of credit and the number of credits to be reduced. Students who receive less than a 30 credit reduction may take additional specialized elective credit in Stage Two.

Prerequisites: Methodological and Substantive Foundations

PhD students are required to have competence in the following three areas, either by taking these courses or by proving competence through a placement exam and/or evidence of previous relevant coursework.

Prerequisite courses will not count as part of the 82 credit requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POGO 511</td>
<td>Introductory Data Analysis for Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 720</td>
<td>Managerial Economics and Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 730</td>
<td>US Institutions and the Policy Process</td>
<td>3</td>
</tr>
</tbody>
</table>

Requirements

Degree Requirements

Total credits: minimum 82

Doctoral Coursework and Requirements

Stage One - Core Skills

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 800</td>
<td>Culture and Public Policy</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 801</td>
<td>Research Design for Public Policy</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 804</td>
<td>Multivariate Statistical Analysis in Public Policy</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 805</td>
<td>Foundations of Social Science for Public Policy</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Pass the comprehensive Qualifying Exam</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 16

Stage Two - Policy Fields and Skills

After passing the qualifying exam, students assemble a Field Research Committee. By the end of their third semester, full-time students (fourth semester for part-time) must choose a chair for their Field Committee.

By the start of their fourth semester, full-time students (fifth semester for part-time) must submit to the chair of their Field Committee a plan...
for their Field of Study. The Field of Study Plan will describe a proposed research area, including citations relevant to current research in that Field. The Plan must be approved by both the student’s Field Committee chair and the program director.

Coursework taken in Stage Two includes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Three courses in an area of program specialization, chosen in collaboration with advisor</td>
<td>9</td>
</tr>
</tbody>
</table>

One advanced methods course chosen from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POGO 611</td>
<td>Advanced Data Analysis for Policy and Government</td>
<td>3-4</td>
</tr>
<tr>
<td>PUBP 754</td>
<td>Geographic Information Systems and Spatial Analysis for Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 791</td>
<td>Advanced Field Research for Policy: Theory and Method</td>
<td></td>
</tr>
<tr>
<td>PUBP 792</td>
<td>Advanced Economic Analysis for Policy Research</td>
<td></td>
</tr>
<tr>
<td>PUBP 793</td>
<td>Large-Scale Database Construction and Management for Policy Research</td>
<td></td>
</tr>
<tr>
<td>PUBP 850</td>
<td>Seminar in Public Policy</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 13-14

1 Other courses may be approved by the program director.

Stage Three - Research Foundations

In Stage Three, students take coursework approved in the Field of Study Plan. Courses in the Field of Study Plan are intended to be taken concurrently with work on the Field Statement and Field Exam. Students may not present a dissertation proposal for approval until they have passed the Field Exam.

Students may choose one of the established fields of study or work with a faculty committee to create their own field of study. The established fields in the doctoral program are: regional development and transportation; technology, science and innovation; entrepreneurship, growth and public policy; U.S. governance; culture and society; organizational and information technology; and global and international systems.

Students must complete all of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 810</td>
<td>Regional Development and Transportation Policy</td>
<td>10-12</td>
</tr>
<tr>
<td>PUBP 811</td>
<td>Applied Methods in Regional Development and Transportation Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 820</td>
<td>Technology, Science, and Innovation: Institutions and Governance</td>
<td></td>
</tr>
<tr>
<td>PUBP 821</td>
<td>Analytic Methods for Technology, Science, and Innovation Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 834</td>
<td>Entrepreneurship, Growth, and Public Policy</td>
<td></td>
</tr>
<tr>
<td>PUBP 835</td>
<td>Entrepreneurship, Creativity, and Innovation</td>
<td></td>
</tr>
<tr>
<td>PUBP 840</td>
<td>U.S. Policy-Making Institutions</td>
<td></td>
</tr>
<tr>
<td>PUBP 841</td>
<td>U.S. Policy-Making Processes</td>
<td></td>
</tr>
</tbody>
</table>

Stage Four - Dissertation

Twelve credits of PUBP 998 and PUBP 999 must be applied to the degree. A minimum of six credits must be PUBP 999.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 998</td>
<td>Research/Proposal for Dissertation</td>
<td>6</td>
</tr>
<tr>
<td>PUBP 999</td>
<td>Dissertation</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits: 12

Note: Where appropriate courses are not available from Schar, students may petition the program director for substitute courses to count for their Field of Study Plan.

Science, Technology, and Security Graduate Certificate

Banner Code: PP-CERG-STS

Academic Advising
The Schar School offers certificate programs in conjunction with its master’s programs. Students already pursuing a master’s degree in the school may, in most cases, after admission to a certificate program, earn an additional six credits (two courses) in Schar to receive a certificate in addition to the master’s degree. The certificate in science, technology, and security provides an introduction to the intersection of science and security, covering topics such as the technology of CBRN weapons, proliferation, technical countermeasures, and the role of science and technology in the policy-making process.

The graduate certificate in science, technology, and security may be pursued on a part-time or full-time basis.

### Admissions & Policies

#### Admissions

Applicants to all graduate programs must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies (p. 68). Participants must be admitted to a certificate program. Admission requirements are the same as those for the master’s programs and may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

#### Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

#### Termination from Program

Students admitted to a Schar program will be terminated from that program upon receiving one grade of F and are no longer eligible to take courses in the school. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. For policies governing all graduate degrees, see Graduate Policies (p. 90).

### Requirements

#### Certificate Requirements

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

#### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 706</td>
<td>Nuclear, Biological, and Chemical Weapons Policy and Security</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 760</td>
<td>National Security Technology and Policy</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

The Schar School offers certificate programs in conjunction with its master’s programs. Students already pursuing a master’s degree in the school may, in most cases, after admission to a certificate program, earn an additional six credits (two courses) in Schar to receive a certificate in addition to the master’s degree. The certificate in terrorism and homeland security is an interdisciplinary introduction to the phenomenon of modern terrorism and its implications for US domestic and foreign policy. It focuses on multidisciplinary analysis and holistic cross-sectorial approaches to long-term prevention of and response to terrorism.

The graduate certificate may only be pursued on a part-time basis.

### Admissions & Policies

#### Admissions

Applicants to all graduate programs must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies (p. 68). Participants must be admitted to a certificate program. Admission requirements are the same as those for the master’s programs and may be found on the Schar admissions website (http://schar.gmu.edu/admissions).

#### Policies

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).
Termination from Program
Students admitted to a Schar program will be terminated from that program upon receiving one grade of F and are no longer eligible to take courses in the school. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. For policies governing all graduate degrees, see Graduate Policies (p. 90).

Requirements
Certificate Requirements
Total credits: 15
This certificate may be pursued on a part-time basis only.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 722</td>
<td>Examining Terrorist Groups</td>
<td>3</td>
</tr>
<tr>
<td>BIOD 725</td>
<td>Terrorism and Weapons of Mass Destruction</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Electives Related to Terrorism Analysis or Response
Select three electives from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOD 609</td>
<td>Biodefense Strategy</td>
<td></td>
</tr>
<tr>
<td>BIOD 610</td>
<td>Advanced Topics in Global Health Security</td>
<td></td>
</tr>
<tr>
<td>BIOD 705</td>
<td>Intelligence: Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>BIOD 706</td>
<td>Nuclear, Biological, and Chemical Weapons Policy and Security</td>
<td></td>
</tr>
<tr>
<td>BIOD 709</td>
<td>Nonproliferation and Arms Control</td>
<td></td>
</tr>
<tr>
<td>BIOD 726</td>
<td>Food Security</td>
<td></td>
</tr>
<tr>
<td>GOVT 744</td>
<td>Foundations of Security Studies</td>
<td></td>
</tr>
<tr>
<td>GOVT 745</td>
<td>International Security</td>
<td></td>
</tr>
<tr>
<td>GOVT 746</td>
<td>Media and International Affairs</td>
<td></td>
</tr>
<tr>
<td>GOVT 758</td>
<td>Homeland/Transportation Security Administration</td>
<td></td>
</tr>
<tr>
<td>PUAD 630</td>
<td>Emergency Planning and Preparedness</td>
<td></td>
</tr>
<tr>
<td>PUAD 631</td>
<td>Disaster Response Operations and Recovery</td>
<td></td>
</tr>
<tr>
<td>PUAD 633</td>
<td>Hazard Mitigation Policy</td>
<td></td>
</tr>
<tr>
<td>PUAD 635</td>
<td>Emergency Preparedness: Interagency Communication and Coordination</td>
<td></td>
</tr>
<tr>
<td>PUAD 637</td>
<td>Managing Homeland Security</td>
<td></td>
</tr>
<tr>
<td>PUAD 731</td>
<td>Homeland/Transportation Security Administration</td>
<td></td>
</tr>
<tr>
<td>PUBP 742</td>
<td>Transportation Safety and Security</td>
<td></td>
</tr>
<tr>
<td>PUBP 763</td>
<td>Illicit Trade</td>
<td></td>
</tr>
<tr>
<td>PUBP 764</td>
<td>Transnational Crime and Corruption</td>
<td></td>
</tr>
<tr>
<td>PUBP 777</td>
<td>Critical Infrastructure Protection: Policy and Practice</td>
<td></td>
</tr>
<tr>
<td>CONF 501</td>
<td>Introduction to Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>GGS 590</td>
<td>Selected Topics in Geography ^1</td>
<td></td>
</tr>
</tbody>
</table>

POGO 750 Topics in Policy and Government
Other course with prior written approval of the advisor
Total Credits 9

^1 Only when topic is Geography of Terrorism and Homeland Security.

Transportation Policy, Operations, and Logistics, MA
Banner Code: PP-MA-TPOL

Academic Advising
560 Founders Hall
Arlington Campus
359 Research Hall
Fairfax Campus
Website: schar.gmu.edu

The master of arts in Transportation Policy, Operations, and Logistics (TPOL) program is designed for students and practicing professionals engaged in planning, regulating, managing, and operating transportation facilities and services. Students obtain a working knowledge of the theory, policy, law, research, and practices required to effectively and efficiently supply and operate transportation facilities and services. They also learn to think critically and analytically about the problems and challenges in this field and communicate their analyses clearly and effectively through written and oral presentations.

Admissions & Policies
Admissions
Requirements
See Graduate Admission Policies (p. 68) for general information on graduate admission to George Mason University. Specific information on application requirements and deadlines may be found with Schar Admissions (http://schar.gmu.edu/admissions).

Completed applications for fall and spring semesters are reviewed on a rolling basis, with late applications considered on a space-available basis. Students may be admitted for nondegree study and apply a limited number of credits toward the master’s degree should they choose to apply to the degree program later, in accordance with university policy.

Policies
Termination from Program
Students admitted to an Schar program will be terminated from Schar upon receiving one grade of F and are no longer eligible to take courses in Schar. Per university regulation, students are terminated from the university after accumulating grades of F in two courses or 9 credits of unsatisfactory grades in graduate courses. For policies governing all graduate degrees, see Graduate Policies (p. 90).
Requirements

Degree Requirements
Total credits: 34

TPOL Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 715</td>
<td>Introduction to Transportation Systems</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 716</td>
<td>Transportation Operations and Logistics</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 717</td>
<td>Analysis for Transportation Managers</td>
<td>4</td>
</tr>
<tr>
<td>PUBP 718</td>
<td>Transportation Planning and Policy</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 721</td>
<td>Transportation Economics</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 722</td>
<td>Practicum in Transportation Policy, Operations, and Logistics</td>
<td>3</td>
</tr>
<tr>
<td>PUBP 500</td>
<td>Theory and Practice in Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>Three credits of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PUBP 503</td>
<td>Culture, Organization, and Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 25

Electives

Electives must be approved by the program director or academic advisor.

Total Credits 9

Urban and Suburban Studies Minor

Banner Code: USSD

Academic Advising
359 Research Hall
Fairfax Campus

This is an interdisciplinary minor offered with the College of Humanities and Social Sciences. (p. 305) Students may design their own focus by consulting with the minor advisor.

Faculty
Travis (minor advisor)

Admissions & Policies

Policies

Students pursuing this minor must complete 18 credits of coursework with a minimum GPA of 2.00. Eight credits of coursework must be unique to the minor. For policies governing all minors, see the Undergraduate Policies (p. 87) section of this catalog.

Requirements

Minor Requirements
Total credits: 18

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>USST 301</td>
<td>Urban Growth in a Shrinking World</td>
<td>3</td>
</tr>
<tr>
<td>USST 390</td>
<td>Special Topics in Urban and Suburban Studies</td>
<td>3</td>
</tr>
<tr>
<td>USST 401</td>
<td>Seminar: The Future of Metropolitan America</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Electives

Select three courses (9 credits) from a list of approved electives, which must be selected from more than one of the following categories:

Environment and Culture
Government and Policy
Economy

Total Credits 9

1 Consult the director for a list of approved courses in each category.

Volgenau School of Engineering

Graduate
2400 Nguyen Engineering Building
703-993-1505
vsephd@gmu.edu

Undergraduate
2500 Nguyen Engineering Building
703-993-1511
vseinfo@gmu.edu

Website: engineering.gmu.edu

Administration

• Kenneth S. Ball, P.E. (Texas), Dean
• Sharon A. Caraballo, Associate Dean for Undergraduate Programs
• Liza Wilson Durant, Associate Dean for Strategic Initiatives and Community Engagement
• Art Pyster, Associate Dean for Research
• Ariela Sofer, Associate Dean for Administration and Faculty Affairs
• Kim Goodwin-Slater, Director of Finance

College Code: VS

The Volgenau School of Engineering delivers a transformative learning experience to its students by integrating engineering and technology with other areas of scholarship. We produce visionary stewards of society who are prepared to discover solutions to complex global challenges and make the world safer, cleaner, and more prosperous. A faculty of engaged educators lead high-impact research in critical areas, including sustainability, big data, cybersecurity, robotics and artificial intelligence, signals and communications, and healthcare technology. These existing and emerging areas of expertise span departmental and disciplinary boundaries and reflect the breadth of the scholarly activities of our faculty and students.
The Volgenau School of Engineering prepares students to solve complex, multidisciplinary, global challenges by leveraging innovative learning tools, the inventive capacity of our region, and Mason’s global presence. The faculty and administration support the needs of the 21st century learner by providing multiple paths to success, a diverse and inclusive academic community, and real time integration of new data and technology in the classroom.

Undergraduate Programs
Bachelor of Science Programs

Our undergraduate degree programs prepare students to enter directly into professional employment or continue studies at the graduate level. The requirements for the bachelor’s degrees include required and elective courses in mathematics, humanities, Mason Core, and specialty courses applicable to the major. Each program strongly emphasizes English composition and communication.

The Volgenau School offers the following Bachelor of Science programs:

- Applied Computer Science (p. 1050)
- Bioengineering (p. 1032)
- Civil and Infrastructure Engineering (p. 1177)
- Computer Engineering (p. 1087)
- Computer Science (p. 1057)
- Cyber Security Engineering (p. 1016)
- Electrical Engineering (p. 1097)
- Information Technology (p. 1122)
- Mechanical Engineering (p. 1131)
- Statistics (p. 1146)
- Systems Engineering (p. 1164)

Minors

Minors are available in aviation flight training and management, bioengineering, computer science, data analysis, environmental engineering, information technology, mechanical engineering, software engineering, statistics, and systems engineering.

BS/Accelerated MS Programs

Accelerated master’s degree programs offer high-achieving Mason undergraduates the opportunity to complete their bachelor’s and master’s degrees within five years. Qualified candidates take advantage of a streamlined master’s application process with no application fee and the ability to take up to 12 graduate credits at the undergraduate tuition rate.

- Applied Computer Science, BS/Computer Science, Accelerated MS (p. 1054)
- Applied Computer Science, BS/Data Analytics Engineering, Accelerated MS (p. 1054)
- Applied Computer Science, BS/Information Security and Assurance, Accelerated MS (p. 1054)
- Applied Computer Science, BS/Information Systems, Accelerated MS (p. 1054)
- Applied Computer Science, BS/Software Engineering, Accelerated MS (p. 1054)
- BS (selected)/Operations Research, Accelerated MS (p. 1167)
- BS (selected)/Statistical Science, Accelerated MS (p. 1167)
- BS (selected)/Systems Engineering, Accelerated MS (p. 1167)
- Bachelor’s Degree (Green Leaf)/Environmental Science and Policy, Accelerated MS (p. 1180)
- Bioengineering, BS/Data Analytics Engineering, Accelerated MS (p. 1024)
- Bioengineering, BS/Operations Research, Accelerated MS (p. 1156)
- Bioengineering, BS/Systems Engineering, Accelerated MS (p. 1174)
- Civil and Infrastructure Engineering, BS/Civil and Infrastructure Engineering, Accelerated MS (p. 1180)
- Civil and Infrastructure Engineering, BS/Operations Research, Accelerated MS (p. 1180)
- Civil and Infrastructure Engineering, BS/Systems Engineering, Accelerated MS (p. 1180)
- Computer Science, BS/Computer Science, Accelerated MS (p. 1060)
- Computer Science, BS/Data Analytics Engineering, Accelerated MS (p. 1060)
- Computer Science, BS/Information Security and Assurance, Accelerated MS (p. 1060)
- Computer Science, BS/Information Systems, Accelerated MS (p. 1060)
- Computer Science, BS/Software Engineering, Accelerated MS (p. 1060)
- Cyber Security Engineering, BS/Digital Forensics and Cyber Analysis, Accelerated MS (p. 1096)
- Cyber Security Engineering, BS/Operations Research, Accelerated MS (p. 1156)
- Cyber Security Engineering, BS/Systems Engineering, Accelerated MS (p. 1174)
- Electrical Engineering, BS/Electrical Engineering, Accelerated MS (p. 1101)
- Electrical Engineering, BS/Telecommunications, Accelerated MS (p. 1101)
- Individualized Study, BIS/Telecommunications, Accelerated MS (p. 1114)
- Individualized Study, BIS/Applied Information Technology, Accelerated MS (p. 1120)
- Information Technology, BS/Applied Information Technology, Accelerated MS (p. 1125)
- Information Technology, BS/Digital Forensics and Cyber Analysis (title change pending SCHEV approval), Accelerated MS (p. 1125)
- Information Technology, BS/Information Security and Assurance, Accelerated MS (p. 1125)
- Information Technology, BS/Information Systems, Accelerated MS (p. 1125)
- Information Technology, BS/Software Engineering, Accelerated MS (p. 1125)
- Statistics, BS/Operations Research, Accelerated MS (p. 1156)
- Statistics, BS/Systems Engineering, Accelerated MS (p. 1174)
- Systems Engineering, BS/Data Analytics Engineering, Accelerated MS (p. 1024)
- Systems Engineering BS/Operations Research, Accelerated MS (p. 1156)
- Systems Engineering BS/Systems Engineering, Accelerated MS (p. 1174)
• Systems Engineering, BS/Telecommunications, Accelerated MS (p. 1167)

**Graduate Programs**

**Master of Science Programs**
The ever-increasing complexity and technical challenges in engineering, computer science, and information technology demand studies beyond the bachelor’s degree.

The Volgenau School offers the following master’s programs:

• Applied Information Technology (p. 1118)
• Bioengineering (p. 1042)
• Biostatistics (p. 1138)
• Civil and Infrastructure Engineering (p. 1182)
• Computer Engineering (p. 1109)
• Computer Science (p. 1065)
• Data Analytics Engineering (p. 1019)
• Digital Forensics and Cyber Analysis (p. 1095) (title change Pending SCHEV Approval)
• Electrical Engineering (p. 1103)
• Geotechnical, Construction, and Structural Engineering (p. 1189)
• Information Security and Assurance (p. 1072)
• Information Systems (p. 1075)
• Management of Secure Information Systems (p. 1031)
• Operations Research (p. 1153)
• Software Engineering (p. 1081)
• Statistical Science (p. 1141)
• Systems Engineering (p. 1170)
• Telecommunications (p. 1111)

**Doctor of Philosophy Programs**

PhD students will gain comprehensive knowledge in their area of study and will be prepared for careers in higher education and scientific research. They are required to demonstrate a comprehensive understanding and complete research that adds significantly to the body of knowledge in engineering, computer science, information technology, or statistics.

The Volgenau School offers seven doctoral programs:

• Bioengineering (p. 1046)
• Civil and Infrastructure Engineering (p. 1186)
• Computer Science (p. 1069)
• Electrical and Computer Engineering (p. 1105)
• Information Technology (p. 1026)
• Statistical Science (p. 1145)
• Systems Engineering and Operations Research (p. 1162)

**Commonwealth Graduate Engineering Program (CGEP)**

CGEP is the premier provider of high-quality post-baccalaureate online engineering education in the Commonwealth of Virginia and is designed for practicing engineers and scientists interested in maintaining and enhancing their skills. Participating universities are: George Mason University, Old Dominion University, University of Virginia, Virginia Commonwealth University, and Virginia Tech. Offerings include master’s degrees and certificate programs.

While each program is offered by one of the five participating universities, the collaboration between universities allows students more flexibility and variety in course offerings. A substantial number of course requirements can be taken at any of the five participating universities to satisfy the degree or certificate program. Prospective students should apply directly to the university offering the degree of interest. Mason has a number of degree and certificate programs available through CGEP. These programs follow all policies stated in this catalog for the program, with the exception of allowing up to 50 percent of the required credits to be completed at other CGEP participating universities. Faculty advisor approval is needed.

Policies for other universities’ programs are determined by those institutions. Please consult with the university offering the program of interest for details.

For more information including the Mason programs available through CGEP, visit their website (http://cgep.virginia.gov).

### Requirements & Policies

#### Undergraduate Requirements

**Degree Requirements**
The following general requirements must be completed by all undergraduate students:

• At least 120 credits of academic work including at least 45 credits of upper-level courses (numbered 300 or above);
• At least 6 credits of English composition, 3 credits of literature, and 3 credits of oral communication (Mason Core courses);
• At least 3 credits of arts, 3 credits of Western civilization or world history, 3 credits of social and behavioral science, and 3 credits of global understanding issues (Mason Core courses);
• At least 24 credits of social science and humanities course work, which is normally satisfied by the 24 credits of Mason Core courses described above;

All requirements are listed in the sections for specific Volgenau School majors. These include university requirements for mathematics, natural science, information technology including ethics, and synthesis. Sample schedules that fulfill degree requirements for individual programs within the Volgenau School are available from the departments.

#### Undergraduate Policies

**Academic Policies**

Students should become familiar with the Academic Policies (p. 77) in the University Catalog in addition to policies specific to each academic unit. The Academic Policies (p. 77) also list additional university requirements for minor programs and double majors.

**Academic Appeal of Policies and Actions**

A student’s instructor, academic advisor and/or department can resolve most academic issues. If, however, an undergraduate student disagrees with a decision at the department level and feels that there may be reasonable grounds for appeal, the student should contact the Volgenau School Undergraduate Student Services Office at 703-993-1511 for guidance in preparing a request to the Associate Dean for Undergraduate Programs or other offices as appropriate. Information about grade appeals is found in AP.3.9 Grade Appeals (p. 85).
**Academic Progression**

Students majoring in Volgenau School programs are expected to have an acceptable plan of study on file, formulated with assistance from their departmental advisor. They are expected to make reasonable progress toward their degree during each semester in which they are enrolled.

Termination from a major—or from all majors in a college—may be imposed as a result of excessive repeating of required courses without achieving the minimum standard, and for other evidence of continued failure to make adequate progress toward declaration or completion of the major. For more information, see AP 5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4)

**Sample Schedules**

Sample schedules that fulfill degree requirements for individual programs within the Volgenau School are available from the departments.

**Change of Major**

1. **Criteria for freshman students in their first semester at Mason**

   Freshman students who have been admitted to any VSE engineering or computer science program may change their major to any other engineering or computer science program before the final drop deadline of their first semester at Mason.

   Freshman students who have been admitted to Information Technology, Statistics, VSE Undeclared, or any non-VSE major must have departmental approval to change their major to a VSE program before the final drop deadline of their first semester at Mason.

   Any change of major requests made after this deadline are bound to the change of major criteria outlined in section 3 and require the completion of at least one semester at Mason.

2. **Criteria for transfer students in their first semester at Mason**

   Transfer students who have been admitted to any VSE engineering program may change their major to any other engineering program before the final drop deadline of their first semester at Mason.

   Transfer students who have been admitted to Computer Science, Information Technology, Statistics, VSE Undeclared, or any non-VSE major must have department approval to change their major to a VSE program before the final drop deadline of their first semester at Mason.

   Any change of major requests made after this deadline are bound to the change of major criteria outlined in section 3 and require the completion of at least one semester at Mason.

3. **Criteria for students who have completed at least one semester at Mason**

   Students who have completed at least one semester at Mason and who are considering changing their major to any VSE engineering program should consult with the Volgenau School of Engineering Coordinator of Undergraduate Advising, 2500 Nguyen Engineering Building. These students must have successfully completed MATH 114, PHYS 160 and PHYS 161 (with a grade of at least C) and should have a minimum Mason GPA of 2.75 in all technical coursework. Technical coursework refers to any math, physics, engineering, statistics and computer science courses completed thus far at Mason and that are applicable to the intended engineering major. At least 6 credits of these technical courses should have been completed successfully at Mason.

   *Students considering changing their major to Bioengineering with a Pre-Health concentration need to meet the above VSE engineering program requirements furthermore with a minimum Mason GPA of 3.00.

   Students considering changing their major to Applied Computer Science, Computer Science, Information Technology, or Statistics should consult with the Volgenau School of Engineering Coordinator of Undergraduate Advising, 2500 Nguyen Engineering Building. These students need to meet the criteria for that program as defined in the change of major section for that program in the catalog. Minimum GPA requirements stated for those programs are based on courses taken at Mason.

   Exceptions to the policy may only be granted at the discretion of the chair or associate chair of the department.

**Undeclared Students in the Volgenau School of Engineering**

Students who are undecided about their specific major may select Volgenau School Undeclared as their major. This should be done as soon as possible after a student enrolls at Mason. Students will be advised to follow an initial semester or two of courses that could be applicable to majors that are of interest to them. This may involve taking courses that help the student better understand different engineering and computing areas, but which may not contribute to the total credits needed for the major they eventually choose.

Students who apply to a VSE major but do not meet major admissions criteria may also be accepted into VSE Undeclared, and become eligible to declare a VSE major after meeting specific requirements as determined by that particular major.

VSE Undeclared students are advised by the Coordinator of Undergraduate Academic Advising in the Student Services Office. Students should seek advising at least once each semester.

**Writing-Intensive Requirement**

The university requires all undergraduate students to successfully complete a course, or a combination of courses, designated “writing intensive” in their majors at the 300 level or above. To determine the writing-intensive course requirements for specific degrees, refer to the major program descriptions in the following department sections.

**Restricted Courses**

Students are encouraged to take advantage of the many excellent courses available to broaden their educational experience or strengthen their background; however, some credits earned may not satisfy any degree requirements. Degree requirements for Volgenau School undergraduate programs may not include credits earned in military science. At most 3 credits of 100-level RECR coursework may be taken to satisfy the degree requirements of those VSE programs that allow general electives. Whenever there is uncertainty, students must consult with an academic advisor in their department.

**Online Education Programs**

In order to increase access to Volgenau School education while meeting the needs of the School’s student population, select degree programs and courses may be completed via online education. All academic policies and procedures apply to online education programs and courses as referred to in the appropriate sections of this catalog. Some instructors may require exams and/or other meetings to take place in a proctored or on-campus environment. Students should contact the instructor concerning these requirements if not explicitly stated on Patriot Web.
Space permitting and if desired, students enrolled in the online sections are also permitted to attend the instructor’s campus-based classroom section if offered during the same semester.

For more information about the Volgenau School programs available online, visit Mason Online (http://masononline.gmu.edu).

**Termination from the Major**

No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP.5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

**Graduate Policies**

**Admission**

Admission decisions are made by the faculty committee or graduate coordinator of the respective graduate program. Denial of admission is not subject to appeal. Applicants denied admission to a program are not permitted to enroll in courses in that graduate program, though they may apply for either non-degree enrollment or admission to another program.

If an applicant is offered graduate admission, the college reserves the right to withdraw that offer of admission if:

- During his or her academic studies, the admitted applicant has a significant drop in academic performance or fails to graduate with a degree prior to the first day of classes for the term admitted.
- There has been a misrepresentation in the application process.
- Prior to the first day of classes for the term admitted, the school learns that the admitted applicant has engaged in behavior that indicates a serious lack of judgment or integrity, irrespective of the outcome of any disciplinary process related to such behavior.
- Students admitted to an accelerated master’s program do not maintain satisfactory progress in his or her undergraduate program, do not receive a minimum grade of 3.00 in the graduate classes taken as an undergraduate, or otherwise does not meet the conditions specified on the application and admission letter.

The university further reserves the right to require the applicant to provide additional information (and/or authorization for the release of information) about any such matter.

**Academic Policies**

Students are responsible for becoming familiar with the Academic Policies (https://catalog.gmu.edu/policies/academic) in the University Catalog in addition to policies specific to the School. A resource for Mason Engineering Graduate Students is maintained online (https://mymasonportal.gmu.edu/webapps/blackboard/content/listContent.jsp?course_id=_336120_1&content_id=_7639878_1&mode=reset) with graduate-specific Volgenau information.

**Academic Progression**

Graduate students must make satisfactory progress toward a degree.

At a minimum, this requires maintaining enrollment in at least one term per academic year and a GPA of 3.0 or higher. Inability to make satisfactory progress toward a degree may result in termination (https://catalog.gmu.edu/policies/academic/graduate-policies). Academic programs of study are entitled to enforce more stringent criteria which may include specific grade requirements in courses, successful completion of doctoral qualifying exams, etc. Please refer to your program for additional information.

**Doctoral Change of Program**

Students in Volgenau School of Engineering doctoral programs are not permitted to change doctoral programs without a new, formal PhD admission application submitted in accordance with the established requirements and deadlines.

**Non-degree**

Non-degree graduate students taking courses in the Volgenau School may not register for classes numbered 700 or higher. All MS degree programs require at least 18 credits to be completed in degree status at Mason to be considered for graduation; as a result, a maximum of 12 credits of non-degree coursework can be transferred to a degree program.

**Readmission**

Graduate students who have been terminated or have resigned from a program in the Volgenau School and want to reapply to the same program must wait five (5) semesters (Fall/Spring) before submitting a new application for admission. A full application for admission as well as all application materials required of that program must be submitted (or resubmitted). GRE scores, if required, cannot be older than five years. Previous admission to a program does not guarantee readmission to the same program. The circumstances of the prior termination or resignation will be a factor in the decision-making process. Graduate credit earned prior to termination may be applied to the degree program as long as the requirements are satisfied for Transfer of Credit (https://catalog.gmu.edu/policies/academic/graduate-policies/#text).
Online Education Programs

In order to increase access to Volgenau School education while meeting the needs of the School’s student population, select degree programs and courses may be completed via online education. All academic policies and procedures apply to online education programs and courses as referred to in the appropriate sections of this catalog. Some instructors may require exams and/or other meetings to take place in a proctored or on-campus environment. Students should contact the instructor concerning these requirements if not explicitly stated on Patriot Web. Space permitting and if desired, students enrolled in the online sections are also permitted to attend the instructor’s campus-based classroom section if offered during the same semester.

For more information about the Volgenau School programs available online, visit Mason Online (http://masononline.gmu.edu).

Termination

University policy on Academic Termination can be found in AP.6.6.2 (https://catalog.gmu.edu/policies/academic/graduate-policies). School specific process and criteria can be found on the Mason Engineering Graduate Student Resource page (https://mymasonportal.gmu.edu/webapps/blackboard/content/listContent.jsp?course_id=_336120_1&content_id=_7639878_1&mode=reset).

Admissions & Policies

Policies

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

Advising and Plan of Study

All cyber security engineering students are assigned a faculty advisor. With the advisor’s help and approval, each student is required to complete a plan of study, which constitutes a learning plan for the degree program. The plan of study must be signed by the student’s advisor and the Program Chair and be updated and signed by the advisor at least once a year.

Change of Major

See Change of Major (p. 1013) for more information.

Grade Requirements

Students in the Cyber Security Engineering, BS program must complete all mathematics, science, and VSE courses with a grade of C or better.

Termination from the Major

No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP.5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104...
Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

**Requirements**

**Degree Requirements**

Total credits: 126

**Cyber Security Engineering Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYSE 101</td>
<td>Introduction to Cyber Security Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 211</td>
<td>Operating Systems and Lab</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 220</td>
<td>Systems Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 230</td>
<td>Computer Networking</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 325</td>
<td>Discrete Events Systems Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 330</td>
<td>Introduction to Network Security</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 411</td>
<td>Secure Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 421</td>
<td>Industrial Control Systems Security</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 425</td>
<td>Secure RF Communications</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 430</td>
<td>Critical Infrastructure Protection</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 445</td>
<td>System Security and Resilience</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 450</td>
<td>Cyber Vulnerability Lab</td>
<td>1</td>
</tr>
<tr>
<td>CYSE 470</td>
<td>Human Factors and Cyber Security Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 475</td>
<td>Cyber Physical Systems</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 476</td>
<td>Cryptography Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 491</td>
<td>Engineering Senior Seminar</td>
<td>2</td>
</tr>
<tr>
<td>CYSE 492</td>
<td>Senior Advanced Design Project I</td>
<td>2</td>
</tr>
<tr>
<td>CYSE 493</td>
<td>Senior Advanced Design Project II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Technical Electives**

Select 9 credits from the following approved technical courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYSE 424</td>
<td>Embedded and Real Time Systems</td>
<td></td>
</tr>
<tr>
<td>CYSE 460</td>
<td>Power Systems and Smart Grid</td>
<td></td>
</tr>
<tr>
<td>CYSE 461</td>
<td>Power Grid Security</td>
<td></td>
</tr>
<tr>
<td>CYSE 462</td>
<td>Mobile Devices and Network Security</td>
<td></td>
</tr>
<tr>
<td>CYSE 465</td>
<td>Transportation Systems Design</td>
<td></td>
</tr>
<tr>
<td>CYSE 467</td>
<td>GPS Security</td>
<td></td>
</tr>
<tr>
<td>CYSE 477</td>
<td>Intrusion Detection</td>
<td></td>
</tr>
<tr>
<td>CYSE 478</td>
<td>Cyber Security Audit and Compliance</td>
<td></td>
</tr>
<tr>
<td>CYSE 479</td>
<td>Methods of User Authentication</td>
<td></td>
</tr>
<tr>
<td>CYSE 480</td>
<td>Malicious Software and Hardware</td>
<td></td>
</tr>
<tr>
<td>CYSE 499</td>
<td>Special Topics in Cyber Security Engineering</td>
<td></td>
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**Total Credits**

59

**Electrical and Computer Engineering**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECE 301</td>
<td>Digital Electronics</td>
<td>3</td>
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</tbody>
</table>

**Total Credits**

3

**Systems Engineering**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 205</td>
<td>Systems Engineering Principles</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**

3

**Mathematics and Statistics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td>3</td>
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**Total Credits**

20

**Natural Sciences**

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
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<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
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<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
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</tr>
</tbody>
</table>

**Total Credits**

8

**Computing**

Select from options below:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>7</td>
</tr>
<tr>
<td>or CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>7</td>
</tr>
<tr>
<td>SYST 230</td>
<td>Object-oriented Modeling and Design</td>
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</tr>
<tr>
<td>CS 222</td>
<td>Computer Programming for Engineers</td>
<td></td>
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</table>

**Total Credits**

7

**Engineering**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ENGR 107</td>
<td>Introduction to Engineering (Mason Core) (p. 142)</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Credits**

2
Oral Communication and Economics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Remaining Mason Core

Students must complete all Mason Core (p. 142) requirements not fulfilled by major requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (p. 142)</td>
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<td>6</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

Note:
All students must submit at least 24 credits of social science and humanities coursework, which is normally satisfied by the 24 credits of Mason Core (p. 142) social science and humanities courses listed above and with the oral communication and economics requirement.

Accelerated Master's

Cyber Security Engineering, BS/Computer Engineering, Accelerated MS

Overview

The university offers highly-qualified students in the Cyber Security Engineering, BS (p. 1016) the option of obtaining an accelerated Computer Engineering, MS (p. 1092).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP.6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

Admission Requirements

Students in the Cyber Security Engineering, BS (p. 1016) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Computer Engineering, MS (p. 1092) program.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping.

Students take 6 credits of 500-level ECE (p. 1611) or CS (p. 1468) courses as part of their technical electives or substitutes for required courses in the Cyber Security Engineering, BS (p. 1016) program.

Specifically, students are encouraged to take two of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 505</td>
<td>Hardware Security</td>
<td>3</td>
</tr>
<tr>
<td>ECE 508</td>
<td>Internet of Things</td>
<td>3</td>
</tr>
<tr>
<td>ECE 511</td>
<td>Computer Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td>3</td>
</tr>
</tbody>
</table>

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form (https://registrar.gmu.edu/forms) that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

Cyber Security Engineering, BS/Digital Forensics and Cyber Analysis (title change pending SCHEV approval), Accelerated MS

Overview

Highly-qualified students in the Cyber Security Engineering, BS (p. 1016) have the option of obtaining an accelerated Digital Forensics and Cyber Analysis (p. 1095), MS (p. 1095).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Students in the Cyber Security Engineering, BS (p. 1016) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Digital Forensics and Cyber Analysis, MS (p. 1095) program.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping.

Students register for two Digital Forensics and Cyber Analysis core courses (6 credits) in place of two of the three required technical electives, as part of the undergraduate degree requirements. Specifically, students must take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFRS 500</td>
<td>Introduction to Forensic Technology and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>and one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CFRS 510</td>
<td>Digital Forensics Analysis (satisfies the IT 357 requirement for the INFS concentration in the BS program)</td>
<td></td>
</tr>
<tr>
<td>CFRS 660</td>
<td>Network Forensics (satisfies one NTEL concentration course in the BS program)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6
Note: Students complete all Digital Forensics and Cyber Analysis, MS (p. 1095) core courses and apply the two courses from the above list toward the Digital Forensics and Cyber Analysis, MS (p. 1095) requirements.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Cyber Security Engineering, BS/Systems Engineering, Accelerated MS
Overview
Highly-qualified students in the Cyber Security Engineering, BS (p. 1016) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Cyber Security Engineering, BS (p. 1016) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Options Requirement
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credit hours) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such electives to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Data Analytics Engineering, MS
Banner Code: VS-MS-DAEN
Phone: 703-993-6269
Email: datamine@gmu.edu

The MS in Data Analytics Engineering is a Volgenau multidisciplinary degree program, administered by the Department of Statistics, and is designed to provide students with an understanding of the technologies and methodologies necessary for data-driven decision-making. Students study topics such as data mining, information technology, statistical modeling, predictive analytics, optimization, risk analysis, and data visualization. It is aimed at students who wish to become data scientists and analysts in finance, marketing, operations, business/government intelligence and other information intensive groups generating and consuming large amounts of data.
Admissions & Policies

Admissions

Applicants must have completed a baccalaureate degree from a regionally accredited program with a reputation for high academic standards and an earned GPA of 3.00 or better in their 60 highest-level credits. While no specific undergraduate degree is required, a background in engineering, business, computer science, statistics, mathematics, or information technology is desirable, or alternatively strong work experience with data or analytics may be used. At a minimum at least one course each in calculus, statistics, and computer programming is required. DAEN 500 Data Analytics Fundamentals may be required for students without a basic foundation in Data Analytics.

For each of the concentrations there are additional admission requirements. These are listed in the descriptions of the individual concentrations.

In addition to fulfilling Mason’s admission requirements for graduate study, applicants must provide:

- Two letters of recommendation, preferably from academic references or references in industry or government who are familiar with the applicant’s professional or academic accomplishments.
- Resume.
- Detailed statement of career goals and professional aspirations.
- Completed self-evaluation form.
- If the applicant’s native language is not English, proof of English competency with a minimum TOEFL score of 575 for the paper-based exam or 230 for the computer-based exam.

Concentrations

Students can elect a concentration that corresponds to a specialized technical area. Students not interested in a concentration can work with an advisor to select 15 credits of electives from among courses allowed in all the concentrations.

Available Concentrations

- Concentration in Applied Analytics (APAN) (p. 1020)
- Concentration in Bioengineering (BIOE) (p. 1020)
- Concentration in Business Analytics (BUSA) (p. 1021)
- Concentration in Cyber Analytics (CYBA) (p. 1021)
- Concentration in Data Mining (DTM) (p. 1021)
- Concentration in Financial Engineering (FNNE) (p. 1022)
- Concentration in Health Data Analytics (HDAN) (p. 1022)
- Concentration in the Internet of Things (INOT) (p. 1022)
- Concentration in Predictive Analytics (PRAN) (p. 1023)
- Concentration in Statistical Analytics (STLA) (p. 1023)

Concentration in Applied Analytics (APAN)

Focuses on the practical elements of adapting big data approaches to common analytic problems and government operations.

Additional Admission Requirements

Students entering the program should have completed the following George Mason undergraduate courses or their equivalents:

- IT 106 Introduction to IT Problem Solving Using Computer Programming (3)
- MATH 108 Introductory Calculus with Business Applications (Mason Core) (3)
- STAT 250 Introductory Statistics I (Mason Core) (3)

Degree Requirements

Total credits: 30

Core Courses

The following core coursework covers the basic elements of data analytics at the graduate level.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 580</td>
<td>Analytics: Big Data to Information</td>
<td>3</td>
</tr>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
<td>3</td>
</tr>
<tr>
<td>or CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>DAEN 690</td>
<td>Data Analytics Project</td>
<td>3</td>
</tr>
<tr>
<td>OR 531</td>
<td>Analytics and Decision Analysis</td>
<td>3</td>
</tr>
<tr>
<td>or OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>STAT 515</td>
<td>Applied Statistics and Visualization for Analytics</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

Concentration in Bioengineering (BIOE)

Bioengineering, whether it is mapping the human genome or computer aided diagnosis, is an exercise in data analytics.

1 CS 504 Principles of Data Management and Mining (for all concentrations except Data Mining) or CS 584 Theory and Applications of Data Mining (for the Data Mining concentration only)

2 STAT 515 Applied Statistics and Visualization for Analytics (for all concentrations except Statistics for Analytics) or STAT 554 Applied Statistics I (for the Statistics for Analytics concentration only)
Additional Admission Requirements

Students entering the program should have completed the following George Mason undergraduate courses or their equivalents:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 320</td>
<td>Bioengineering Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Students with some deficiencies in preparation may be admitted provisionally pending completion of foundation courses in mathematics or computer science. Undergraduate credit earned for this purpose may not be applied toward the graduate degree.

Required Concentration Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 501</td>
<td>Bioengineering Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>BENG 551</td>
<td>Translational Bioengineering</td>
<td>3</td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECE 535</td>
<td>Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENG 525</td>
<td>Neural Engineering</td>
<td>3</td>
</tr>
<tr>
<td>BENG 538</td>
<td>Medical Imaging</td>
<td></td>
</tr>
<tr>
<td>ECE 537</td>
<td>Introduction to Digital Image Processing (DIP)</td>
<td></td>
</tr>
<tr>
<td>BENG 550</td>
<td>Advanced Biomechanics</td>
<td></td>
</tr>
<tr>
<td>BENG 636</td>
<td>Advanced Biomedical Signal Processing</td>
<td></td>
</tr>
<tr>
<td>DAEN 698</td>
<td>Data Analytics Research Project</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

Concentration in Business Analytics (BUSA)

Additional Admission Requirements

Students entering the program must have successfully completed STAT 515 Applied Statistics and Visualization for Analytics or STAT 554 Applied Statistics I with a grade of B or better.

Required Concentration Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBUS 720</td>
<td>Marketing Analytics</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 721</td>
<td>Marketing Research</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 738</td>
<td>Data Mining for Business Analytics</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 739</td>
<td>Advanced Data Mining for Business Analytics</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 744</td>
<td>Fraud Examination</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

Concentration in Cyber Analytics (CYBA)

Deals with the process of acquiring, extracting, integrating, transforming, and modeling data with the goal of deriving useful information that is suitable for presentation in a court of law. Digital forensics is a key component in criminal, civil, intelligence, and counter-terrorism matters. Students will be able to apply data analytics to such areas as digital media, intercepted (network) data, mobile media, unknown code, and leverage that analysis in order to determine, intent, attribution, cause, effect, and context.

Additional Admission Requirements

Students entering the program should have completed the following George Mason undergraduate courses or their equivalents:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYSE 211</td>
<td>Operating Systems and Lab</td>
<td>3</td>
</tr>
<tr>
<td>or TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td></td>
</tr>
<tr>
<td>IT 445</td>
<td>Advanced Networking Principles</td>
<td>3</td>
</tr>
<tr>
<td>or TCOM 515</td>
<td>Internet Protocol Routing: Lecture and Laboratory Course</td>
<td></td>
</tr>
</tbody>
</table>

Note:

Students with some deficiencies in preparation may be admitted provisionally pending completion of foundation courses in mathematics or computer science. Undergraduate credit earned for this purpose may not be applied toward the graduate degree.

Required Concentration Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFRS 510</td>
<td>Digital Forensics Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CFRS 660</td>
<td>Network Forensics</td>
<td>3</td>
</tr>
<tr>
<td>Select three from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFRS 661</td>
<td>Digital Media Forensics</td>
<td></td>
</tr>
<tr>
<td>CFRS 663</td>
<td>Operations of Intrusion Detection for Forensics</td>
<td></td>
</tr>
<tr>
<td>CFRS 664</td>
<td>Incident Response Forensics</td>
<td></td>
</tr>
<tr>
<td>CFRS 698</td>
<td>Independent Reading and Research</td>
<td></td>
</tr>
<tr>
<td>CFRS 761</td>
<td>Malware Reverse Engineering</td>
<td></td>
</tr>
<tr>
<td>CFRS 762</td>
<td>Mobile Device Forensics</td>
<td></td>
</tr>
<tr>
<td>CFRS 763</td>
<td>Registry Forensics - Windows</td>
<td></td>
</tr>
<tr>
<td>CFRS 767</td>
<td>Penetration Testing in Computer Forensics</td>
<td></td>
</tr>
<tr>
<td>CFRS 768</td>
<td>Digital Warfare</td>
<td></td>
</tr>
<tr>
<td>CFRS 780</td>
<td>Advanced Topics in Computer Forensics</td>
<td></td>
</tr>
<tr>
<td>DAEN 698</td>
<td>Data Analytics Research Project</td>
<td></td>
</tr>
<tr>
<td>ECE 527</td>
<td>Learning From Data</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

Concentration in Data Mining (DTM)

Aimed at students who are interested in understanding data mining, advanced database systems, MapReduce programming, pattern recognition, decision guidance systems, and Bayesian inference as they relate to data analytics.

Additional Admission Requirements

Students entering the program should have completed the following George Mason undergraduate courses or their equivalents:
Data Analytics Engineering, MS

Required Concentration Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td>CS 465</td>
<td>Computer Systems Architecture</td>
<td>3</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select four from the following: 12

- CS 550 Database Systems
- CS 580 Introduction to Artificial Intelligence
- CS 650 Advanced Database Management
- CS 688 Machine Learning
- CS 775 Advanced Pattern Recognition
- CS 782 Advanced Machine Learning
- CS 787 Decision Guidance Systems
- DAEN 698 Data Analytics Research Project
- INF 623 Web Search Engines and Recommender Systems
- INF 740 Database Programming for the World Wide Web
- SYST 664 Bayesian Inference and Decision Theory

Total Credits 15

1 Note: all prerequisites must be met.

Concentration in Financial Engineering (FNNE)
The concentration emphasizes both analytical and practical aspects of financial and econometric data analytics. Students are expected to demonstrate proficiency in several quantitative modeling disciplines. Students are also expected to understand issues relevant to practical aspects of investment and hedging decision making, derivative valuation, and risk analysis. The students will learn the techniques to analyze large financial and economic data to derive meaningful knowledge, which will be useful for developing effective business and risk mitigation strategies and making sound financial, marketing, and investment decisions. The concentration prepares students for careers in business analytics with a focus on practical applications in financial operations, investment, and risk mitigation strategy development.

Additional Admission Requirements
Students entering the program should have completed the following George Mason undergraduate courses or their equivalents:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Concentration in Health Data Analytics (HDAN)

Required Concentration Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 720</td>
<td>Health Data Integration</td>
<td>3</td>
</tr>
<tr>
<td>HAP 725</td>
<td>Statistical Process Control in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HAP 780</td>
<td>Data Mining in Health Care</td>
<td>3</td>
</tr>
<tr>
<td>OR 880</td>
<td>Advanced Health Data Mining</td>
<td></td>
</tr>
</tbody>
</table>

Select two from the following: 6

- DAEN 698 Data Analytics Research Project
- HAP 671 Health Care Databases
- HAP 719 Advanced Statistics in Health Services Research I
- HAP 730 Health Care Decision Analysis or HAP 770 Medical Decision Making and Decision Support Systems
- HAP 819 Advanced Statistics in Health Services Research II
- HAP 823 Comparative Effectiveness Analysis using Observational Data

Total Credits 15

Concentration in the Internet of Things (INOT)
Data Analytics is driven by sensors that collect the staggering amount of data that exist today. The Internet of Things (IoT) is expanding, at a geometric level, the number of devices that collect, forward, and offer data for analysis. IOTA looks at Data Analytics from the perspective of IoT and sensors. Analog and digital sensing design and deployment, hardware options, power consumption, security, sampling and
quantization, Fourier transform, time analysis, and synchronization are topics covered in this concentration.

**Additional Admission Requirements**

Students entering the program should have completed the following George Mason undergraduate courses or their equivalents:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 222</td>
<td>Computer Programming for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>ECE 220</td>
<td>Continuous-Time Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 301</td>
<td>Digital Electronics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>

**Required Concentration Courses**

Select five courses from the following: 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 508</td>
<td>Internet of Things</td>
<td>3</td>
</tr>
<tr>
<td>ECE 510</td>
<td>Real-Time Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ECE 527</td>
<td>Learning From Data</td>
<td>3</td>
</tr>
<tr>
<td>ECE 530</td>
<td>Sensor Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECE 535</td>
<td>Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 612</td>
<td>Real-Time Embedded Systems</td>
<td>3</td>
</tr>
<tr>
<td>DAEN 698</td>
<td>Data Analytics Research Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

1 Students may also choose to take DAEN 698 as an elective.

**Concentration in Predictive Analytics (PRAN)**

The ultimate goal of analytics of Big Data is to derive value by suggesting effective actions for the future. Predictive analytics focuses on the methods for deciding on the best course of action, taken into account possible constraints and risks. The concentration will provide students with skills that drive effective decision making and optimization. Students will learn the techniques to analyze both structured and unstructured data to derive meaningful knowledge, which will be useful for developing effective strategies and making optimal decisions.

The concentration emphasizes both analytical and practical aspects of predictive analytics. Students are expected to master the practical aspects of modeling and methods for optimization. Students are also expected to demonstrate proficiency in decision making, design of decision support systems, and risk analysis. The program prepares students for careers in big data analytics with a focus on strategic decision making in practical applications including financial engineering, health care, transportation, and intelligence.

**Additional Admission Requirements**

Students entering the program should have completed the following George Mason undergraduate courses or their equivalents:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Required Concentration Courses**

Select five courses from the following: 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 604</td>
<td>Practical Optimization</td>
<td>3</td>
</tr>
<tr>
<td>SYST 542</td>
<td>Decision Support Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 568</td>
<td>Applied Predictive Analytics</td>
<td>3</td>
</tr>
<tr>
<td>or OR 568</td>
<td>Applied Predictive Analytics</td>
<td>3</td>
</tr>
<tr>
<td>SYST 573</td>
<td>Decision and Risk Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAEN 698</td>
<td>Data Analytics Research Project</td>
<td>3</td>
</tr>
<tr>
<td>OR 603</td>
<td>Sports Analytics</td>
<td>3</td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td>3</td>
</tr>
<tr>
<td>SYST 663</td>
<td>Statistical Graphics and Data Exploration I</td>
<td>3</td>
</tr>
<tr>
<td>SYST 508</td>
<td>Complex Systems Engineering Management</td>
<td>3</td>
</tr>
<tr>
<td>SYST 584</td>
<td>Heterogeneous Data Fusion</td>
<td>3</td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td>3</td>
</tr>
<tr>
<td>SYST 670</td>
<td>Metaheuristics for Optimization</td>
<td>3</td>
</tr>
<tr>
<td>or OR 670</td>
<td>Metaheuristics for Optimization</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

**Concentration in Statistical Analytics (STLA)**

Provides students with skills necessary for gaining insight from data. Enables students to evaluate large data-sets from a rigorous statistical perspective, including theoretical, computational, and analytical techniques. Emphasis will be placed on developing deep analytical talent in the two areas of statistical modeling and data visualization. “Big Data” are well-known to encompass high levels of uncertainty and complex interactions and relationships. To gain knowledge from these data and hence inform decisions, elucidation of the core interactions and relationships must be done in a manner that acknowledges uncertainties in order to both minimize false signals and maximize true discoveries. Statistical modeling does exactly this – it accounts for uncertainty while identifying relationships. Visualization is often a critical component of modeling, but visualization also stands alone as an important tool for presentation of information, decision analysis, and process improvement.

**Additional Admission Requirements**

Students entering the program should have completed the following George Mason undergraduate courses or their equivalents:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 351</td>
<td>Probability</td>
<td>3</td>
</tr>
</tbody>
</table>

**Required Concentration Courses**

Select five courses from the following: 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAEN 698</td>
<td>Data Analytics Research Project</td>
<td>3</td>
</tr>
<tr>
<td>STAT 654</td>
<td>Applied Statistics II</td>
<td>3</td>
</tr>
</tbody>
</table>

And four courses from the following: 12
Accelerated Master's

Applied Computer Science, BS/Data Analytics Engineering, Accelerated MS

Overview
Highly-qualified students in the Applied Computer Science, BS (p. 1050) have the option of obtaining an accelerated Data Analytics Engineering, MS (p. 1019).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Applied Computer Science, BS (p. 1050) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students must register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students in all concentrations of the Applied Computer Science, BS program must register for:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
For students in the Computer Game Design and Geography concentrations of the Applied Computer Science, BS (p. 1050) program, one of the 500 level courses will count as an elective towards their undergraduate degree.

Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Bioengineering, BS/Data Analytics Engineering, Accelerated MS

Overview
Highly-qualified students in the Bioengineering, BS (p. 1032) have the option of obtaining an accelerated Data Analytics Engineering, MS (p. 1019) with a concentration in Bioengineering.

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Bioengineering, BS (p. 1032) program may apply to this option if they have earned 95 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 222 Computer Programming for Engineers and BENG 320 Bioengineering Signals and Systems. Criteria for admission are identical to criteria for admission to the Bioengineering concentration of the Data Analytics Engineering, MS (p. 1019) program.

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for 6 credits of 500-level basic courses in place of the corresponding BENG 400-level courses required for the undergraduate degree requirements. Specifically, students must register for:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
For students in the Computer Game Design and Geography concentrations of the Applied Computer Science, BS (p. 1050) program, one of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 501</td>
<td>Bioengineering Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining (in place of BENG 420)</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>
Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Computer Science, BS/Data Analytics Engineering, Accelerated MS

Overview
Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Data Analytics Engineering, MS (p. 1019).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Students in the Computer Science, BS (p. 1057) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models, and CS 367 Computer Systems and Programming.

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following courses in place of the corresponding 400-level courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Note:
Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Statistics, BS/Data Analytics Engineering, Accelerated MS

Overview
Highly-qualified students in the Statistics, BS (p. 1146) have the option of applying to the accelerated Data Analytics Engineering, MS (p. 1019) program.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Students in the Statistics, BS (p. 1146) program may apply to the accelerated Data Analytics Engineering, MS (p. 1019) program if they have earned 90 undergraduate credits with an overall GPA of at least 3.30.

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with six credits overlap chosen from the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
<td></td>
</tr>
<tr>
<td>or CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models (Credit may not be received for both OR 441 and OR 541.)</td>
<td>3</td>
</tr>
<tr>
<td>or OR 531</td>
<td>Analytics and Decision Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 515</td>
<td>Applied Statistics and Visualization for Analytics</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 554</td>
<td>Applied Statistics I</td>
<td></td>
</tr>
</tbody>
</table>

All graduate course prerequisites must be completed prior to enrollment. Each 500-level course must be completed with a grade of B or better to apply toward the MS program. The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. The graduate courses may be counted as Technical Electives toward the Statistics, BS (p. 1146) program requirements, with approval of Statistics Department undergraduate coordinator.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.
Systems Engineering, BS/Data Analytics Engineering, Accelerated MS

Overview

Qualified undergraduate students in the Systems Engineering, BS (p. 1164) have the option of obtaining an accelerated Data Analytics Engineering, MS (p. 1019).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in systems engineering may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30.

For the predictive analytics concentration, students must submit evidence of:

- Satisfactory completion of courses in calculus, applied probability and statistics, and a scientific programming language.
- Familiarity with analytical modeling software, such as spreadsheets or math packages.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BS and MS programs, with six credits overlap chosen from the courses in the following table. For BS candidates, these graduate courses replace the corresponding undergraduate courses listed. The undergraduate version of these courses may not be applied toward the MS degree.

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 473</td>
<td>SYST 573</td>
<td>Credit may not be received for both courses.</td>
</tr>
<tr>
<td>OR 441</td>
<td>OR 541</td>
<td>Credit may not be received for both courses.</td>
</tr>
<tr>
<td>SYST 438</td>
<td>SYST 538</td>
<td>This course applies to only certain concentrations; Credit may not be received for both courses.</td>
</tr>
<tr>
<td>SYST 468</td>
<td>SYST 568</td>
<td>This course applies to only certain concentrations; Credit may not be received for both courses.</td>
</tr>
<tr>
<td>SYST 488</td>
<td>SYST 588</td>
<td>This course applies to only certain concentrations; Credit may not be received for both courses.</td>
</tr>
</tbody>
</table>

OR 541 Operations Research: Deterministic Models will substitute for the OR 531 Analytics and Decision Analysis core requirement in the MS DAE program. Students are not permitted to take OR 531 Analytics and Decision Analysis.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Data Analytics Graduate Certificate

Banner Code: VS-CERG-DNIC

Phone: 703-993-6269
Email: datamine@gmu.edu

Admissions & Policies

Admissions

Applicants should have an undergraduate degree from an accredited institution, with a GPA of at least 3.00 in their last 60 credits of study. While no specific undergraduate degree is required, a background in engineering, business, computer science, math, or information technology is desirable; alternatively, strong work experience with data or analytics may be used. Current graduate students in the Volgenau School of Engineering and the School of Business (p. 888) can elect this certificate with the Graduate Secondary Certificate Program Application from the Office of the University Registrar (http://registrar.gmu.edu).

Requirements

Certificate Requirements

Total credits: 12

This certificate may be pursued on a part-time basis only.

Coursework

Students must achieve a total GPA of at least 3.00, with no more than three credits of a grade of C from the following courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 580</td>
<td>Analytics: Big Data to Information</td>
<td>3</td>
</tr>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
<td>3</td>
</tr>
<tr>
<td>OR 531</td>
<td>Analytics and Decision Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 515</td>
<td>Applied Statistics and Visualization for Analytics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Information Technology, PhD

Banner Code: VS-PHD-INFT

2400 Nguyen Engineering Building
Admissions & Policies

Admissions Requirements

Students are selected on the basis of scholarship and potential from among applicants with appropriate degrees from institutions of high standing.

Generally, a background in an information technology-related area, such as engineering, computer science, operations research, mathematics, and physical sciences is required for admission to the doctoral program. However, in some instances, well-qualified students without a clearly related prior degree (i.e., MS in Information Technology Management, MBA) may be offered admission. Most successful applicants already have a Master’s degree, however exceptionally qualified individuals without an MS may be accepted, but will be required to take more courses.

An undergraduate GPA of 3.00 and a graduate GPA of 3.50 are basic requirements for applicants. Applicants are required to submit: an online application for admission, undergraduate and graduate transcripts from previous colleges and universities, GRE test results, three letters of reference (preferably from college instructors), a résumé, a personal goal statement, and to identify research areas of interest. Foreign transcripts must be translated and evaluated (course-by-course preferred) by a member of the NACES Membership. Evaluations can be also be done by George Mason University, at no extra cost to the applicant; however, this typically adds 6-8 weeks to the application processing time. Please review George Mason University’s Policy on International Transcript Submission (p. 71). An applicant’s entire background is examined before an admission decision is made.

To ensure a common ground of fundamentals, students should have a background in such topics as calculus, differential equations, linear algebra, discrete structures, probability, and statistics. In addition, students entering the PhD in Information Technology Program must have a sound working knowledge in computing as demonstrated by examples of programs or applications developed and tested in at least one high level programming language environment. Because much of the coursework within this program requires computational proficiency, experience with a variety of languages and computer hardware is useful as is an understanding of computer architecture. Highly-qualified students who do not present evidence of appropriate coursework may be admitted and then required to take appropriate articulation courses.

Those who wish to be considered for Mason’s Presidential Scholarship, which provides a stipend and tuition support for three years, must be full-time students, with a minimum GPA of 3.5 or higher in their most recently earned degree, and submit GRE scores with a combined math and verbal score of 1200 on exams taken prior to August 1, 2011; combined score of 310 on the new revised GRE scale for exams taken August 1, 2011 and beyond. Scores must have been earned within the last five years. Only one Presidential Scholarship is awarded per PhD program per year.

Policies

The general doctoral requirements (p. 90) of Mason apply to this program.

Reduction of Credit

Students must complete a minimum of 72 graduate credits, which may be reduced by a maximum of 30 credits from an approved and completed master’s degree. Reduction of credit requires the approval of the program director/dean or designee of the school. They determine whether the credits are eligible for reduction of credit and applicable to the degree program and the number of credits to be reduced.

Program Requirements

Information Technology doctoral candidates must earn a minimum of 72 graduate credits. The program is made up of a breadth requirement (assessed via qualifying exams) and specialized coursework (assessed via the comprehensive exam), followed by preparation of a dissertation proposal, an original research project, and final defense. To advance to candidacy, students must complete all coursework, pass the qualifying and comprehensive examinations, and defend a dissertation proposal.

Requirements

Degree Requirements

Total credits: minimum 72

The degree plan outlined here is based on a student who receives a full 30 credit reduction. Students who do not receive a full credit reduction will be required to choose additional credits in consultation with their advisors.

Plan of Study

Students are strongly encouraged to select a concentration area. However, the ability exists to progress with only a plan of study. Students who declare a concentration will have the concentration noted on their transcript. The plan of study is a well-defined set of advanced courses in a focused area. Successful completion of this requirement should enable the student to do basic or applied research in a significant contemporary area in IT.

The 18 credits of graduate-level coursework must fulfill the following requirements:

- Coursework must be independent of the courses students take to prepare for the qualifying exams.
- Courses that cannot be included in any plan of study are any INFS 500-level courses; certain AIT courses; OR 540 Management Science;
STAT 535 Analysis of Experimental Data; and SYST 500 Quantitative Foundations for Systems Engineering. Exceptions must be approved in advance by the senior associate dean.

- At least 12 of the 18 credits must be in courses numbered 700 or higher, and these 12 credits cannot include directed reading, project, or thesis courses.
- A cumulative GPA of 3.50 is required in courses taken in the plan of study.

### Concentrations

#### Available Concentrations

- Digital Forensics (DFOR) (p. 1028)
- Information Sciences and Technology (ISTC) (p. 1028)
- Information Security and Assurance (ISA) (p. 1028)
- Information Systems (ISYS) (p. 1029)
- Mechanical Engineering (ME) (p. 1029)
- Software Engineering (SWE) (p. 1029)

### Digital Forensics (DFOR)

**Code** | **Title** | **Credits**
--- | --- | ---
AIT 701 | Cyber Security: Emerging Threats and Countermeasures | 18
CFRS 661 | Digital Media Forensics |
CFRS 663 | Operations of Intrusion Detection for Forensics |
CFRS 664 | Incident Response Forensics |
CFRS 730 | Forensic Deep Packet Inspection |
CFRS 760 | Legal and Ethical Issues in IT |
CFRS 761 | Malware Reverse Engineering |
CFRS 762 | Mobile Device Forensics |
CFRS 763 | Registry Forensics - Windows |
CFRS 764 | Mac Forensics |
CFRS 767 | Penetration Testing in Computer Forensics |
CFRS 768 | Digital Warfare |
CFRS 769 | Anti-Forensics |
CFRS 770 | Fraud and Forensics in Accounting |
CFRS 771 | Digital Forensic Profiling |
CFRS 772 | Forensic Artifact Extraction |
CFRS 773 | Mobile Application Forensics and Analysis |
CFRS 775 | Kernel Forensics and Analysis |
CFRS 780 | Advanced Topics in Computer Forensics |
CFRS 790 | Advanced Computer Forensics |
ECE 611 | Advanced Computer Architecture |
ECE 645 | Computer Arithmetic |
ECE 646 | Applied Cryptography |
ECE 746 | Advanced Applied Cryptography |
ISA 650 | Security Policy |
ISA 652 | Security Audit and Compliance Testing |
ISA 656 | Network Security |
ISA 674 | Intrusion Detection |
ISA 785 | Research in Digital Forensics | 1
IT 796 | Directed Reading and Research | 1

Total Credits | 18

1 Can only be taken once for PhD credit in the digital forensics concentration.

**Note:**

Where appropriate and with doctoral advisor approval, a maximum of two emphasis courses may be substituted with relevant courses from other Volgenau School departments. The student’s overall coursework must satisfy the University requirement for the PhD in Information Technology.

### Information Sciences and Technology (ISTC)

**Code** | **Title** | **Credits**
--- | --- | ---
AIT 582 | Metadata Analytics for Big Data | 18
AIT 614 | Big Data Essentials |
AIT 624 | Knowledge Mining from Big-Data |
AIT 701 | Cyber Security: Emerging Threats and Countermeasures |
AIT 711 | Rapid Development of Scalable Applications |
AIT 716 | Human Computer Interaction |
AIT 724 | Data Analytics in Social Media |
AIT 734 | Advanced Web Analytics Using Semantics |

Other VSE courses with the approval of an advisor or program director.

Total Credits | 18

### Information Security and Assurance (ISA)

**Code** | **Title** | **Credits**
--- | --- | ---
ISA 673 | Operating Systems Security | 18
ISA 674 | Intrusion Detection |
ISA 681 | Secure Software Design and Programming |
ISA 697 | Topics in Information Security |
ISA 763 | Security Protocol Analysis |
ISA 764 | Security Experimentation |
ISA 796 | Directed Readings in Information Security |
ISA 862 | Models for Computer Security |
ISA 863 | Advanced Topics in Computer Security |
CS 700 | Research Methodology in Computer Science |

Any CS, INFS or SWE course numbered 700 or higher, subject to the approval of the student’s academic advisor.

Total Credits | 18
Information Systems (ISYS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFS 623</td>
<td>Web Search Engines and Recommender Systems</td>
<td>12</td>
</tr>
<tr>
<td>INFS 740</td>
<td>Database Programming for the World Wide Web</td>
<td></td>
</tr>
<tr>
<td>INFS 760</td>
<td>Advanced Database Management</td>
<td></td>
</tr>
<tr>
<td>INFS 770</td>
<td>Knowledge Management for E-Business</td>
<td></td>
</tr>
<tr>
<td>INFS 772</td>
<td>Intelligent Agents and the Semantic Web</td>
<td></td>
</tr>
<tr>
<td>INFS 774</td>
<td>Enterprise Architecture</td>
<td></td>
</tr>
<tr>
<td>INFS 796</td>
<td>Directed Readings in Information Systems</td>
<td></td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td></td>
</tr>
<tr>
<td>ISA 797</td>
<td>Advanced Topics in Information Security</td>
<td></td>
</tr>
</tbody>
</table>

Select the remaining 6 credits from SWE and CS courses in Software Engineering and Computer Science.¹

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 721</td>
<td>Reusable Software Architectures</td>
<td></td>
</tr>
<tr>
<td>SWE 763</td>
<td>Software Engineering Experimentation</td>
<td></td>
</tr>
<tr>
<td>SWE 796</td>
<td>Directed Readings in Software Engineering</td>
<td></td>
</tr>
<tr>
<td>SWE 821</td>
<td>Software Engineering Seminar</td>
<td></td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td></td>
</tr>
<tr>
<td>CS 657</td>
<td>Mining Massive Datasets with MapReduce</td>
<td></td>
</tr>
<tr>
<td>CS 688</td>
<td>Machine Learning</td>
<td></td>
</tr>
<tr>
<td>CS 700</td>
<td>Research Methodology in Computer Science</td>
<td></td>
</tr>
<tr>
<td>CS 782</td>
<td>Advanced Machine Learning</td>
<td></td>
</tr>
<tr>
<td>CS 787</td>
<td>Decision Guidance Systems</td>
<td></td>
</tr>
<tr>
<td>CS 880</td>
<td>Research Topics in Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 811</td>
<td>Research Topics in Machine Learning and Inference</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

Software Engineering (SWE)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 763</td>
<td>Software Engineering Experimentation</td>
<td>12</td>
</tr>
<tr>
<td>or CS 700</td>
<td>Research Methodology in Computer Science</td>
<td></td>
</tr>
<tr>
<td>SWE 721</td>
<td>Reusable Software Architectures</td>
<td></td>
</tr>
<tr>
<td>SWE 737</td>
<td>Advanced Software Testing</td>
<td></td>
</tr>
<tr>
<td>SWE 760</td>
<td>Software Analysis and Design of Real-Time Systems</td>
<td></td>
</tr>
<tr>
<td>SWE 795</td>
<td>Advanced Topics in Software Engineering</td>
<td></td>
</tr>
<tr>
<td>SWE 796</td>
<td>Directed Readings in Software Engineering</td>
<td></td>
</tr>
<tr>
<td>SWE 798</td>
<td>Research Project</td>
<td></td>
</tr>
<tr>
<td>SWE 825</td>
<td>Special Topics in Web-Based Software</td>
<td></td>
</tr>
</tbody>
</table>

Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td></td>
</tr>
<tr>
<td>SWE 620</td>
<td>Software Requirements Analysis and Specification</td>
<td></td>
</tr>
<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td></td>
</tr>
<tr>
<td>SWE 622</td>
<td>Distributed Software Engineering</td>
<td></td>
</tr>
<tr>
<td>SWE 631</td>
<td>Software Design Patterns</td>
<td></td>
</tr>
<tr>
<td>SWE 632</td>
<td>User Interface Design and Development</td>
<td></td>
</tr>
<tr>
<td>SWE 637</td>
<td>Software Testing</td>
<td></td>
</tr>
<tr>
<td>SWE 642</td>
<td>Software Engineering for the World Wide Web</td>
<td></td>
</tr>
<tr>
<td>SWE 645</td>
<td>Component-Based Software Development</td>
<td></td>
</tr>
<tr>
<td>SWE 681</td>
<td>Secure Software Design and Programming</td>
<td></td>
</tr>
<tr>
<td>CS 706</td>
<td>Concurrent Software Systems</td>
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<tr>
<td>INFS 740</td>
<td>Database Programming for the World Wide Web</td>
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<tr>
<td>INFS 760</td>
<td>Advanced Database Management</td>
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<tr>
<td>INFS 770</td>
<td>Knowledge Management for E-Business</td>
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</tr>
<tr>
<td>INFS 797</td>
<td>Advanced Topics in Information Systems</td>
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<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
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<tr>
<td>ISA 656</td>
<td>Network Security</td>
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<tr>
<td>ISA 763</td>
<td>Security Protocol Analysis</td>
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<tr>
<td>ISA 764</td>
<td>Security Experimentation</td>
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</tr>
<tr>
<td>ISA 862</td>
<td>Models for Computer Security</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 18

Breadth Requirement

To satisfy the breadth requirements of the PhD INFT, a student must demonstrate his/her proficiency in the foundational knowledge specific to her/his program of study. This is satisfied through completion of two Fundamental Knowledge courses, and two Qualifying Exams. The Fundamental Knowledge courses and the Qualifying Exams are listed in the study guide maintained by the Volgenau School of Engineering.
(VSE) Graduate Programs administrative office. Selection of the two Fundamental Knowledge courses and the two Qualifying Exams must be approved by the student's PhD advisor and submitted to the VSE Graduate Programs administrative office.

Time limits: Students who enter the program with a 24-30 credit reduction from a prior Master's degree must satisfy all breadth requirements no later than twelve months following the end of their fourth semester in the program. Students who enter the program with a reduction of less than 24 credits must satisfy all breadth requirements no later than twelve months following the end of their sixth semester in the program. In both instances, these time limits include all attempts at the Fundamental Knowledge courses and the Qualifying Exams. Time limits apply to all PhD INFT students, regardless of their part-time or full-time study status. Failure to satisfy all breadth requirements by the specified time is cause for termination from the PhD INFT program.

Fundamental Knowledge course requirement: Students are required to complete two Fundamental Knowledge courses within the first 24 months of their PhD enrollment, regardless of their part-time or full-time status and regardless of credit reductions from previous coursework. Fundamental Knowledge courses are listed in the study guide maintained by the VSE Graduate Programs administrative office. Fundamental Knowledge courses must be approved by the advisor and must be specific to the student's program of study, and must be submitted to the VSE Graduate Programs administrative office. These courses can be used as credit toward the student's plan of study, but will not count toward his/her 700 level minimum requirement.

Students must earn a grade of A- or better in both Fundamental Knowledge courses on their first attempt to satisfy this component of the breadth requirement. Students failing to earn a grade of A- or better on their first attempt in one or both Fundamental Knowledge courses are required to take and pass in one attempt, supplementary Qualifying Exams. Supplementary Qualifying Exams must cover the bodies of fundamental knowledge associated with the Fundamental Knowledge courses in which they earned a grade of less than A-. Supplementary Qualifying Exams are in addition to the two Qualifying Exams required and described above. Students must pass supplementary Qualifying Exams in one attempt only. Failure to satisfy all breadth requirements, including all Qualifying Exams, within the period defined above under Time Limits, is cause for termination from the PhD INFT program.

Qualifying Exam requirement: Students satisfying the Fundamental Knowledge course requirement described above are required to take and pass two Qualifying Exams within the period defined above under Time Limits. Qualifying Exams are listed in the study guide maintained by the VSE Graduate Programs administrative office. Selection of Qualifying Exams must be approved by the PhD advisor; must be specific to the student's program of study; must not duplicate the bodies of knowledge of the student's Fundamental Knowledge courses described above; and must be submitted to the VSE Graduate Programs administrative office.

Qualifying Exams are offered twice a year just before the fall and spring semesters. Each exam is allocated two hours and graded on a pass or fail basis using a double blind procedure. Students must take all required Qualifying Exams in their first attempt. Students failing one or both of their Qualifying Exams on the first attempt are required to retake the Qualifying Exams they did not pass, the next time the Qualifying Exams are offered. Students failing Qualifying Exams may not subsequently satisfy the breadth requirement by completing Fundamental Knowledge courses covering the same bodies of knowledge. Failure to satisfy all breadth requirements, including the Qualifying Exams, within the period defined above under Time Limits, is cause for termination from the PhD INFT program.

Students failing to earn a grade of A- or better in one or both Fundamental Knowledge courses are required to take and pass supplementary Qualifying Exams in the bodies of knowledge covered by the Fundamental Knowledge courses in which they earned a grade of less than A-. Supplementary Qualifying Exams are in addition to the two Qualifying Exams described above. Students must pass supplementary Qualifying Exams in one attempt only. Failure to satisfy all breadth requirements, including all Qualifying Exams, within the period defined above under Time Limits, is cause for termination from the PhD INFT program.

Dissertation Research

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 990</td>
<td>Dissertation Topic Presentation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Select 23 additional credits from the following:</td>
<td>23</td>
</tr>
<tr>
<td>IT 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>IT 999</td>
<td>Doctoral Dissertation (minimum 12 credits required)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 24

Doctoral Supervisory Committee

On admission to the program, students are assigned a temporary academic advisor. Students are responsible for working with the temporary advisor until they choose a dissertation director and establish a doctoral supervisory committee.

The doctoral supervisory committee includes the dissertation director, who must be a member of the Mason graduate faculty, and at least three other people from the Mason graduate faculty. The dissertation director and chair of a PhD in INFT dissertation committee must have at least a 50% appointment in the Volgenau School. This rule does not apply to a co-director, provided that the chair and other co-director satisfies the “at least 50% rule.” At least three committee members must be from the Volgenau School, and at least two of the departments of the Volgenau School must be represented on this committee.

In addition, industrial representatives and faculty members from departments outside the school are highly desirable, but not required, on the committee. The doctoral supervisory committee administers the comprehensive exam, dissertation proposal presentation, and the dissertation predefense and defense. Permission for the comprehensive exam and dissertation defense are requested from the Volgenau School associate dean on the basis of a written request and plan that has been approved by the supervisory committee.

Comprehensive Exam

The comprehensive exam is an oral exam taken after students have satisfactorily completed all coursework requirements in their approved plan of study. To initiate the exam process, the student meets with the dissertation advisor to prepare a permission form, which has to be approved by the entire dissertation supervisory committee one month prior to the exam, to be forwarded to the associate dean for final approval. The permission form must be submitted with:

1. a one page description of the intended area of research; and
2. a reading list on which the student will be examined.
Dissertation Proposal Presentation

Near the end of the coursework, doctoral students prepare a written dissertation proposal to present to the doctoral supervisory committee. The proposal must be delivered to the doctoral supervisory committee at least two weeks before the presentation. Students should enroll in IT 998 Doctoral Dissertation Proposal to complete this effort (note: students must pass the qualifying exams before enrolling in IT 998 Doctoral Dissertation Proposal). During the term the student expects to present the dissertation proposal to the committee (or perhaps the prior term), the student is should enroll in IT 990 Dissertation Topic Presentation. The dissertation proposal presentation must be at least one week after passing the comprehensive exam. After successfully completing the dissertation-proposal requirement, the student is formally admitted as a candidate for the PhD degree. The application for candidacy is submitted to the associate dean on a standard form.

Dissertation and Final Defense

With the concurrence of the dissertation supervisory committee, students proceed with the doctoral research, during which time they must be continuously enrolled in IT 999 Doctoral Dissertation. When the central portions of the research have been completed to the point that students are able to describe the original contributions of the dissertation effort, they submit the written dissertation to the committee and schedule an oral predefense to the committee. The predefense is to be held no sooner than one month after members of the committee have copies of the dissertation. Once the committee believes the student is ready, a final public oral defense may be scheduled no sooner than one month after the conclusion of the predefense so that the announcement is posted for at least two weeks. The entire dissertation committee and the associate dean must be present at the defense, unless an exception is approved by the associate dean in advance of the defense.

Following satisfactory evaluation of the oral defense of the dissertation by the committee, the student must prepare, with supervision from the dissertation director, a final publishable dissertation that represents a definitive contribution to knowledge in IT. If the candidate successfully defends the dissertation, the dissertation committee recommends that the final form of the dissertation be completed and the Volgenau School faculty and the graduate faculty of Mason accept the candidate for the PhD degree.

If the student fails to successfully defend the dissertation, the student may request a second defense, following the same procedures as for the initial defense. There is no time limit for this request other than general time limits for the doctoral degree. An additional predefense is not required, but students are strongly advised to consult with the committee before scheduling a second defense. If the student fails on the second attempt to defend the dissertation, the student will be terminated from the program.

Management of Secure Information Systems, MS (VSE)

Banner Code: BU-MS-MSIS

Phone: 703-993-1880
Email: cyber@gmu.edu

The Management of Secure Information Systems MS, an executive multidisciplinary program offered by the Volgenau School of Engineering, the School of Business, and the Schar School of Policy and Government; prepares professionals for the challenges of modern computerized information systems that have become increasingly complex and vulnerable to cyber-attacks, resulting in a significant number of government regulations. Consequently, those responsible for the safe, secure, and efficient operation of such systems need to grasp their technical aspects and be familiar with both the principles of management and the public policy impact of regulatory and organizational decisions.

The program is run as a cohort with no electives. The entire program has a duration of 16 months including about seven days of study abroad, which is included in the tuition.

Admissions & Policies

Admissions

All students must have graduate standing. Non-degree student status is not available.

Full eligibility and admission requirements can be viewed online (http://business.gmu.edu/cyber-security-degree/admissions).

Requirements

Degree Requirements

Total credits: 36

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSEC 510</td>
<td>Foundations of Cyber Security</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 511</td>
<td>Security Practices in the Enterprise</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 520</td>
<td>Networking Principles</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 620</td>
<td>Networking Security</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 630</td>
<td>Secure Information System Governance, Regulation, and Compliance</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 641</td>
<td>Enterprise Security Threats</td>
<td>1</td>
</tr>
<tr>
<td>MSEC 642</td>
<td>Enterprise Security Technologies</td>
<td>2</td>
</tr>
<tr>
<td>MSEC 650</td>
<td>Seminar: Enterprise Security Case Studies</td>
<td>1</td>
</tr>
<tr>
<td>PUBP 610</td>
<td>Organizations, Management, and Work: Theory and Practice</td>
<td>2</td>
</tr>
<tr>
<td>PUBP 611</td>
<td>Critical Infrastructure Protection in Theory, Policy and Practice</td>
<td>2</td>
</tr>
<tr>
<td>MSIS 611</td>
<td>Leadership and Change Management</td>
<td>2</td>
</tr>
</tbody>
</table>
Department of Bioengineering

Phone: 703-993-5846
Email: bioeng@gmu.edu
Website: bioengineering.gmu.edu

Bioengineering involves the application of engineering tools and concepts to solve problems in biology or medicine. The impact of engineering on biomedicine is wide ranging, from advanced biomedical imaging technologies to discovering new diagnostic devices and targeted therapeutics. With an aging population, the growing costs of health care, and the impact of novel technology to fundamental understanding in biosciences, the demand for bioengineers is growing. This program provides students with a solid foundation in engineering while offering in-depth exposure to the life sciences. Bioengineering faculty members collaborate with colleagues at George Mason University and nearby institutions including Inova Health Center, and federal laboratories such as the Naval Research Laboratory, the National Institutes of Health Clinical Center, and the National Institute of Standards and Technology. Research areas include:

- biomechanics
- biomedical imaging
- neuroengineering
- computational neuroscience
- microfabricated devices
- nanomedicines
- biomaterials
- tissue engineering

Available Programs

**Bioengineering, BS**
The BS in Bioengineering is a challenging multidisciplinary training program with the goal of enabling graduates to be competitive for an entry-level position in the biomedical industry or to continue their education in graduate school or medical school. The curriculum provides a strong background in the biological and engineering fundamentals of bioengineering as well as upper level courses in areas of biomedical measurements, biomedical systems modeling, and bioinformatics. The department offers six concentrations: Bioengineering Healthcare Informatics, Bioengineering Prehealth, Biomaterial and Nanomedicine, Biomedical Imaging and Devices, Computational Biomedical Engineering, Neurotechnology and Computational Neuroscience. In addition the Bioengineering, BS program offers an Honors Program to outstanding students. Entry is by invitation and based on academic performance achieved at Mason.

**Bioengineering, MS**
The Bioengineering, MS prepares students for research and professional practice in bioengineering and related fields. This program comprises four core areas: biomechanics, biomaterials, biomedical imaging, and neuroengineering while offering three different options. Students can choose to focus their graduate work toward a career in academia (thesis option), or in industry (practicum or coursework option).

**Bioengineering, PhD**
The Bioengineering, PhD is a research-intensive, multifaceted program which is comprised of four different concentrations. Students can choose to focus their graduate work in nanoscale bioengineering, neuroengineering, biomedical imaging or data-driven biomechanical modeling.

**Faculty**

**Professors**
Ascoli, Blackwell, Buschmann (chair), Cebral, Hoemann, Sikdar,

**Associate Professors**
Harris-Love, Ikonomidou, Salvador Morales, Peixoto, Wei

**Assistant Professors**
Agrawal, Bray, Chitnis, Ross, Veneziano

**Affiliated Professors**
Cohen, Cortes, Cressman, Grahling, Katona, Neville, Pancrazio, Pritz, Rangwala, Seshaiyer, Shah, Shehu, Shenai, Shobeiri, Thompson, Vora, Wiener

**Programs**

- Bioengineering Minor
- Bioengineering, BS
- Bioengineering, MS
- Bioengineering, PhD

**Bioengineering, BS**
Banner Code: VS-BS-BIOE

Academic Advising
Phone: 703-993-4190
Email: cborke@gmu.edu
Website: https://bioengineering.gmu.edu/academics/bachelor-science-bioengineering

Bioengineering, also referred to as biomedical engineering, is the application of engineering tools and approaches to solve problems in biology and medicine. It is a broad and growing field that draws upon rapid advances in technology and computation, as well as, on unprecedented growth in basic biological understanding.
This program provides i) a scientific foundation in math, physics, biology, chemistry and physiology; ii) broad introductions to bioengineering technology platforms of medical imaging, devices, computational biomedical engineering, neurotechnology, biomaterials and nanomedicine followed by a deepening of knowledge in at least one of these areas through a chosen concentration; and iii) translational courses showing how new technologies can be implemented in clinical medicine and be commercialized by industry partners.

Engineering design experiences are built into each year of the curriculum culminating in a senior design project. The impact of engineering, technologies and computer science on biomedicine is immense, and can only be harnessed through integrative multidisciplinary training in Bioengineering. With the growing demand for better health care, the need for bioengineers is expected to be high.

The multidisciplinary training in this field makes graduates competitive for positions in government and in biomedical industry. The BS in Bioengineering also enables students to continue their education in graduate school or medical school.

Accreditation
The bachelor’s program in Bioengineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Program Educational Objectives
Graduates of the Bioengineering bachelor's program are expected within 3-5 years of graduation to:

1. Contribute to the development or application of health-related products or processes that are a benefit to society.
2. Continue their formal education by making demonstrable progress toward an advanced degree or professional development milestone.
3. Communicate and perform effectively as members and/or leaders of multidisciplinary teams.

Concentrations
The concentrations in the BS Bioengineering program are:

- Bioengineering Healthcare Informatics (BHI)
- Bioengineering Prehealth (BMPH)
- Biomaterials and Nanomedicine (BNM)
- Biomedical Imaging and Devices (BMID)
- Computational Biomedical Engineering (CBME)
- Neurotechnology and Computational Neuroscience (NTCN)

Admissions & Policies

Policies
For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

Advising
All Bioengineering students are required to meet with their departmental academic advisor prior to course registration each semester. Students who are considering bioengineering as their major must meet with the Volgenau School of Engineering Coordinator of Undergraduate Advising in 2500 Nguyen Engineering Building.

Change of Major
See Change of Major (p. 1013) for more information.

Writing-Intensive Requirement
Mason’s writing-intensive requirement is satisfied by BENG 360 Biomedical Imaging, in which faculty provide feedback on student writing assignments.

Termination from the Major
No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP.5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

Requirements

Degree Requirements
Total credits: 122-134

Students must complete each BENG, BIOL, CHEM, CS, ECE, ME course presented as part of the required credits for the degree with a grade of C or better.
## Required Courses

### Bioengineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BENG 101</td>
<td>Introduction to Bioengineering</td>
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</tr>
<tr>
<td>BENG 214</td>
<td>Physiology for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>BENG 230</td>
<td>Continuum Biomechanics and Transport I</td>
<td>3</td>
</tr>
<tr>
<td>BENG 240</td>
<td>Biomaterials</td>
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</tr>
<tr>
<td>BENG 241</td>
<td>Biomechanics and Biomaterials Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BENG 320</td>
<td>Bioengineering Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>BENG 330</td>
<td>Computational Methods in Bioengineering</td>
<td>3</td>
</tr>
<tr>
<td>BENG 331</td>
<td>Computational Methods in Bioengineering Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BENG 350</td>
<td>Neural System Designs</td>
<td>3</td>
</tr>
<tr>
<td>BENG 360</td>
<td>Biomedical Imaging</td>
<td>3</td>
</tr>
<tr>
<td>BENG 370</td>
<td>Bioinstrumentation and Devices</td>
<td>3</td>
</tr>
<tr>
<td>BENG 371</td>
<td>Bioinstrumentation and Devices Laboratory</td>
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</tr>
<tr>
<td>BENG 414</td>
<td>Bioengineering Professional Development</td>
<td>1</td>
</tr>
<tr>
<td>BENG 475</td>
<td>Intellectual Property, Regulatory Concepts and Product Development</td>
<td>3</td>
</tr>
<tr>
<td>BENG 492</td>
<td>Senior Advanced Design Project I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>BENG 493</td>
<td>RS: Senior Advanced Design Project II (Mason Core) (p. 142)</td>
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Total Credits: 43

### Biology

<table>
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<tr>
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<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
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Total Credits: 4

### Computer Science

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<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
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</table>

Total Credits: 4

### Mathematics and Statistics

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<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>STAT 350</td>
<td>Introductory Statistics II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 20

1. All students in the Bioengineering program are required to register for the specific section of BIOL 213.

2. All students in the Bioengineering program need a grade of B- or better in MATH 114 and MATH 214, which are a pre-requisite requirement for some BENG courses.

3. All students in the Bioengineering program are required to register for the specific section of MATH 203 that includes a 1-hour recitation with Matlab applications.

## Physics

<table>
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<th>Code</th>
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<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
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<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
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<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
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Total Credits: 8

### Communication

<table>
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<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 3

## Concentrations

### Available Concentrations

- Concentration in Bioengineering Healthcare Informatics (BHI) (p. 1034)
- Concentration in Bioengineering Prehealth (BPH) (p. 1035)
- Concentration in Biomaterials and Nanomedicine (BNM) (p. 1036)
- Concentration in Biomedical Imaging and Devices (BMID) (p. 1036)
- Concentration in Computational Biomedical Engineering (CBME)
- Concentration in Neurotechnology and Computational Neuroscience (NTCN) (p. 1037)

Select one concentration and complete all requirements therein.

## Concentration in Bioengineering Healthcare Informatics (BHI)

### Chemistry

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 271, &amp; CHEM 272</td>
<td>General Chemistry for Engineers Lecture (Mason Core) (p. 142) and General Chemistry for Engineers Lab (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 310</td>
<td>Survey of Organic Chemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

### Social and Behavioral Science

Choose one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 101</td>
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### Biology

**Code**

BIOL 483 General Biochemistry

or CHEM 463 General Biochemistry I

### Chemistry

**Code & CHEM 213** General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142)

**CHEM 212 & CHEM 214** General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142)

**CHEM 313 & CHEM 315** Organic Chemistry I and Organic Chemistry Lab I

**CHEM 314 & CHEM 318** Organic Chemistry II and Organic Chemistry Lab II

### Psychology and Sociology

**Code**

PSYC 100 Basic Concepts in Psychology (Mason Core) (p. 142)

SOCI 101 Introductory Sociology (Mason Core) (p. 142)

### Technical Electives

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Total Credits: 37

Note: Students under the Bioengineering PreHealth Concentration should take BIOL 311 (Genetics) as an additional Biology Technical Elective Course.

### Concentration in Biomaterials and Nanomedicine (BNM)

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**Social and Behavioral Science**

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<tr>
<td>CHEM 271</td>
<td>General Chemistry for Engineers Lecture (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 272</td>
<td>and General Chemistry for Engineers Lab (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CHEM 310</td>
<td>Survey of Organic Chemistry</td>
<td></td>
</tr>
</tbody>
</table>

**Social and Behavioral Science**

Choose one of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>SOCI 101</td>
<td>Introductory Sociology (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Concentration Specialization**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 420</td>
<td>Biomedical Data Analytics</td>
<td></td>
</tr>
<tr>
<td>BENG 430</td>
<td>Continuum Biomechanics and Biotransport II</td>
<td></td>
</tr>
<tr>
<td>BENG 435</td>
<td>Multi-scale Modeling and Simulation in Biomedicine</td>
<td></td>
</tr>
</tbody>
</table>

**Technical Electives**

Select 6 credits from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 390</td>
<td>Engineering Design and Fabrication</td>
<td></td>
</tr>
<tr>
<td>BENG 395</td>
<td>RS: Mentored Research in Bioengineering</td>
<td></td>
</tr>
<tr>
<td>BENG 413</td>
<td>Molecular Engineering Laboratory</td>
<td></td>
</tr>
<tr>
<td>BENG 417</td>
<td>Bioengineering World Health</td>
<td></td>
</tr>
<tr>
<td>BENG 421</td>
<td>Cell and Tissue Engineering</td>
<td></td>
</tr>
<tr>
<td>BENG 426</td>
<td>Neural Engineering</td>
<td></td>
</tr>
<tr>
<td>BENG 429</td>
<td>Mason-Inova Applied Technologies</td>
<td></td>
</tr>
<tr>
<td>BENG 434</td>
<td>Computational Modelling of Neurons and Networks</td>
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</tr>
<tr>
<td>BENG 437</td>
<td>Medical Image Processing</td>
<td></td>
</tr>
<tr>
<td>BENG 438</td>
<td>Advanced Biomedical Imaging</td>
<td></td>
</tr>
<tr>
<td>BENG 441</td>
<td>Nanomedicine and Drug Delivery</td>
<td></td>
</tr>
<tr>
<td>BENG 451</td>
<td>Translation and Entrepreneurship in Bioengineering</td>
<td></td>
</tr>
<tr>
<td>BENG 470</td>
<td>Bioinstrumentation and Devices II</td>
<td></td>
</tr>
<tr>
<td>BENG 487</td>
<td>Neuroinformatics</td>
<td></td>
</tr>
<tr>
<td>BENG 499</td>
<td>Special Topics in Bioengineering</td>
<td></td>
</tr>
<tr>
<td>BENG 501</td>
<td>Bioengineering Research Methods</td>
<td></td>
</tr>
<tr>
<td>BENG 526</td>
<td>Neural Engineering</td>
<td></td>
</tr>
<tr>
<td>BENG 538</td>
<td>Medical Imaging</td>
<td></td>
</tr>
<tr>
<td>BENG 541</td>
<td>Biomaterials</td>
<td></td>
</tr>
<tr>
<td>BENG 550</td>
<td>Advanced Biomechanics</td>
<td></td>
</tr>
</tbody>
</table>

**Concentration in Computational Biomedical Engineering (CBME)**

<table>
<thead>
<tr>
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</thead>
<tbody>
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<td>and General Chemistry for Engineers Lab (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>CHEM 310</td>
<td>Survey of Organic Chemistry</td>
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</tr>
</tbody>
</table>

**Chemistry**

Choose one of the following: 3

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
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</table>

**Concentration in Neurotechnology and Computational Neuroscience (NTCN)**

<table>
<thead>
<tr>
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<tbody>
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<td>&amp; CHEM 272</td>
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<tr>
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<td>Survey of Organic Chemistry</td>
<td></td>
</tr>
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</table>

**Social and Behavioral Science**

Choose one of the following: 3

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<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>Basic Concepts in Psychology (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>
SOCI 101 Introductory Sociology (Mason Core) (p. 142)

ECON 103 Contemporary Microeconomic Principles (Mason Core) (p. 142)

**Concentration Specialization**

BENG 327 Cellular, Neurophysiological, and Pharmacological Neuroscience 3

Select 6 credits from the following: 6

- BENG 426 Neural Engineering
- BENG 429 Mason-Inova Applied Technologies
- BENG 434 Computational Modelling of Neurons and Networks
- BENG 487 Neuroinformatics
- BENG 526 Neural Engineering

**Technical Electives**

Select 6 credits from the following: 6

- BENG 390 Engineering Design and Fabrication
- BENG 395 RS: Mentored Research in Bioengineering
- BENG 413 Molecular Engineering Laboratory
- BENG 417 Bioengineering World Health
- BENG 420 Biomedical Data Analytics
- BENG 421 Cell and Tissue Engineering
- BENG 430 Continuum Biomechanics and Biotransport II
- BENG 435 Multi-scale Modeling and Simulation in Biomedicine
- BENG 437 Medical Image Processing
- BENG 438 Advanced Biomedical Imaging
- BENG 441 Nanomedicine and Drug Delivery
- BENG 451 Translation and Entrepreneurship in Bioengineering
- BENG 470 Bioinstrumentation and Devices II
- BENG 499 Special Topics in Bioengineering
- BENG 501 Bioengineering Research Methods
- BENG 538 Medical Imaging
- BENG 541 Biomaterials
- BENG 550 Advanced Biomechanics

Total Credits: 25

### Additional Mason Core

Students must complete all Mason Core (p. 142) requirements not fulfilled by major requirements. BENG 492 Senior Advanced Design Project I (Mason Core) (p. 142) and BENG 493 RS: Senior Advanced Design Project II (Mason Core) (p. 142) are approved to meet the Synthesis/Capstone requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>15</td>
</tr>
</tbody>
</table>

### Honors

#### Honors in the Major

The Department of Bioengineering offers an Honors Program that creates a community of outstanding scholars in bioengineering who share a commitment to learning, service, and leadership. The Program is based on the bioengineering curriculum, and is distinct from the University Honors Curriculum.

#### Eligibility

Entry to the Honors Program is by invitation, extended to students with a declared major in Bioengineering who have completed a minimum of 30 credit hours at Mason with a minimum cumulative GPA of 3.50 and a minimum GPA of 3.20 in each prior semester.

#### Honors Requirements

The Honors Program is challenging and designed for the highly motivated student with interests in any of the bioengineering concentrations. Honors students must satisfy requirements in addition to those of the normal BS degree in bioengineering, including:

- Successful completion of BENG 395 RS: Mentored Research in Bioengineering
- Six credits must be earned by taking a combination of BENG 5XX/6XX level courses. With permission of the Department of Bioengineering, 5XX/6XX level courses from other Volgenau School of Engineering programs may be considered.

Once admitted to the Honors Program, students must remain in good standing and maintain a minimum cumulative GPA of 3.50 and a minimum GPA of 3.20 in each semester for all courses counting toward the BS degree in bioengineering, maintain continuous enrollment working towards the degree, and abide by the Mason Honor Code.

### Accelerated Master’s

#### BS (selected)/Statistical Science, Accelerated MS

#### Overview

Highly-qualified students in BS programs have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.
For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
No specific undergraduate BS degree is required. Students enrolled in any BS degree may apply to the accelerated Statistical Science, MS (p. 1141) program if such an accelerated Statistical Science, MS pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs; and if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td></td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 351</td>
<td>Probability</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements
Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. (Credit may not be received for both STAT 474 and STAT 574; nor for both STAT 460 and STAT 560.) The graduate courses selected for overlap must be approved by the academic advisor of both the BS and MS programs. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master’s degree is conferred.

Bioengineering, BS/Bioengineering, Accelerated MS
Overview
Highly-qualified students in the Bioengineering, BS (p. 1177) have the option of obtaining an accelerated Bioengineering, MS (https://catalog.gmu.edu/colleges-schools/engineering/bioengineering/bioengineering-bs) if they have earned 90 undergraduate credits with an overall GPA of at least 3.20 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Bioengineering, MS (https://catalog.gmu.edu/colleges-schools/engineering/bioengineering/bioengineering-ms) program.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Bioengineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.20 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Bioengineering, MS (https://catalog.gmu.edu/colleges-schools/engineering/bioengineering/bioengineering-ms) program.

Accelerated Options Requirement
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved MS level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisor of both the BS and MS programs and by the Bioengineering department chair. For undergraduate Bioengineering technical electives, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students are recommended to meet with the Bioengineering academic advisor one year before and must apply to the program one semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a MS degree is conferred.

Bioengineering, BS/Biostatistics, Accelerated MS
Overview
Highly-qualified students in Bioengineering, BS (p. 1032) have the option of obtaining an accelerated Biostatistics, MS (p. 1138). Students in an accelerated degree program must fulfill all university requirements for the master’s degree.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

Admission Requirements:
Students enrolled in a BS degree in Bioengineering (p. 1032) may apply to this option if they have earned 90 undergraduate credits with an overall
Applied Statistics I

GPA of 3.00. Students must have successfully completed MATH 213 Analytic Geometry and Calculus III and BENG 320 Bioengineering Signals and Systems. Criteria for admission are identical to criteria for admission to the Biostatistics, MS (p. 1138) program.

Accelerated Option Requirements:

Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for the following 500-level courses, which will also count towards the technical elective requirements of their undergraduate degree:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 501</td>
<td>Bioengineering Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral:

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Bioengineering, BS/Data Analytics Engineering, Accelerated MS

Overview

Highly-qualified students in the Bioengineering, BS (p. 1032) have the option of obtaining an accelerated Data Analytics Engineering, MS (p. 1019) with a concentration in Bioengineering.

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6.7 Graduate Policies (p. 90).

Admission Requirements

Students in the Bioengineering, BS (p. 1032) program may apply to this option if they have earned 95 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 222 Computer Programming for Engineers and BENG 320 Bioengineering Signals and Systems. Criteria for admission are identical to criteria for admission to the Bioengineering concentration of the Data Analytics Engineering, M (p. 1019) program.

Accelerated Option Requirements

Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for 6 credits of 500-level basic courses in place of the corresponding BENG 400-level courses required for the undergraduate degree requirements. Specifically, students must register for:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 501</td>
<td>Bioengineering Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining (in place of BENG 420)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Note:

Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Bioengineering, BS/Operations Research, Accelerated MS

Overview

Highly-qualified students in the Bioengineering, BS (p. 1032) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in Bioengineering, BS (p. 1032) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEDR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.
Bioengineering, BS/Systems Engineering, Accelerated MS

Overview
Highly-qualified students in the Bioengineering, BS (p. 1032) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 90). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Bioengineering, BS (p. 1032) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Options Requirement
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master's level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

Bioengineering Minor

Banner Code: BIOE
Website: https://bioengineering.gmu.edu/

The minor in Bioengineering is available to both engineering and non-engineering majors. It provides considerable opportunities in a highly cross-disciplinary field involving the application of engineering concepts and tools to solve problems in biomedicine. The minor in Bioengineering prepares students to gain and reinforce their knowledge of biology and engineering fundamentals, and develop and apply skills to clinically-relevant challenges.

Admissions & Policies

Admissions
Students must have completed MATH 114 Analytic Geometry and Calculus II with a grade of B- or better to be admitted to the minor.

Policies
For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements
Total credits: 19-21

Minor Requirements
Required Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 101</td>
<td>Introduction to Bioengineering</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>BENG 214</td>
<td>Physiology for Engineers</td>
<td>3</td>
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</tbody>
</table>

Total Credits: 10

Technical Electives:
Select at least nine credits from the following list:

9-11

Computational Biomedicine

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>BENG 420</td>
<td>Biomedical Data Analytics</td>
</tr>
<tr>
<td>BENG 430</td>
<td>Continuum Biomechanics and Biotransport II</td>
</tr>
<tr>
<td>BENG 435</td>
<td>Multi-scale Modeling and Simulation in Biomedicine</td>
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</table>

Biomedical Imaging & Devices

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<tr>
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<tbody>
<tr>
<td>BENG 437</td>
<td>Medical Image Processing</td>
</tr>
<tr>
<td>BENG 438</td>
<td>Advanced Biomedical Imaging</td>
</tr>
<tr>
<td>BENG 470</td>
<td>Bioinstrumentation and Devices II</td>
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</table>

Biomaterials & Nanomedicine

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<tr>
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<tbody>
<tr>
<td>BENG 413</td>
<td>Molecular Engineering Laboratory</td>
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<tr>
<td>BENG 421</td>
<td>Cell and Tissue Engineering</td>
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<tr>
<td>BENG 441</td>
<td>Nanomedicine and Drug Delivery</td>
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Neurotechnology & Computational Neuroscience

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<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 327</td>
<td>Cellular, Neurophysiological, and Pharmacological Neuroscience</td>
</tr>
<tr>
<td>BENG 426</td>
<td>Neural Engineering</td>
</tr>
<tr>
<td>BENG 434</td>
<td>Computational Modelling of Neurons and Networks</td>
</tr>
<tr>
<td>BENG 487</td>
<td>Neuroinformatics</td>
</tr>
<tr>
<td>BENG 429</td>
<td>Mason-Inova Applied Technologies</td>
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</table>

Study Abroad

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BENG 417</td>
<td>Bioengineering World Health</td>
</tr>
</tbody>
</table>

Research Experience

<table>
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<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 395</td>
<td>RS: Mentored Research in Bioengineering (Research Experience)</td>
</tr>
</tbody>
</table>

Students may choose to substitute two of the technical electives (up to 6 credits) from the following:

ECE courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 370</td>
<td>Robot Design</td>
</tr>
</tbody>
</table>
The MS in Bioengineering prepares students for research and professional practice in bioengineering and related fields. The program includes both fundamentals and advanced work to apply engineering techniques to solve problems in biology and medicine. A major distinguishing feature of the curriculum is that it is designed to educate leaders who understand and appreciate how biomedical technology is translated from bench to bedside. Graduates from this program will eventually serve at universities, industry or government in a variety of roles, due to the breadth of this program and its content specific to clinical translation of new technologies.

Admissions & Policies

Admissions

Applicants must have completed a baccalaureate degree in engineering or the sciences from an accredited program and an earned GPA of 3.0 or better in their 60 highest-level credits.

In addition to fulfilling Mason's admission requirements for graduate study, applicants seeking to be admitted must demonstrate or provide the following:

- Demonstrate strong knowledge in ordinary differential equations cell biology and general chemistry as demonstrated by the BS degree, course selection, or project work.
- Additional knowledge in molecular biology, physiology, organic chemistry, linear algebra, and/or statistics is recommended.
- Provide two letters of recommendation, from references who are familiar with the applicant's professional accomplishments.
- Provide a resume and detailed statement of career goals and professional aspirations.
- If their native language is not English, students must take the English Proficiency exam. Test score minimum requirements are available at https://www2.gmu.edu/admissions-aid/how-apply/graduate/standardized-test-information
- Provide official GRE scores.

Requirements

Degree Requirements

Total credits: 30-33

Students complete the Core Bioengineering requirements, and requirements within one selected option: thesis, practicum or coursework.

Core Bioengineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 520</td>
<td>Biomedical Data Analytics</td>
<td>3</td>
</tr>
<tr>
<td>BENG 521</td>
<td>Cell and Tissue Engineering</td>
<td>3</td>
</tr>
<tr>
<td>or BENG 541</td>
<td>Biomaterials</td>
<td></td>
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<tr>
<td>BENG 526</td>
<td>Neural Engineering</td>
<td>3</td>
</tr>
<tr>
<td>BENG 537</td>
<td>Medical Image Processing</td>
<td>3</td>
</tr>
<tr>
<td>or BENG 538</td>
<td>Medical Imaging</td>
<td></td>
</tr>
</tbody>
</table>

Choose two courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 501</td>
<td>Bioengineering Research Methods</td>
<td></td>
</tr>
<tr>
<td>BENG 514</td>
<td>Pathophysiology and the Role of New Technologies in Human Diseases</td>
<td></td>
</tr>
<tr>
<td>BENG 575</td>
<td>Intellectual Property, Regulatory Concepts and Product Development</td>
<td>18</td>
</tr>
</tbody>
</table>

Total Credits
Students are expected to complete 6 credits of BENG 799 Master’s Thesis towards their degree. Students cannot enroll in BENG 799 Master’s Thesis until the completion of their second semester of coursework. Once enrolled students must maintain continuous registration in thesis research until graduation, excluding summers. Students who defend in the summer must be registered for at least 1 credit of thesis research during that summer term.

Students choose from a restricted list of technical specialization courses to increase technical depth in an area of their interest, under the guidance and with the approval of the student’s advisor. Students must choose six credits from these courses. At least half of the selected classes must be at the 600 or 700 level.

### Committee Selection

Each student must form a master’s committee comprising three individuals. A minimum of two members of the committee must be tenured or tenure-track faculty in the Department of Bioengineering (p. 1032). The other member must be from outside the department.

### Thesis Research Proposal

Each student must prepare a written thesis proposal, and it must be presented before the completion of the second semester. The proposal must be made available to the committee at least two weeks in advance of the presentation. The proposal must be presented to and approved by the committee. The committee determines whether the proposal has merit and can lead to significant contributions to the area and whether the student has the knowledge and skills to complete the proposed work successfully and in a timely manner. If the student fails to defend the proposal, the student may present a proposal a second time, no later than 60 days from the first attempt. Failure in the second attempt results in dismissal from the program.

### Thesis Preparation and Defense

While preparing the thesis, the candidate enrolls in thesis research. The candidate can proceed to a public defense of the thesis once it has been approved by the committee.

The defense must be announced at least two weeks in advance. The thesis draft must be submitted to the library and made publicly available at least two weeks in advance of the defense. The entire committee must be present at the defense. If the candidate fails to defend the thesis, the candidate may request a second defense, following the same procedures as for the initial defense. A candidate who fails a second attempt to defend the thesis is terminated from the program.
Practicum Option

<table>
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<tr>
<th>Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship/Co-Op</td>
<td>BENG 798 Independent Reading and Research in Bioengineering</td>
<td>6</td>
</tr>
<tr>
<td>BENG 798</td>
<td>Independent Reading and Research in Bioengineering</td>
<td>6</td>
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</tbody>
</table>

Total Credits 6

1 Students are expected to complete 6 credits of BENG 798 Independent Reading and Research in Bioengineering towards their degree. Students cannot enroll in BENG 798 Independent Reading and Research in Bioengineering until the completion of their second semester of coursework. These credits must be taken along with an internship/co-op opportunity. Therefore, a letter from the specific employer must be provided on behalf of the student.

Students choose from a restricted list of technical specialization courses to increase technical depth in an area of their interest, under the guidance and with the approval of the student’s advisor. Students must choose six credits from these courses. At least half of the selected classes must be at the 600 or 700 level.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Technical Specialization</td>
<td>BENG 699 Advanced Topics in Bioengineering</td>
<td>6</td>
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<tr>
<td>BENG 725</td>
<td>Computational Motor Control</td>
<td></td>
</tr>
<tr>
<td>BENG 738</td>
<td>Advanced Medical Image Processing</td>
<td></td>
</tr>
<tr>
<td>BENG 745</td>
<td>Biomedical Systems and Microdevices</td>
<td></td>
</tr>
<tr>
<td>BENG 750</td>
<td>Modeling and Simulation of Human Movement</td>
<td></td>
</tr>
<tr>
<td>Electrical, Computer &amp; Mechanical Engineering</td>
<td>ECE 511 Computer Architecture</td>
<td></td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
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<tr>
<td>ECE 530</td>
<td>Sensor Engineering</td>
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<td>ECE 550</td>
<td>System Engineering Design</td>
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<td>ECE 635</td>
<td>Adaptive Signal Processing</td>
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<tr>
<td>ME 621</td>
<td>Foundations of Fluid Mechanics</td>
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</tr>
<tr>
<td>Bioinformatics</td>
<td>BINF 641 Biomolecular Modeling</td>
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<tr>
<td>BINF 690</td>
<td>Numerical Methods for Bioinformatics</td>
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</tr>
<tr>
<td>BINF 701</td>
<td>Systems Biology</td>
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<tr>
<td>BINF 731</td>
<td>Protein Structure Analysis</td>
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<tr>
<td>BINF 740</td>
<td>Introduction to Biophysics</td>
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<td>Introduction to Computer Simulations of Biomolecules</td>
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<tr>
<td>BINF 751</td>
<td>Biochemical and Cellular Systems Modeling</td>
<td></td>
</tr>
<tr>
<td>BINF 760</td>
<td>Machine Learning for Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>Biology and Chemistry</td>
<td>BIOL 562 Personalized Medicine</td>
<td></td>
</tr>
<tr>
<td>BIOL 563</td>
<td>Virology</td>
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<td>BIOL 566</td>
<td>Cancer Genomics</td>
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<td>BIOL 572</td>
<td>Human Genetics</td>
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<td>CHEM 568</td>
<td>Bioorganic Chemistry</td>
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<td>CHEM 613</td>
<td>Modern Polymer Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 660</td>
<td>Protein Biochemistry</td>
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</table>

Physics

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 510</td>
<td>Computational Physics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 612</td>
<td>Physics of Modern Imaging</td>
<td></td>
</tr>
<tr>
<td>PHYS 640</td>
<td>Finite Element Analysis of Solids and Fluids</td>
<td></td>
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<tr>
<td>PHYS 694</td>
<td>Applied Mechanics of Solids</td>
<td></td>
</tr>
<tr>
<td>PHYS 695</td>
<td>Applied Fluid Mechanics</td>
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Mathematics and Statistics

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<td>Experimental Design</td>
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<td>STAT 522</td>
<td>Applied Multivariate Statistics</td>
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<td>STAT 526</td>
<td>Applied Regression Analysis</td>
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<tr>
<td>STAT 560</td>
<td>Biostatistical Methods</td>
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<tr>
<td>STAT 662</td>
<td>Multivariate Statistical Methods</td>
<td></td>
</tr>
<tr>
<td>STAT 672</td>
<td>Statistical Learning and Data Analytics</td>
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</table>

Nanoscience and Neuroscience

<table>
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<td>NEUR 602</td>
<td>Cellular Neuroscience</td>
<td></td>
</tr>
<tr>
<td>NEUR 651</td>
<td>Molecular Neuropharmacology</td>
<td></td>
</tr>
<tr>
<td>NEUR 734</td>
<td>Computational Neurobiology</td>
<td></td>
</tr>
</tbody>
</table>

Committee Selection

Each student must form a master’s committee, comprising two or three individuals. In this case, the committee will help identify the goals of the internship and make sure that they are in line with the MS program’s objectives. The committee will also be responsible to evaluate a final report and presentation to assess the successful completion of the internship. A minimum of one member of the committee must be tenured or tenure-track faculty in the Department of Bioengineering. The other two members must be representatives from the internship program.

Project Preparation and Presentation

During the internship, the candidate enrolls in BENG 798 Independent Reading and Research in Bioengineering (Internship/Co-op) and prepares the project report and presentation. The candidate can proceed to the final presentation of the project once it has been approved by the committee.

The presentation must be announced at least two weeks in advance. The report draft must be submitted to the library and made publicly available at least two weeks in advance of the defense. The entire committee must be present at the presentation. If the candidate fails to defend the project, the candidate may request a second attempt, following the same procedures as for the initial one. A candidate who fails a second attempt is terminated from the program.

Coursework Option

Students choose from a restricted list of technical specialization courses to increase technical depth in an area of their interest, under the guidance and with the approval of the student’s advisor. Students must choose 15 credits from these courses. At least half of the selected classes must be at the 600 or 700 level.
<table>
<thead>
<tr>
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<tr>
<td><strong>Technical Specialization</strong></td>
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<tr>
<td>BENG 699</td>
<td>Advanced Topics in Bioengineering</td>
<td>15</td>
</tr>
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<td>BENG 725</td>
<td>Computational Motor Control</td>
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<tr>
<td>NEUR 734</td>
<td>Computational Neurobiology</td>
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</tr>
</tbody>
</table>

Note: Students who elect to the coursework option will complete a minimum of 33 credit hours.

**Additional Training Requirement**

**Bioengineering Seminar**
All MS students are required to attend a minimum of two departmental seminars per semester. Students will sign an attendance sheet available at the end of each seminar.

**Accelerated Master's**

**Bioengineering, BS/Bioengineering, Accelerated MS**

**Overview**
Highly-qualified students in the Bioengineering, BS (p. 1177) (https://catalog.gmu.edu/colleges-schools/engineering/bioengineering/bioengineering-bs) have the option of obtaining an accelerated Bioengineering, MS (https://catalog.gmu.edu/colleges-schools/engineering/bioengineering/bioengineering-ms).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 90). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**
Mason undergraduate students majoring in Bioengineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.20 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Bioengineering, MS (https://catalog.gmu.edu/colleges-schools/engineering/bioengineering/bioengineering-ms) program.

**Accelerated Options Requirement**
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved MS level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisor of both the BS and MS programs and by the Bioengineering department chair. For undergraduate Bioengineering technical electives, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

**Degree Conferral**
Students are recommended to meet with the Bioengineering academic advisor one year before and must apply to the program one semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor's/ Accelerated Master’s Transition form that is submitted to the Office of
the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a MS degree is conferred.

**Bioengineering, PhD**

Banner Code: VS-PHD-BIOE

**Academic Advising**

Phone: 703-993-4381
Email: kblackw1@gmu.edu
Website: https://bioengineering.gmu.edu/academics/phd-bioengineering

Rapid technologically driven advances in understanding and treating human disease have opened up vast opportunities to advance human health through research that integrates engineering, basic sciences, medical sciences, and knowledge of industry practices. The doctoral program will prepare leaders in bioengineering in this broader, integrative sense of the discipline. A major distinguishing feature of the curriculum is its emphasis on understanding how biomedical technology is translated from bench to bedside. Graduates from this program will eventually serve at universities, industry or government in a variety of roles, including scientific research, technology development, and regulatory affairs.

**Available Concentrations**

Four concentration areas are offered, aligned with current faculty research expertise:

- Biomedical Imaging and Devices
- Computational Biomedical Engineering
- Biomaterials and Nanomedicine
- Neurotechnology and Computational Neuroscience

**Admissions & Policies**

**Admissions**

**Application Requirements**

In addition to fulfilling Mason’s admission requirements for graduate study, applicants should:

- Have a baccalaureate degree in engineering or the sciences from an accredited program with a reputation for high academic standards and an earned GPA of 3.3 or better in their highest-level engineering-related credits.
- Provide official GRE Scores.
- Provide three letters of recommendation, preferably from academic references or references in industry or government who are familiar with the applicant’s aptitude for research.
- Provide a resume and detailed statement of career goals and professional aspirations, including why they want to study at Mason, and two faculty with whom they want to work with.
- Demonstrate interest in combining engineering and the natural sciences with discovery and application in the life science; i.e., via a degree which reflects the desired combination (such as bioengineering, biomedical engineering, biophysics); a degree in engineering or the natural sciences which includes course work in life sciences; a degree in biology which includes course work in mathematics, physics, or engineering; a project or research experience with combined complementary expertise.

- If their native language is not English, students must take the English Proficiency exam. Test score minimum requirements are available at https://www2.gmu.edu/admissions-aid/how-apply/graduate/standardized-test-information

**Policies**

**Reduction of Credit**

Students must complete a minimum of 72 graduate credits, which may be reduced by a maximum of 30 credits from a related master’s degree. Reduction of credit requires the approval of the program director or designee and the dean or designee of the school. They determine how many credits are eligible for the reduction of credit.

For students to remain eligible for the PhD program, they must maintain a "B" average. Grades of "C" or lower in courses cannot be counted towards degree completion.

**Program Requirements**

The bioengineering PhD program requires successful completion of coursework detailed in a plan of study, qualifying examination, dissertation proposal, and final dissertation defense. Additional training requirements include seminar attendance, ethics training, and mentoring and teaching experience. All the general requirements for doctoral degrees at Mason apply to this program as well.

**Requirements**

**Degree Requirements**

Total credits: 72

**Complementary Background**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td></td>
<td>Students choose 6 credits of complimentary courses</td>
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<table>
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</thead>
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<tr>
<td></td>
<td>Students with a background in engineering or related field select:</td>
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<tr>
<td></td>
<td>BINF 531 Molecular Cell Biology for Bioinformatics</td>
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<tr>
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<td>NEUR 600 Chemistry and the Brain</td>
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<th>Code</th>
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<tbody>
<tr>
<td></td>
<td>Students with a background in a non-engineering or related field select:</td>
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<td></td>
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<td></td>
<td>or OR 481 Numerical Methods in Engineering</td>
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<td></td>
<td>SYST 500 Quantitative Foundations for Systems Engineering</td>
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</table>

Total Credits: 6

Students who have taken courses equivalent to the complimentary courses may replace them with 6 credits of technical electives.

**Core Bioengineering**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BENG 501 Bioengineering Research Methods</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BENG 514 Pathophysiology and the Role of New Technologies in Human Diseases</td>
<td>3</td>
</tr>
</tbody>
</table>
BENG 601  Collaborative Bioengineering Basic Science Research  3
BENG 602  Collaborative Bioengineering Clinical Science Research  3
STAT 554  Applied Statistics I  3
or STAT 535  Analysis of Experimental Data
or STAT 560  Biostatistical Methods
BENG 800  Bioengineering Colloquium  3

Total Credits  21

1 One of BENG 501, 514, or 575 can be replaced with a technical elective.
2 Recommended option.
3 Students choose 1 credit per semester for 3 semesters.

Concentrations
Select one concentration and complete the requirements therein.

- Biomedical Imaging and Devices (BMID) (p. 1047)
- Computational Biomedical Engineering (CBME) (p. 1047)
- Biomaterials and Nanomedicine (BNM) (p. 1047)
- Neurotechnology and Computational Neuroscience (NTCN) (p. 1047)

### Biomedical Imaging and Devices (BMID)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 538</td>
<td>Medical Imaging</td>
<td>3</td>
</tr>
<tr>
<td>BENG 537</td>
<td>Medical Image Processing</td>
<td>3</td>
</tr>
<tr>
<td>or BENG 570</td>
<td>Bioinstrumentation and Devices II</td>
<td></td>
</tr>
<tr>
<td>BENG 738</td>
<td>Advanced Medical Image Processing</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  9

### Computational Biomedical Engineering (CBME)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 520</td>
<td>Biomedical Data Analytics</td>
<td>3</td>
</tr>
<tr>
<td>BENG 530</td>
<td>Continuum Biomechanics and Biotransport II</td>
<td>3</td>
</tr>
<tr>
<td>BENG 535</td>
<td>Multi-Scale Modeling and Simulation in Biomedicine</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  9

### Biomaterials and Nanomedicine (BNM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 521</td>
<td>Cell and Tissue Engineering</td>
<td>3</td>
</tr>
<tr>
<td>BENG 541</td>
<td>Biomaterials</td>
<td>3</td>
</tr>
<tr>
<td>BENG 641</td>
<td>Advanced Nanotechnology in Health</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  9

### Neurotechnology and Computational Neuroscience (NTCN)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 526</td>
<td>Neural Engineering</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 634</td>
<td>Neural Modeling</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 689</td>
<td>Topics in Neuroscience</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  9

### Technical Electives

These graduate courses develop additional technical expertise in a student's PhD concentration. Students must choose 12 credits from the following list. At least half of the selected classes must be at the 600-700 level.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Technical Specialization</td>
<td>12</td>
</tr>
</tbody>
</table>

#### Bioengineering
- BENG 699  Advanced Topics in Bioengineering
- BENG 725  Computational Motor Control
- BENG 738  Advanced Medical Image Processing
- BENG 745  Biomedical Systems and Microdevices
- BENG 750  Modeling and Simulation of Human Movement

#### Electrical, Computer & Mechanical Engineering
- ECE 511  Computer Architecture
- ECE 528  Introduction to Random Processes in Electrical and Computer Engineering
- ECE 530  Sensor Engineering
- ECE 550  System Engineering Design
- ECE 635  Adaptive Signal Processing
- ME 621  Foundations of Fluid Mechanics

#### Bioinformatics
- BINF 641  Biomolecular Modeling
- BINF 690  Numerical Methods for Bioinformatics
- BINF 701  Systems Biology
- BINF 731  Protein Structure Analysis
- BINF 740  Introduction to Biophysics
- BINF 741  Introduction to Computer Simulations of Biomolecules
- BINF 751  Biochemical and Cellular Systems Modeling
- BINF 760  Machine Learning for Bioinformatics

#### Biology and Chemistry
- BIOL 562  Personalized Medicine
- BIOL 563  Virology
- BIOL 566  Cancer Genomics
- BIOL 572  Human Genetics
- BIOL 583  General Biochemistry
- BIOL 682  Advanced Eukaryotic Cell Biology
- CHEM 563  General Biochemistry I
- CHEM 568  Bioorganic Chemistry
- CHEM 613  Modern Polymer Chemistry
- CHEM 660  Protein Biochemistry

#### Physics
- PHYS 510  Computational Physics I
- PHYS 612  Physics of Modern Imaging
- PHYS 640  Finite Element Analysis of Solids and Fluids
- PHYS 694  Applied Mechanics of Solids
- PHYS 695  Applied Fluid Mechanics

#### Mathematics and Statistics
- MATH 685  Numerical Analysis
In preparing this proposal, the student enrolls in each student must prepare a written dissertation proposal. While preparing this proposal, the student enrolls in BENG 998 Doctoral Dissertation Proposal. The proposal must be made available to the committee at least two weeks in advance of the presentation. The proposal must be presented to and approved by the dissertation committee. The committee determines whether the proposal has merit and can lead to significant contributions to the area and whether the student has the knowledge and skills to complete the proposed work successfully and in a timely manner. Students may present their dissertation proposal only after passing the qualifying exam, and the presentation may not be on the same day as the qualifying exam. If the student fails to defend the proposal, the student may present a dissertation proposal a second time at a later date. Failure in the second attempt results in dismissal from the program. On completing this requirement successfully, the student is advanced to candidacy for the PhD degree.

**Advancement to Candidacy**

Each student must present and defend a written dissertation proposal to advance to candidacy. The student is eligible to advance to candidacy after passing the qualifying exam, and satisfactorily completing the required courses in an approved plan of study filed by the student, and completing a minimum of 6 credits of BENG 998 Doctoral Dissertation Proposal. All students must advance to candidacy within four years after initial enrollment in the program, unless special waiver is granted by the PhD committee for extenuating circumstances. If the student has not demonstrated satisfactory progress to the PhD committee by the end of the 4th year, they can be terminated from the program.

The proposal should at a minimum clearly articulate the research question and the specific aims of the research, provide a critical review of the literature and present the rationale and the significance of the research in addressing a gap in scientific knowledge, describe the research methods and study design in sufficient detail and present preliminary results demonstrating the feasibility of the research.

The proposal must be made available to the committee at least two weeks in advance of the presentation. The committee determines whether the proposal has merit and can lead to significant original contributions to the area.

Following the research presentation, the dissertation committee will ask the students a number of questions in a closed session to evaluate the students understanding of the relevant literature and methods that are broadly related to the chosen area of research, and whether the student has the knowledge and skills to complete the proposed work successfully and in a timely manner. If the dissertation committee feels that the student is not adequately prepared, they may recommend remedial measures, including additional coursework to address any gaps in knowledge, or modification of the aims of the proposal. The student can appear for advancement to candidacy a second time anytime within one year. Failure in the second attempt results in dismissal from the program. On completing this requirement successfully, the student is advanced to candidacy for the PhD degree.

**Dissertation Research**

Students are expected to complete 24 credits of BENG 998 Doctoral Dissertation Proposal and BENG 999 Doctoral Dissertation towards their degree. Students cannot enroll in BENG 998 Doctoral Dissertation Proposal before they have passed the qualifying exam. Students cannot enroll in BENG 999 Doctoral Dissertation before they have advanced to candidacy. Students who advanced to candidacy after the add period for a given semester must wait until the following semester to register for BENG 999 Doctoral Dissertation. Students cannot advance to candidacy and defend their dissertation during the same semester. In special cases, waivers may be granted by the PhD committee. Once enrolled in BENG 999 Doctoral Dissertation, students must maintain continuous registration in BENG 999 Doctoral Dissertation each semester until graduation, excluding summers. Students who defend in the summer...
must be registered for at least 1 credit of BENG 999 Doctoral Dissertation during that summer term.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 24 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENG 998</td>
<td>Doctoral Dissertation Proposal (9 credit minimum, 12 credit maximum)</td>
<td>24</td>
</tr>
<tr>
<td>BENG 999</td>
<td>Doctoral Dissertation (12 credit minimum)</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

### Dissertation Committee Selection
Each student must form a dissertation committee, comprising four or five individuals, including the members selected for the qualifying exam. A minimum of two members of the committee must be tenured or tenure-track faculty in the Department of Bioengineering. One member must be from outside the department. The chair of the dissertation committee must be tenured or tenure-track faculty in the Department of Bioengineering. The dissertation director can be a member of the Bioengineering graduate faculty with primary appointment outside of the Department of Bioengineering. The committee and the chair must be approved by the chair of the Department of Bioengineering.

### Dissertation Preparation and Defense
While preparing the dissertation, the candidate enrolls in BENG 999 Doctoral Dissertation. The candidate can proceed to a public defense of the dissertation once their dissertation has been approved by the dissertation committee.

The dissertation must make significant contributions to its area as evidenced by refereed journal and/or conference publications. All students are expected to defend their dissertation within three years after defending their proposal, unless special waiver is granted by the PhD committee for extenuating circumstances.

The defense must be announced at least two weeks in advance. The dissertation draft must be submitted to the library and made publicly available at least two weeks in advance of the defense. The entire dissertation committee must be present at the defense, unless an exception is approved by the director of the PhD in Bioengineering Program in advance of the defense. If the candidate fails to defend the dissertation, the candidate may request a second defense, following the same procedures as for the initial defense. There is no time limit for this request other than general time limits for the doctoral degree. A candidate who fails a second attempt to defend the dissertation is terminated from the program.

### Additional Training Requirements

#### Bioengineering Seminar
All PhD students are required to attend a minimum of 3 departmental seminars per semester. Students will sign an attendance sheet available at the end of each seminar.

#### Ethics Training
Prior to beginning research studies in a Bioengineering laboratory, all PhD students must complete the on-line Collaborative Institutional Training Initiative (CITI) Responsible Conduct of Research course. CITI training modules provide students with an understanding of conflicts of interest, research misconduct, peer review, and authorship.

#### Bioengineering Mentorship
All PhD students are required to participate in mentoring at least one undergraduate Bioengineering senior design team for a duration of 1 year.

PhD students work with the faculty advisor for the senior design team and are expected to apply translational and entrepreneurial concepts towards the mentorship of the team.

### Teaching Requirement
All PhD students are required to participate in teaching activities in consultation with their major advisors. Teaching opportunities include presenting lectures, conducting recitation sessions, serving as a teaching assistant, working as a laboratory assistant, participating in teaching workshops, preparing course materials, and other related activities approved by the student’s advisor.

### Department of Computer Science
PhD program: csphd@gmu.edu
MS programs: csgrad@gmu.edu
Undergraduate programs: csug@gmu.edu
General information: csinfo@gmu.edu
Phone: 703-993-1530
Fax: 703-993-1710
Website: cs.gmu.edu

Computer science is a discipline concerned with the analysis, design, implementation, maintenance, and evolution of computer-based systems used in almost all walks of life. Computer science is at the center of the information revolution in the 21st century. Advanced computation tools and techniques are revolutionizing and transforming the way we work, play, communicate, collaborate, and conduct business. In addition, computational approaches are integral to several scientific and engineering fields such as computational sciences, bioinformatics, and health informatics, to name a few.

Computer scientists must be well-grounded not only in the theory of computing, but also in its application to diverse areas. Computer scientists must be capable of working closely with members of other professions associated with computing. Students who pursue this discipline will learn about programming languages, data structures, algorithms, operating systems, artificial intelligence, robotics, data mining, computer networking, cyber-security, databases and software engineering.

### Faculty

#### Department Faculty

**Professors**

**Associate Professors**
- Ammann, Domeniconi, Duric, Gingold, Li, Lien, Lin, Maddox, Richards, Snyder, P. Wang, X. Wang, White, Zhong

**Assistant Professors**
- Ahnifie, Baldimtsi, Bell, Cheng, Deng, Dimitriadis, Gonzalez Hernandez, Gordon, LaToza, Osterweil, Pathak, Soundararajan, Yu
but create new and interesting problems for computer scientists.

These disciplines do not merely use computing techniques. These disciplines do not merely use computing

This program presents an innovative approach to the integration of computer science with other disciplines that require expertise in programming, computer systems, software requirements and modeling, formal methods, and analysis of algorithms.

For the BS ACS degree, students must complete 120 credits, including the Mason Core (p. 142) requirements. The program requires foundation, core, and concentration courses. These course requirements provide expertise in programming, computer systems, software requirements and modeling, formal methods, and analysis of algorithms.

Students must earn a C or better in any course intended to satisfy a prerequisite for a computer science course. Applied Computer Science majors may not use more than one course with a grade of C- or D toward department requirements.

For the BS ACS degree, students must complete 120 credits, including the Mason Core (p. 142) requirements. The program requires foundation, core, and concentration courses. These course requirements provide expertise in programming, computer systems, software requirements and modeling, formal methods, and analysis of algorithms.

The CS Department may not allow students to retake certain high-demand CS courses in which they have already earned a grade of C or better simply to improve their GPA.

Computer science majors complete the writing-intensive requirement through a sequence of projects and reports in CS 306 Synthesis of Ethics and Law for the Computing Professional (Mason Core) (p. 142) and CS 321 Software Engineering. Faculty members provide feedback on students' expository writing.

No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP 5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in

Instructors
Andrea, Avramovic, Neary, Otten, Russell

Adjunct Professors
Abu Jbara, Barlow, Bararseh, Conroy, Curts, Dubey, Ellis, Fielding, Geldon, Greensberg, Greenwald, He, Kaznachey, King, Kodali, Kowalski, McDowall, Nidiffer, Nordstrom, Olimpiew, Pettit, Reep, Smith, Wheeler

Emeritus Faculty
Baum, DeJong, Gomaa, Hamburger, Rine, Sibley

Programs
- Applied Computer Science, BS
- Computer Science Minor
- Computer Science Undergraduate Certificate
- Computer Science, BS
- Computer Science, MS
- Computer Science, PhD
- Information Security and Assurance Graduate Certificate
- Information Security and Assurance, MS
- Information Systems, MS
- Software Engineering Graduate Certificate
- Software Engineering Minor
- Software Engineering, MS

Applied Computer Science, BS
Banner Code: VS-BS-ACS

Academic Advising
Phone: 703-993-1530
Email: csug@gmu.edu
Website: http://cs.gmu.edu/prospective-students/undergraduate-programs/bs-in-applied-computer-science/

This program presents an innovative approach to the integration of computer science with other disciplines that require expertise in computing techniques. These disciplines do not merely use computing but create new and interesting problems for computer scientists.

Admissions & Policies

Policies

Advanced Placement, Credit by Exam
A score of 4 on the Advanced Placement (AP) computer science exam qualifies students for credit in CS 112 Introduction to Computer Programming (Mason Core) (p. 142). A score of 4 on the International Baccalaureate (IB) computer science exam qualifies students for credit in CS 112 Introduction to Computer Programming (Mason Core) (p. 142), and a score of 5 or more qualifies students for credit in CS 211 Object-Oriented Programming.

Change of Major
Students requesting a change of major to Applied Computer Science must meet with the Volgenau School of Engineering Coordinator of Undergraduate Advising, 2500 Nguyen Engineering Building. Students requesting a change of major to Applied Computer Science must have a GPA of at least 2.75 in computer science and math courses and successfully completed one of CS 112 (http://catalog.gmu.edu/preview_course_nopop.php?catoid=29&coid=302778) or CS 211 (http://catalog.gmu.edu/preview_course_nopop.php?catoid=29&coid=302780), and one of MATH 113 (http://catalog.gmu.edu/preview_program.php?catoid=29&poid=28176#tt1999), MATH 114 (http://catalog.gmu.edu/preview_course_nopop.php?catoid=29&coid=305053), or MATH 125 (http://catalog.gmu.edu/preview_course_nopop.php?catoid=29&coid=305056), with a grade of B or better at Mason. See Change of Major (p. 1013) for more information.

Grades
Students must earn a C or better in any course intended to satisfy a prerequisite for a computer science course. Applied Computer Science majors may not use more than one course with a grade of C- or D toward department requirements.

Program Requirements
For the BS ACS degree, students must complete 120 credits, including the Mason Core (p. 142) requirements. The program requires foundation, core, and concentration courses. These course requirements provide expertise in programming, computer systems, software requirements and modeling, formal methods, and analysis of algorithms.

Repeating Courses
Students may attempt an undergraduate course taught by the Volgenau School of Engineering twice. A third attempt requires approval of the department offering the course. This policy does not apply to STAT 250 Introductory Statistics I (Mason Core) (p. 142), which follows the normal university policy for repeating undergraduate courses.

The CS Department may not allow students to retake certain high-demand CS courses in which they have already earned a grade of C or better simply to improve their GPA.

Writing-Intensive Requirement
Computer science majors complete the writing-intensive requirement through a sequence of projects and reports in CS 306 Synthesis of Ethics and Law for the Computing Professional (Mason Core) (p. 142) and CS 321 Software Engineering. Faculty members provide feedback on students' expository writing.

Termination from the Major
No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP 5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result
in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

### Requirements

#### Degree Requirements

Total credits: 120

Students must complete all foundation, core, elective, and communication requirements, and the requirements from one selected concentration.

#### Foundation

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 110</td>
<td>Essentials of Computer Science (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CS 211</td>
<td>Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 24

1. Must be taken within a student’s first year at the university.

#### Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 262</td>
<td>Introduction to Low-Level Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

#### Elective

Select one CS course numbered above 400, except CS 498 (p. 1468) 3

Total Credits 3

#### Communication

Students need three credits of communication:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Concentration in Bioinformatics (BNF)

**Foundation**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core)</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CS 306</td>
<td>Synthesis of Ethics and Law for the Computing Professional (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 17

1. Requires a grade of C or better to satisfy the Mason Core (http://catalog.gmu.edu/content.php?catoid=29&navoid=6253) synthesis requirement.

**Core**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 450</td>
<td>Bioinformatics for Life Sciences</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 482</td>
<td>Introduction to Molecular Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 580</td>
<td>Computer Applications for the Life Sciences</td>
<td>3</td>
</tr>
<tr>
<td>CS 450</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>BINF 401</td>
<td>Bioinformatics and Computational Biology I</td>
<td>3</td>
</tr>
<tr>
<td>or CS 444</td>
<td>Introduction to Computational Biology</td>
<td>3</td>
</tr>
<tr>
<td>BINF 402</td>
<td>Bioinformatics and Computational Biology II</td>
<td>3</td>
</tr>
<tr>
<td>or CS 445</td>
<td>Computational Methods for Genomics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 19
### Two Approved Electives Related to Bioinformatics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select two approved electives (6 credits) related to bioinformatics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>with the student’s advisor and approved by the CS department</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

### Additional Mason Core

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
</tr>
<tr>
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</tbody>
</table>

1. Applied Computer Science majors must take the Natural Sciences section of ENGH 302 Advanced Composition (Mason Core) (p. 142).

### Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 5 credits of</td>
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<td></td>
<td>electives</td>
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<tr>
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</tbody>
</table>

### Concentration in Computer Game Design (CGDS) Foundation

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 230</td>
<td>History of Computer Game Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 306</td>
<td>Synthesis of Ethics and Law for the</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Computing Professional (Mason Core)</td>
<td>(p. 142)</td>
</tr>
<tr>
<td>CS 325</td>
<td>Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 351</td>
<td>Visual Computing</td>
<td>3</td>
</tr>
<tr>
<td>AVT 104</td>
<td>Two-Dimensional Design and Color</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Engineers and Scientists I</td>
<td></td>
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<td>Total</td>
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1. Requires a grade of C or better to satisfy the Mason Core (http://catalog.gmu.edu/content.php?catoid=29&navoid=6253) synthesis requirement.

### Approved Elective Related to Game Design

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 332</td>
<td>Object-Oriented Software Design and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementation</td>
<td></td>
</tr>
<tr>
<td>CS 455</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 475</td>
<td>Concurrent and Distributed Systems</td>
<td></td>
</tr>
<tr>
<td>CS 477</td>
<td>Mobile Application Development</td>
<td></td>
</tr>
<tr>
<td>CS 480</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 485</td>
<td>Autonomous Robotics</td>
<td></td>
</tr>
<tr>
<td>SWE 432</td>
<td>Web Application Development</td>
<td></td>
</tr>
<tr>
<td>GAME 332</td>
<td>RS: Story Design for Computer Games</td>
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</tr>
<tr>
<td>AVT 370</td>
<td>Entrepreneurship in the Arts</td>
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<tr>
<td>AVT 374</td>
<td>Sound Art I</td>
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<td>AVT 487</td>
<td>Advanced Topics: New Media Art</td>
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</table>

### Natural Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Core) (p. 142)</td>
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<tr>
<td></td>
<td>Select one additional lab science</td>
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</table>

### Additional Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td>3</td>
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<td>Total</td>
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</tbody>
</table>

1. Applied Computer Science majors must take the Natural Sciences section of ENGH 302 Advanced Composition (Mason Core) (p. 142).

### Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 5 credits of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>electives</td>
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</tr>
<tr>
<td>Total</td>
<td></td>
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### Concentration in Geography (GEOG) Foundation

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 425</td>
<td>Game Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CS 426</td>
<td>Game Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CS 451</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>AVT 382</td>
<td>2D Experimental Animation</td>
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</tr>
<tr>
<td>AVT 383</td>
<td>3D Experimental Animation</td>
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<td>Total</td>
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### Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 306</td>
<td>Synthesis of Ethics and Law for the</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Computing Professional (Mason Core) (p.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>142)</td>
<td></td>
</tr>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 102</td>
<td>Physical Geography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 103</td>
<td>Human Geography (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
<td>3</td>
</tr>
</tbody>
</table>
GGS 300  Quantitative Methods for Geographical Analysis  3
STAT 344  Probability and Statistics for Engineers and Scientists I  3

Total Credits  21

1 Requires a grade of C or better to satisfy the Mason Core (http://catalog.gmu.edu/content.php?catoid=29&navoid=6253) synthesis requirement.

Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GGS 310</td>
<td>Introduction to Digital Cartography</td>
<td>3</td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 411</td>
<td>Advanced Digital Cartography</td>
<td>3</td>
</tr>
<tr>
<td>GGS 412</td>
<td>Air Photography Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>GGS 416</td>
<td>Satellite Image Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 463</td>
<td>RS: Applied Geographic Information Systems</td>
<td>3</td>
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</tbody>
</table>

One GGS course numbered above 300 (p. 1732)  3

Total Credits  21

Additional Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (p. 142)  1</td>
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</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Lab Science</td>
<td>4</td>
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</table>

Total Credits  19

1 Applied Computer Science majors must take the Natural Sciences section of ENGH 302 Advanced Composition (Mason Core) (p. 142).

Electives

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Select 7 credits of electives</td>
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</table>

Total Credits  7

Concentration in Software Engineering (SWE)

Foundation

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td>3</td>
</tr>
<tr>
<td>CS 306</td>
<td>Synthesis of Ethics and Law for the Computing Professional (Mason Core) (p. 142)  1</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits  6

1 Requires a grade of C or better to satisfy the Mason Core (http://catalog.gmu.edu/content.php?catoid=29&navoid=6253) synthesis requirement.

Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SWE 205</td>
<td>Software Usability Analysis and Design</td>
<td>3</td>
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<tr>
<td>SWE 301</td>
<td>Internship Preparation</td>
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<tr>
<td>SWE 401</td>
<td>Internship Reflection</td>
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</tr>
<tr>
<td>CS 332</td>
<td>Object-Oriented Software Design and Implementation</td>
<td>3</td>
</tr>
<tr>
<td>SWE 437</td>
<td>Software Testing and Maintenance</td>
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Total Credits  10

SWE Related

<table>
<thead>
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<tr>
<td>CS 450</td>
<td>Database Concepts</td>
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<tr>
<td>CS 455</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 463</td>
<td>Comparative Programming Languages</td>
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<tr>
<td>CS 465</td>
<td>Computer Systems Architecture</td>
<td></td>
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<tr>
<td>CS 468</td>
<td>Secure Programming and Systems</td>
<td></td>
</tr>
<tr>
<td>CS 475</td>
<td>Concurrent and Distributed Systems</td>
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</tr>
<tr>
<td>CS 477</td>
<td>Mobile Application Development</td>
<td></td>
</tr>
<tr>
<td>CS 491</td>
<td>Industry-Sponsored Senior Design Project</td>
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</tr>
<tr>
<td>SWE 432</td>
<td>Web Application Development</td>
<td></td>
</tr>
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<td>SWE 443</td>
<td>Software Architectures</td>
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Total Credits  15

Cross-Disciplinary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENGH 388</td>
<td>Professional and Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
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<tr>
<td>PSYC 333</td>
<td>Industrial and Organizational Psychology</td>
<td></td>
</tr>
<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 335</td>
<td>Organizational Communication</td>
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</table>

Total Credits  6

Additional Mason Core

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Written Communication (p. 142)  1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
<td></td>
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<tr>
<td>Natural Science (p. 148)</td>
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</table>

Total Credits  28

1 Applied Computer Science majors must take the Natural Sciences section of ENGH 302 Advanced Composition (Mason Core) (p. 142).

Electives

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>Select 3 credits of electives</td>
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</tbody>
</table>

Total Credits  3
Honors

CS Honors Program
The Department of Computer Science offers a CS Honors Program for students with strong computational foundations and the drive to delve deeper into computing. The program is based on the bachelor of science in computer science and applied computer science curriculum and is distinct from the University Honors College curriculum.

Entry Requirements
Students must be seeking a Bachelor of Science in Computer Science or a Bachelor of Science in Applied Computer Science and must apply for entry into the CS Honors Program after completing 12 credits of CS courses. Applicants must meet the GPA requirements outlined below to enter into the CS Honors Program.

Honors Requirements
CS Honors Program students must fulfill all standard courses required by the Bachelor of Science in Computer Science or Applied Computer Science degree as well as the following additional requirements:

- GPA Requirement: Students must maintain an overall GPA of at least 3.50 and a GPA of at least 3.50 for courses which count towards the BS/CS or BS/ACS major including math, natural sciences, and all CS/SWE courses.
- Research Project Requirement: Students must complete a significant research project prior to graduation. Students should seek out a CS faculty member willing to serve as their research advisor for the project. The project should comprise original work by the student and be demonstrated via two channels:
  a. a written project report that is approved by the student's research advisor and submitted to the department;
  b. a presentation of the project to an audience of students and/or faculty.
- Advanced Course Requirement: At least two Advanced Courses must be completed. A complete list of acceptable advanced courses is maintained by the CS department and is available on the department web site.

Accelerated Master’s

Applied Computer Science, BS/Computer Science, Accelerated MS

Overview
Highly-qualified students in the Applied Computer Science, BS (p. 1050) have the option of obtaining an accelerated Computer Science, MS (p. 1065).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Students in the Applied Computer Science, BS (p. 1050) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 10

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for CS 583 Analysis of Algorithms and one of the following courses in place of the corresponding 400-level course:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Applied Computer Science, BS/Data Analytics Engineering, Accelerated MS

Overview
Highly-qualified students in the Applied Computer Science, BS (p. 1050) have the option of obtaining an accelerated Data Analytics Engineering, MS (p. 1019).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Students in the Applied Computer Science, BS (p. 1050) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:
Accelerated Option Requirements

Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students must register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students in all concentrations of the Applied Computer Science, BS program must register for:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3</td>
</tr>
</tbody>
</table>

Students in the Software Engineering and Bioinformatics concentrations of the Applied Computer Science, BS (p. 1050) program must also register for:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>3</td>
</tr>
</tbody>
</table>

Students in the Computer Game Design and Geography concentrations of the Applied Computer Science, BS (p. 1050) program must also register for one of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

For students in the Computer Game Design and Geography concentrations of the Applied Computer Science, BS (p. 1050) program, one of the 500 level courses will count as an elective towards their undergraduate degree.

Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

Applied Computer Science, BS/Information Security and Assurance, Accelerated MS

Overview

Highly-qualified students in the Applied Computer Science, BS (p. 1050) program have the option of obtaining an accelerated Information Security and Assurance, MS (p. 1072) program.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Students in the Applied Computer Science, BS (p. 1050) program can apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>10</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements

Students must complete all requirements for the BS and MS programs, with 6 credits overlapping.

Students register for two 500-level computer science core courses (6 credits) in place of the corresponding 400-level computer science courses, as part of the undergraduate degree requirements. Specifically, students must take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>6</td>
</tr>
</tbody>
</table>

Note:

For students in the Computer Game Design and Geography concentrations of the Applied Computer Science, BS (p. 1050) program, one of the 500 level courses will count as an elective towards their undergraduate degree.

Students complete all MS in Information Security and Assurance (p. 1072) core courses and apply the two courses from the above list toward the degree requirements.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate
Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Applied Computer Science, BS/Information Systems, Accelerated MS**

Overview

Highly-qualified students in the Applied Computer Science, BS (p. 1050) program have the option of obtaining an accelerated Information Systems, MS (p. 1075). See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Applied Computer Science, BS (p. 1050) program can apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlap.

Students register for two 500-level computer science core courses (6 credits) in place of the corresponding 400-level computer science courses, as part of the undergraduate degree requirements. Specifically, students must take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

Note:

Students complete all MS in Information Systems core courses and apply the two courses from above toward the elective requirements.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Applied Computer Science, BS/Software Engineering, Accelerated MS**

Overview

Highly-qualified students in the Applied Computer Science, BS (p. 1050) program have the option of obtaining an accelerated Software Engineering, MS (p. 1081). See AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Applied Computer Science, BS (p. 1050) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlap.

Students register for two 500-level computer science core courses (6 credits) in place of the corresponding 400-level computer science courses, as part of the undergraduate degree requirements. Specifically, students must take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

Note:

Students complete all Software Engineering, MS (p. 1081) core courses and apply the two courses from the above list toward the elective requirements.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the
beginning of the student’s final undergraduate semester, students must
complete a Bachelor’s/Accelerated Master’s Transition form that is
submitted to the Office of the University Registrar and the VSE Graduate
Admissions Office. At the completion of MS requirements, a master’s
degree is conferred.

Computer Science, BS
Banner Code: VS-BS-CS

Academic Advising
Phone: 703-993-1530
Email: csug@gmu.edu
Website: http://cs.gmu.edu/prospective-students/undergraduate-
programs/bs-in-computer-science/

The objectives of the BS in Computer Science Program relate to the
abilities of the graduates several years after graduation. The objectives
include:

• Foundation for successful careers in industry: Graduates of the
  program will have a broad understanding of the fundamental
  concepts, methodologies, tools, and applications of computer
  science. They will have the educational foundation that leads to
  successful careers in the computing industry.
• Foundation for graduate study: Graduates of the program will have
  the academic preparation for successful completion of rigorous
  graduate programs.
• Professional preparation: Graduates will have effective written and
  oral communication skills, and be able to work collaboratively in a
  professional and ethical manner.

The bachelor’s program in Computer Science is accredited by the

Admissions & Policies

Policies

Advanced Placement, Credit by Exam
A score of 4 on the Advanced Placement (AP) computer science exam
qualifies the student for credit in CS 112 Introduction to Computer
Programming (Mason Core) (p. 142). A score of 4 on the International
Baccalaureate (IB) computer science exam qualifies students for credit
in CS 112 Introduction to Computer Programming (Mason Core) (p. 142),
and a score of 5 or more qualifies students for credit in CS 211 Object-
Oriented Programming.

Change of Major
Students who are considering computer science as their major
must meet with the Volgenau School of Engineering Coordinator of
Undergraduate Advising, 2500 Nguyen Engineering Building. Students
considering a change of major to computer science must have a
GPA of at least 2.75 in all computer science and math courses, and
successfully completed one of CS 112 (http://catalog.gmu.edu/
preview_course_nopop.php?catoid=29&coid=302778) or CS
211 (http://catalog.gmu.edu/preview_course_nopop.php?
catoid=29&coid=302780), and one of MATH 113 (http://catalog.gmu.edu/
preview_course_nopop.php?catoid=29&coid=305052), MATH
114 (http://catalog.gmu.edu/preview_course_nopop.php?
catoid=29&coid=305053) or MATH 125 (http://catalog.gmu.edu/
preview_course_nopop.php?catoid=29&coid=305056), with a grade of B
or better. See Change of Major (p. 1013) for more information.

Computer Science, Computer Engineering Double Major
Computer Science majors can earn a double major in Computer Science
and Computer Engineering if they complete additional credits beyond
the 120 credits required for the Computer Science degree. The additional
credits must be part of an approved plan of study. For more information,
visit the department website.

Cooperative Education
Students may participate in the Mason cooperative education program or
a work-study program in the Washington, D.C. area.

Grades
Students must earn a C or better in any course intended to satisfy a
prerequisite for a computer science course. Computer science majors
may not use more than one course with grade of C- or lower toward
department requirements.

Repeating Courses
Students may attempt an undergraduate course taught by the Volgenau
School of Engineering twice. A third attempt requires approval of the
department offering the course. This policy does not apply to STAT 250
Introductory Statistics I (Mason Core) (p. 142), which follows the normal
university policy for repeating undergraduate courses.

The CS Department may not allow students to retake certain high-
demand CS courses in which they have already earned a grade of C or
better simply to improve their GPA.

Writing-Intensive Requirement
Computer science majors complete the writing-intensive requirement
through a sequence of projects and reports in CS 306 Synthesis
of Ethics and Law for the Computing Professional (Mason Core)
(p. 142) and CS 321 Software Engineering. Faculty members provide
feedback on students’ expository writing.

Termination from the Major
No math, science, or Volgenau School of Engineering course that is
required for the major may be attempted more than three times. Those
students who do not successfully complete such a course within three
attempts will be terminated from the major. Undeclared students in the
Volgenau School who do not successfully complete a course required for
a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued
failure to make adequate progress toward declaring or completing a
Volgenau School major will also be terminated. Adequate progress is
determined by the major program. For more information, see AP5.2.4
Termination from the Major (https://catalog.gmu.edu/policies/academic/
dergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully,
the third attempt must be no later than the next semester of enrollment,
excluding summers. Failure to take the course at that time will result
in termination from the major. A third attempt of a Volgenau School of
Engineering course requires support by the student’s major department
as well as permission by the department offering the course. This
permission is not guaranteed. If the student is unable to take the
course when required, the student may request an extension to a future
semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

Requirements

Degree Requirements
Total credits: 120

Computer Science Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 110</td>
<td>Essentials of Computer Science (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CS 211</td>
<td>Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 262</td>
<td>Introduction to Low-Level Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 306</td>
<td>Synthesis of Ethics and Law for the Computing Professional (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 321</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td>CS 471</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 483</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 35

1 Must be taken within the first year as an Applied Computer Science or Computer Science major.

Senior Computer Science

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 455</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 468</td>
<td>Secure Programming and Systems</td>
<td></td>
</tr>
<tr>
<td>CS 475</td>
<td>Concurrent and Distributed Systems</td>
<td></td>
</tr>
</tbody>
</table>

Select four additional courses from the following: 12

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 425</td>
<td>Game Programming I</td>
<td></td>
</tr>
<tr>
<td>CS 440</td>
<td>Language Processors and Programming Environments</td>
<td></td>
</tr>
<tr>
<td>CS 450</td>
<td>Database Concepts</td>
<td></td>
</tr>
</tbody>
</table>

Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 17

Note:

MATH 104 Trigonometry and Transcendental Functions, MATH 105 Precalculus Mathematics, MATH 108 Introductory Calculus with Business Applications (Mason Core) (p. 142), and courses with an IT designation (and any associated cross-listed courses) cannot be counted toward this degree.

Statistics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

1 Those planning to take MATH 352 Statistics may replace STAT 344 Probability and Statistics for Engineers and Scientists I with MATH 351 Probability.
Computer Science-Related Courses

Students may need to choose electives to satisfy prerequisites for the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 354</td>
<td>Probability and Statistics for Engineers and Scientists II</td>
<td></td>
</tr>
<tr>
<td>OR 335</td>
<td>Discrete Systems Modeling and Simulation</td>
<td></td>
</tr>
<tr>
<td>OR 441</td>
<td>Deterministic Operations Research</td>
<td></td>
</tr>
<tr>
<td>OR 442</td>
<td>Stochastic Operations Research</td>
<td></td>
</tr>
<tr>
<td>ECE 301</td>
<td>Digital Electronics</td>
<td></td>
</tr>
<tr>
<td>ECE 331</td>
<td>Digital System Design</td>
<td></td>
</tr>
<tr>
<td>ECE 332</td>
<td>Digital Electronics and Logic Design Lab</td>
<td></td>
</tr>
<tr>
<td>ECE 350</td>
<td>Embedded Systems and Hardware Interfaces</td>
<td></td>
</tr>
<tr>
<td>ECE 446</td>
<td>Device Driver Development</td>
<td></td>
</tr>
<tr>
<td>ECE 447</td>
<td>Single-Chip Microcomputers</td>
<td></td>
</tr>
<tr>
<td>ECE 511</td>
<td>Computer Architecture</td>
<td></td>
</tr>
<tr>
<td>SWE 432</td>
<td>Web Application Development</td>
<td></td>
</tr>
<tr>
<td>SWE 437</td>
<td>Software Testing and Maintenance</td>
<td></td>
</tr>
<tr>
<td>SWE 443</td>
<td>Software Architectures</td>
<td></td>
</tr>
<tr>
<td>SYST 371</td>
<td>Systems Engineering Management</td>
<td></td>
</tr>
<tr>
<td>SYST 470</td>
<td>Human Factors Engineering</td>
<td></td>
</tr>
<tr>
<td>PHIL 371</td>
<td>Philosophy of Natural Sciences</td>
<td></td>
</tr>
<tr>
<td>PHIL 376</td>
<td>Symbolic Logic</td>
<td></td>
</tr>
<tr>
<td>ENGH 388</td>
<td>Professional and Technical Writing</td>
<td></td>
</tr>
</tbody>
</table>

Any MATH or CS course numbered above 300 (except MATH 351) ¹

Total Credits: 6

¹ Those planning to take MATH 352 Statistics may replace STAT 344 Probability and Statistics for Engineers and Scientists I with MATH 351 Probability.

Communication

Students need three credits of communication:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Natural Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 12 credits of natural science</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

The courses should be intended for science and engineering students and must include a two course sequence with laboratories. Some approved combinations have a total of more than 12 hours.

Approved Two-Course Sequences with Laboratories

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103</td>
<td>Introductory Biology I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 106</td>
<td>Introductory Biology II Laboratory (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>OR 107</td>
<td>&amp; BIOL 107 and Intro Biology II Lecture (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>&amp; CHEM 213 and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>&amp; CHEM 214 and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core) (p. 142)</td>
<td>8</td>
</tr>
<tr>
<td>GEOL 102</td>
<td>&amp; GEOL 102 and Introductory Geology II (Mason Core) (p. 142)</td>
<td>8</td>
</tr>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>&amp; PHYS 161 and University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>&amp; PHYS 261 and University Physics II Laboratory (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Additional Mason Core

Students must complete all Mason Core (p. 142) requirements not fulfilled by major requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (p. 142) ¹</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 21

¹ CS majors must take the Natural Sciences section of ENGH 302 Advanced Composition (Mason Core) (p. 142).

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students must complete 8 elective credits</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 8
Honors

Honors in the Major
The Department of Computer Science offers a CS Honors Program for students with strong computational foundations and the drive to delve deeper into computing. The program is based on the bachelor of science in computer science and applied computer science curriculum and is distinct from the University Honors College curriculum.

Entry Requirements
Students must be seeking a Bachelor of Science in Computer Science or a Bachelor of Science in Applied Computer Science and must apply for entry into the CS Honors Program after completing 12 credits of CS courses. Applicants must meet the GPA requirements outlined below to enter into the CS Honors Program.

Honors Requirements
CS Honors Program students must fulfill all standard courses required by the Bachelor of Science in Computer Science or Applied Computer Science degree as well as the following additional requirements:

- GPA Requirement: Students must maintain an overall GPA of at least 3.50 and a GPA of at least 3.50 for courses which count towards the BS/CS or BS/ACS major including math, natural sciences, and all CS/SWE courses.
- Research Project Requirement: Students must complete a significant research project prior to graduation. Students should seek out a CS faculty member willing to serve as their research advisor for the project. The project should comprise original work by the student and be demonstrated via two channels:
  a. a written project report that is approved by the student’s research advisor and submitted to the department;
  b. a presentation of the project to an audience of students and/or faculty.
- Advanced Course Requirement: At least two Advanced Courses must be completed. A complete list of acceptable advanced courses is maintained by the CS department and is available on the department web site.

Accelerated Master’s

BS (selected)/Operations Research, Accelerated MS

Overview
Highly-qualified students in BS programs have the option of obtaining an accelerated Operations Research, MS (p. 1153).

Admission Requirements
Mason undergraduate students majoring in both engineering and non-engineering disciplines may apply to this option if 1) such an accelerated Operations Research, MS (p. 1153) pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs and by the SEOR department chair; 2) they have earned 90 undergraduate credits with an overall GPA of at least 3.30, and 3) they have completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Students must additionally complete MATH 203 prior to applying for the graduate program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair.

For the BS programs that allow undergraduate electives from the department of systems engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

BS (selected)/Statistical Science, Accelerated MS

Overview
Highly-qualified students in BS programs have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.

Admission Requirements
No specific undergraduate BS degree is required. Students enrolled in any BS degree may apply to the accelerated Statistical Science, MS (p. 1141) program if such an accelerated Statistical Science, MS pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs; and if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td></td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>
Accelerated Option Requirements

Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. (Credit may not be received for both STAT 474 and STAT 574; nor for both STAT 460 and STAT 560.) The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master's degree is conferred.

BS (selected)/Systems Engineering, Accelerated MS

Overview

Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Computer Science, MS (p. 1065).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in both engineering and non-engineering disciplines may apply to this option if 1) such an accelerated Systems Engineering, MS (p. 1170) pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs and by the SEOR department chair, 2) they have earned 90 undergraduate credits with an overall GPA of at least 3.30, and 3) they have completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair.

For the BS programs that allow undergraduate electives from the department of systems engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Computer Science, BS/Computer Science, Accelerated MS

Overview

Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Computer Science, MS (p. 1065).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Students in the Computer Science, BS (p. 1057) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models and CS 367 Computer Systems and Programming.

Accelerated Option Requirements

Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for two of the following courses in place of the corresponding 400-level courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the
Computer Science, BS/Data Analytics Engineering, Accelerated MS

Overview
Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Data Analytics Engineering, MS (p. 1019).

Admission Requirements
Students in the Computer Science, BS (p. 1057) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models and CS 367 Computer Systems and Programming.

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap. Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Computer Science, BS/Information Security and Assurance, Accelerated MS

Overview
Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Information Security and Assurance, MS (p. 1072).

Admission Requirements
Students in the Computer Science, BS (p. 1057) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models and CS 367 Computer Systems and Programming.

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap. Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Students complete all MS in Information Security and Assurance (p. 1072) core courses and apply the two courses from the above list toward the requirements.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Computer Science, BS/Information Systems, Accelerated MS

Overview
Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Information Systems, MS (p. 1075).
For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Computer Science, BS (p. 1057) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models and CS 367 Computer Systems and Programming.

**Accelerated Option Requirements**

Students must complete all requirements for the BS and MS programs, with 6 credits overlap. Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for two of the following courses in place of the corresponding 400-level courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Students complete all MS in Information Systems (p. 1075) core courses and apply the two courses from above toward the elective requirements.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Computer Science Minor**

Banner Code: CS

Academic Advising

Phone: 703-993-1530
Email: csinfo@gmu.edu
Website: https://cs.gmu.edu/current-students/undergraduates/minors/

**Admissions & Policies**

**Admissions**

Declaring a CS Minor

Students requesting a Computer Science Minor must have completed CS 112 Introduction to Computer Programming (Mason Core) (p. 142) or CS 211 Object-Oriented Programming with a grade of B or better.
Policies

Grades
No more than 3 credits of D grades may be used to satisfy requirements for the Computer Science Minor.

Program Requirements

The minor in computer science requires completion of at least 19 credits. Students should pay careful attention to prerequisites when selecting courses.

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 19-20

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CS 211</td>
<td>Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 10

Additional Computer Science Courses

Select three from the following: 9-10

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 222</td>
<td>Computer Programming for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>CS 262</td>
<td>Introduction to Low-Level Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 306</td>
<td>Synthesis of Ethics and Law for the Computing Professional (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CS 321</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CS 325</td>
<td>Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 332</td>
<td>Object-Oriented Software Design and Implementation</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td>CS 450</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CS 451</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 455</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 463</td>
<td>Comparative Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CS 465</td>
<td>Computer Systems Architecture</td>
<td>3</td>
</tr>
<tr>
<td>CS 468</td>
<td>Secure Programming and Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 471</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 480</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 483</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 484</td>
<td>Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9-10

Certificate Requirements
Total credits: 28

This certificate may be pursued on a full-time basis only.

Basic Computer Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 262</td>
<td>Introduction to Low-Level Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td>CS 471</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 16

Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 3
The Computer Science graduate program prepares students for research and professional practice in computer science and related technologies. The program includes both fundamentals and advanced work in the areas of artificial intelligence and databases, programming languages and software engineering, systems and networks, theoretical computer science, and visual computing. Graduate classes are divided into basic classes, which have no graduate course prerequisite, and advanced classes, which have a graduate class as a prerequisite. Graduate classes are generally offered in the late afternoon and evening. Financial aid in the form of graduate assistantships may be available for full-time degree-seeking students.

### Additional Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 483</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>AND</td>
<td>two of the following</td>
<td>6</td>
</tr>
<tr>
<td>CS 321</td>
<td>Software Engineering</td>
<td></td>
</tr>
<tr>
<td>CS 440</td>
<td>Language Processors and Programming Environments</td>
<td></td>
</tr>
<tr>
<td>CS 450</td>
<td>Database Concepts</td>
<td></td>
</tr>
<tr>
<td>CS 451</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>CS 455</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 465</td>
<td>Computer Systems Architecture</td>
<td></td>
</tr>
<tr>
<td>CS 468</td>
<td>Secure Programming and Systems</td>
<td></td>
</tr>
<tr>
<td>CS 480</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 484</td>
<td>Data Mining</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

### Requirements

**Degree Requirements**

Total credits: 30

**Required Courses and Plan of Study**

In addition to general university requirements, completion of the MS in CS requires 30 credits of graduate courses.

To ensure that students have uniform preparation for the core courses, all students are required to take CS 530 Mathematical Foundations of Computer Science and CS 531 Computer Systems and Fundamentals of Systems Programming as their first two courses in the program. Students have the opportunity to indicate that they have the requisite knowledge corresponding to CS 530 and CS 531 by passing an exam. The exams are given before classes begin in January and August, and can only be taken once. Students failing either one of the exams must take the equivalent course in their first semester. Students who successfully test out of CS 530 or CS 531 will be required to fulfill the credit requirement with other coursework chosen under advisement.

Courses are grouped in the following five broad areas: Artificial Intelligence and Databases, Programming Languages and Software Engineering, Systems and Networks, Theoretical Computer Science, and Visual Computing. The list of pre-approved courses with their areas follows.

All the following requirements should be satisfied for the MS in CS degree:

- CS 583 Analysis of Algorithms (from the Theoretical Computer Science area) and two additional core courses from two other areas must be successfully completed with a grade of B- or better.
- At least four courses (12 credits) must be chosen from the advanced courses in the list of pre-approved courses from at least three different areas.
- At least six courses, including two advanced courses, must be designated CS.
- At least eight courses must be taken from the list of pre-approved courses. Up to two computer science-related courses that are not on the list of pre-approved courses may be taken with the approval of the Computer Science Department.

### Admissions & Policies

#### Admissions

In addition to fulfilling Mason’s admission requirements for graduate study, applicants must meet the following requirements:

- Hold a baccalaureate degree that includes Data Structures and Algorithms (CS 310 Data Structures) Automata Theory and Formal Languages (CS 330 Formal Methods and Models), and Computer Architecture including Assembly Language (CS 367 Computer Systems and Programming and CS 465 Computer Systems Architecture). Students also must have completed Calculus I and II and a substantial course in discrete mathematics (such as MATH 125 Discrete Mathematics I (Mason Core) (p. 142)). Students with some deficiencies in preparation may be admitted provisionally pending completion of foundation courses in mathematics or computer science. Undergraduate credit earned for this purpose may not be applied toward the graduate degree.
- Earned a cumulative GPA of 3.00 for the last two years of undergraduate work, preferably with a major in a technical field such as computer science, mathematics, physical sciences, engineering, or information systems.
- Submit transcripts of all post secondary education, complete the self-evaluation section of the online application, (This information is used by the admissions committee to assess an applicant’s academic preparation for the MS program. Students with some deficiencies in preparation may be admitted provisionally pending completion of foundation courses required for the program), a goals statement, resume, two letters of recommendation, and an official GRE score (only required for those who have not earned a Bachelor’s degree from a US institution).
- International students must submit their English Proficiency scores.

Phone: 703-993-1530
Email: csgrad@gmu.edu
Website: http://cs.gmu.edu/prospective-students/ms-programs/ms-in-cs/
Plan of Study
Before the end of the second semester, students must have a plan of study approved by their academic advisor. This plan should be kept up to date by regular consultation with the academic advisor. A final signed version of the plan must be included when the student submits a graduation application.

Core Courses by Area

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
</tbody>
</table>

Programming Languages and Software Engineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td></td>
</tr>
<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td></td>
</tr>
</tbody>
</table>

Systems and Networks

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 531</td>
<td>Computer Systems and Fundamentals of Systems Programming</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td></td>
</tr>
</tbody>
</table>

Theoretical Computer Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td></td>
</tr>
</tbody>
</table>

Visual Computing

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td></td>
</tr>
</tbody>
</table>

Visual Computing: Must be successfully completed with a grade of B- or better

Preapproved Basic and Advanced MS CS Courses by Area

Artificial Intelligence and Databases

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
<tr>
<td>INFS 623</td>
<td>Web Search Engines and Recommender Systems</td>
<td></td>
</tr>
</tbody>
</table>

Advanced Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 650</td>
<td>Advanced Database Management</td>
<td></td>
</tr>
<tr>
<td>CS 657</td>
<td>Mining Massive Datasets with MapReduce</td>
<td></td>
</tr>
<tr>
<td>CS 667</td>
<td>Biometrics and Identity Management</td>
<td></td>
</tr>
<tr>
<td>CS 681</td>
<td>Instructable Cognitive Agents</td>
<td></td>
</tr>
<tr>
<td>CS 685</td>
<td>Autonomous Robotics</td>
<td></td>
</tr>
<tr>
<td>CS 687</td>
<td>Advanced Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 688</td>
<td>Machine Learning</td>
<td></td>
</tr>
<tr>
<td>CS 689</td>
<td>Planning Motions of Robots and Molecules</td>
<td></td>
</tr>
<tr>
<td>CS 775</td>
<td>Advanced Pattern Recognition</td>
<td></td>
</tr>
<tr>
<td>CS 782</td>
<td>Advanced Machine Learning</td>
<td></td>
</tr>
<tr>
<td>CS 787</td>
<td>Decision Guidance Systems</td>
<td></td>
</tr>
</tbody>
</table>

Programming Languages and Software Engineering

Basic Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td></td>
</tr>
<tr>
<td>SWE 620</td>
<td>Software Requirements Analysis and Specification</td>
<td></td>
</tr>
<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td></td>
</tr>
<tr>
<td>SWE 622</td>
<td>Distributed Software Engineering</td>
<td></td>
</tr>
</tbody>
</table>

Advanced Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 640</td>
<td>Advanced Compilers</td>
<td></td>
</tr>
<tr>
<td>ISA 681</td>
<td>Secure Software Design and Programming</td>
<td></td>
</tr>
<tr>
<td>SWE 645</td>
<td>Component-Based Software Development</td>
<td></td>
</tr>
<tr>
<td>SWE 721</td>
<td>Reusable Software Architectures</td>
<td></td>
</tr>
<tr>
<td>SWE 737</td>
<td>Advanced Software Testing</td>
<td></td>
</tr>
</tbody>
</table>

Systems and Networks

Basic Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 531</td>
<td>Computer Systems and Fundamentals of Systems Programming</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td></td>
</tr>
</tbody>
</table>

Advanced Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 635</td>
<td>Foundations of Parallel Computation</td>
<td></td>
</tr>
<tr>
<td>CS 658</td>
<td>Networked Virtual Environments</td>
<td></td>
</tr>
<tr>
<td>CS 672</td>
<td>Computer System Performance Evaluation</td>
<td></td>
</tr>
<tr>
<td>CS 673</td>
<td>Multimedia Computing and Systems</td>
<td></td>
</tr>
<tr>
<td>CS 675</td>
<td>Distributed Systems</td>
<td></td>
</tr>
<tr>
<td>CS 706</td>
<td>Concurrent Software Systems</td>
<td></td>
</tr>
<tr>
<td>CS 719</td>
<td>Scalable Internet Services</td>
<td></td>
</tr>
<tr>
<td>CS 755</td>
<td>Advanced Computer Networks</td>
<td></td>
</tr>
</tbody>
</table>

Performance Analysis of Computer Networks

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 811</td>
<td>Research Topics in Machine Learning and Inference</td>
<td></td>
</tr>
<tr>
<td>CS 880</td>
<td>Research Topics in Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 884</td>
<td>Advanced Topics in Computer Vision and Robotics</td>
<td></td>
</tr>
<tr>
<td>INFS 740</td>
<td>Database Programming for the World Wide Web</td>
<td></td>
</tr>
<tr>
<td>INFS 760</td>
<td>Advanced Database Management</td>
<td></td>
</tr>
<tr>
<td>INFS 772</td>
<td>Intelligent Agents and the Semantic Web</td>
<td></td>
</tr>
<tr>
<td>INFS 774</td>
<td>Enterprise Architecture</td>
<td></td>
</tr>
</tbody>
</table>
Additional Pre-approved CS Courses
These courses are not classified by area. Note that CS 695 Topics in Computer Science/CS 795 Advanced Topics in CS can be used to satisfy the breadth requirement if the area is listed in the syllabus for the course.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 695</td>
<td>Topics in Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CS 697</td>
<td>Independent Reading and Research</td>
<td>1-3</td>
</tr>
<tr>
<td>CS 795</td>
<td>Advanced Topics in CS</td>
<td>3</td>
</tr>
<tr>
<td>CS 798</td>
<td>Project Seminar</td>
<td>3</td>
</tr>
<tr>
<td>CS 799</td>
<td>Thesis</td>
<td>1-6</td>
</tr>
<tr>
<td>CS 895</td>
<td>Research Topics in CS</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in Cyber Security (CYSC)
In addition to the existing program requirements, MS CS degree students must satisfy the following requirements.

Students must take 5 courses from the following categories:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td>3</td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>Choose 2-3 elective courses:</td>
<td></td>
<td>6-9</td>
</tr>
<tr>
<td>CS 587</td>
<td>Introduction to Cryptography</td>
<td></td>
</tr>
<tr>
<td>ISA 564</td>
<td>Security Laboratory</td>
<td></td>
</tr>
<tr>
<td>ISA 673</td>
<td>Operating Systems Security</td>
<td></td>
</tr>
<tr>
<td>ISA 674</td>
<td>Intrusion Detection</td>
<td></td>
</tr>
<tr>
<td>ISA 681</td>
<td>Secure Software Design and Programming</td>
<td></td>
</tr>
<tr>
<td>ISA 763</td>
<td>Security Protocol Analysis</td>
<td></td>
</tr>
<tr>
<td>ISA 764</td>
<td>Security Experimentation</td>
<td></td>
</tr>
<tr>
<td>Choose 0-1 related course:</td>
<td></td>
<td>0-3</td>
</tr>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 600</td>
<td>Theory of Computation</td>
<td></td>
</tr>
<tr>
<td>CS 655</td>
<td>Wireless and Mobile Computing</td>
<td></td>
</tr>
</tbody>
</table>

Thesis (optional):
Students, with the consent of a faculty sponsor and faculty advisor, may also elect a 6-credit thesis (CS 799 Thesis). The thesis must be guided and approved by a committee of three appropriate faculty members and presented at an appropriate forum. If the faculty advisor and the program director agree that the thesis is appropriate for the concentration the students will need to complete the two courses from the category 1 and one course from the category 2 in addition to the thesis to complete the Concentration requirements.

Concentration in Machine Learning (ML)
In addition to the existing program requirements, MS CS degree students must satisfy the following requirements.

Students must take 5 courses from the following categories:
Required:

- CS 584: Theory and Applications of Data Mining (3 credits)
- CS 688: Machine Learning (3 credits)

Choose 2-3 elective courses:

- CS 657: Mining Massive Datasets with MapReduce (3 credits)
- CS 681: Instructable Cognitive Agents (3 credits)
- CS 747: Deep Learning (3 credits)
- CS 782: Advanced Machine Learning (3 credits)

Choose 0-1 related course:

- CS 580: Introduction to Artificial Intelligence (3 credits)
- CS 687: Advanced Artificial Intelligence (3 credits)
- CS 685: Autonomous Robotics (3 credits)
- CS 682: Computer Vision (3 credits)

Thesis (optional):

Students, with the consent of a faculty sponsor and faculty advisor, may also elect a 6-credit thesis (CS 799 Thesis). The thesis must be guided and approved by a committee of three faculty members and presented to the committee. If the faculty advisor and the program director agree that the thesis is appropriate for the concentration the student will need to complete the two courses from category 1 and one course from category 2 in addition to the thesis to complete the concentration requirements.

---

**Accelerated Master’s**

**Applied Computer Science, BS/Computer Science, Accelerated MS**

**Overview**

Highly-qualified students in the Applied Computer Science, BS (p. 1050) have the option of obtaining an accelerated Computer Science, MS (p. 1065).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Applied Computer Science, BS (p. 1050) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

**Accelerated Option Requirements**

Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for CS 583 Analysis of Algorithms and one of the following courses in place of the corresponding 400-level course:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
</tbody>
</table>

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

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**Computer Science, BS/Computer Science, Accelerated MS**

**Overview**

Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Computer Science, MS (p. 1065).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Computer Science, BS (p. 1057) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models and CS 367 Computer Systems and Programming.

**Accelerated Option Requirements**

Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for two of the following courses in place of the corresponding 400-level courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
</tbody>
</table>
Computer Science, PhD
Banner Code: VS-PHD-CS

Academic Advising
Phone: 703-993-1530
Email: csphd@gmu.edu
Website: http://cs.gmu.edu/prospective-students/phd-program/

The PhD program in Computer Science prepares students to become technical leaders in their fields of research. We have a world-class faculty with research expertise in a diverse set of computer science areas and our program is nationally ranked. Additionally, we are located in the suburbs of Washington, D.C at the center of one of the largest computer science and information technology corridors in the nation and a major center for science and engineering research and funding. Our PhD graduates have been highly successful both in academic and industrial positions.

The Computer Science PhD program requires coursework, qualifying and comprehensive examinations, and a doctoral dissertation that is first proposed and eventually defended. Mason’s general doctoral requirements (https://catalog.gmu.edu/policies/academic/graduate-policies/#text) apply to this program.

Admissions & Policies

Admissions
All applicants must have an undergraduate degree, and their prior academic work must show a strong academic background in computer science. In addition, the GRE General Test is required from every applicant. Finally, each applicant must provide a resume, brief statement of career goals and personal aspirations, as well as three letters of reference. Each application receives careful consideration from the PhD Admission Committee.

Policies

Program Requirements
The 72 hours of required doctoral-level credits typically consist of 48 credits of regular coursework and 24 credits of dissertation research.

Requirements

Degree Requirements
Total credits: 72

Doctoral Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The 48 credits of regular coursework required for the degree consists of the following courses:</td>
<td></td>
</tr>
<tr>
<td>CS 600</td>
<td>Theory of Computation (Must be completed with a B+ or better)</td>
<td>3</td>
</tr>
<tr>
<td>CS 700</td>
<td>Research Methodology in Computer Science (Must be completed with a B or better)</td>
<td>3</td>
</tr>
<tr>
<td>CS 701</td>
<td>Research Experience in Computer Science (Must be completed with a B or better)</td>
<td>3</td>
</tr>
<tr>
<td>CS 800</td>
<td>Computer Science Colloquium (Must enroll in course for two semesters)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Nine credits of advanced graduate courses</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>30 credits of graduate level courses in the Computer Science department or a field related to the student’s doctoral research area</td>
<td>30</td>
</tr>
</tbody>
</table>

Total Credits 48

1 Must be selected in consultation with the student’s advisor from a list maintained by the CS department. Independent study courses cannot be used towards the 9 credit hours that must be obtained in advanced graduate courses.
2 Must be selected in consultation with the student’s advisor.

Note:
With careful selection of courses, students may earn an MS degree as part of their PhD studies. CS 600 Theory of Computation, CS 700 Research Methodology in Computer Science and 9 credits of advanced graduate courses taken as part of the coursework for the PhD degree can be applied towards the MS degree, if the selected courses also satisfy the requirements of the MS degree.

Reduction of Credit
Students entering the PhD program with an approved MS degree can receive a waiver for up to 30 credits. In addition, the courses taken as part of the previous MS degree can be used to satisfy the other course requirements of the PhD degree. Reduction of credit and waiver of course requires the approval of the program director or designee and the dean or designee of the school.

Breadth Requirement
Students must demonstrate breadth of knowledge in computer science by obtaining superior grades in four graduate courses, including CS 583 Analysis of Algorithms. Collectively the four courses must span at least three of the following eight areas: Theoretical Computer Science,

The grades obtained in the four selected courses must meet the following requirements:

- Students must obtain an A- or better grade in at least three of the four courses
- In the fourth course, students must obtain a grade of B or better.

A list of courses that can be used to satisfy the breadth requirement is maintained by the CS department.

A course that is used to satisfy the breadth requirement may be repeated at most once (the grade received in the last attempt is considered when evaluating the breadth requirement).

To satisfy the breadth requirement, a student can use the grades (s)he received in the past, provided that at most five years elapsed since the course was taken. The course must have been taken at GMU. Exceptions to this rule are rare and require filing a petition with supplementary documents to the Computer Science department.

An alternative way to satisfy the breadth requirement is to pass the written qualifying exams (http://cs.gmu.edu/current-students/doctoral-students/qualifying-exam-policies-and-procedures). The exams are offered once every semester (usually two weeks before the semester begins).

To qualify, each student must pass exams in four areas, one of which is Foundations of Computer Science. The other three areas are chosen from these eight areas: computer systems, networks, compilers and languages, software construction, software testing, artificial intelligence, database systems, and information security.

The four exams must be attempted in the same semester, and a failed exam may be retaken once only, in the next semester. A student who fails to pass the four exams in two consecutive semesters is deemed to have failed to satisfy the breadth requirement, and is subject to termination.

If the student takes one or more written qualifying exams, the breadth requirement can only be satisfied by passing the qualifying exams (the criterion based on the course performance cannot apply).

**Dissertation Research**

A minimum of 24 credits of CS 998 Doctoral Dissertation Proposal and CS 999 Doctoral Dissertation must be completed, of which at least 12 must be in CS 999 Doctoral Dissertation. Only 24 credits of CS 998 Doctoral Dissertation Proposal and CS 999 Doctoral Dissertation may be applied toward the degree. Students may enroll in CS 998 Doctoral Dissertation Proposal only after passing the qualifying exams, and they may enroll in CS 999 Doctoral Dissertation only after advancing to candidacy.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>24</td>
</tr>
<tr>
<td>CS 999</td>
<td>Doctoral Dissertation (minimum 12 credits required)</td>
<td></td>
</tr>
</tbody>
</table>

**Comprehensive Exam**

To demonstrate the depth of knowledge in their intended area of research, the students must pass a comprehensive exam. The comprehensive exam is administered by a committee consisting of four members: the research advisor, an additional faculty member selected by the student, and two tenured CS faculty members selected by the PhD program director. One of the members selected by the program director chairs the committee.

The comprehensive exam has both written and oral components. The student is required to initiate the comprehensive exam procedure by submitting a form to the CS department at least four months prior to the target oral exam date. For the written component of the exam, the student prepares a critical review of research literature on a topic in the intended area of research. The report should synthesize the previous research in the target area with particular emphasis on open problems. The report should be 8-10 pages long and should contain a minimum of 20 references. The written report must be received by the committee members at least one month before the oral exam date.

The oral exam includes a presentation by the student based on the written report. The duration of the oral exam is typically two hours with the presentation limited to 20 minutes. The exam is public but only the members of the committee are permitted to ask questions.

The scope of the oral exam is defined by a reading list that includes research articles selected by the student and advisor, as well as the textbooks and articles related to the intended broader research area of the student selected by the other members of the committee and the CS department. The complete reading list, as well as the members of the examination committee will be finalized and communicated to the student by the CS department at least three months before the oral exam date. The comprehensive exam reading list becomes part of the student’s record.

When in both written and oral components at least three out of four committee members find the student’s performance satisfactory, the student passes the comprehensive exam. Otherwise the student is allowed to re-take the exam only once (with both written and components) and no later than the next semester. If the written report is found unsatisfactory by two or more committee members, the oral exam is not administered in that attempt.

The student may form a dissertation committee only after successfully passing the comprehensive exam.

**Milestones and Deadlines**

The students are expected to make steady progress in the program by completing the required course work and research-related milestones within the specified deadlines. Students who fail to meet the deadlines will be dismissed from the program unless there are extenuating circumstances approved by the department.

Successful completion of CS 700 Research Methodology in Computer Science: Within the first two semesters in the program

Successful completion of CS 701 Research Experience in Computer Science: Within the first 18 credits in the program

Determining the research advisor: Within the first 24 credits in the program (cannot be postponed beyond three years)

Satisfy the breadth requirement: Within the first 24 credits in the program (cannot be postponed beyond three years)
Successful completion of both instances of CS 800 Computer Science Colloquium: Within the first 36 credits in the program (cannot be postponed beyond five years)

Taking the comprehensive exam: Within the first 36 credits in the program (cannot be postponed beyond five years). The student must pass the exam in at most two attempts

Advancing to candidacy and graduation: Time limits are determined by the general university rules that apply to the PhD Programs.

Annual Evaluation
All students in the program (except the students in their first year in the PhD program) are required to complete an annual progress report (http://cs.gmu.edu/resources/student-forms). This report must be submitted by the end of September every year to the Administrative Coordinator of the CS PhD program.

The annual reports are reviewed by the members of the faculty to assess the student's progress in the program and feedback is provided to each student.

Dissertation Committee Selection
Each student must form a dissertation committee, comprising four or five individuals. Three members of the committee must be tenured or tenure-track faculty in the Computer Science Department. The fourth member should be a member of the George Mason University graduate faculty who is outside the department. The fifth member may be from outside the university. The chair of the dissertation committee, who must also be the dissertation director, must be tenured or tenure-track faculty in the Volgenau School. The committee must be approved by the chair of the Computer Science Department.

Dissertation Proposal
Each student must prepare a written dissertation proposal. While preparing this proposal, the student enrolls in CS 998 Doctoral Dissertation Proposal. The proposal must be made available to the committee at least two weeks in advance of the presentation. The proposal must be presented to and approved by the dissertation committee. The committee determines whether the proposal has merit and can lead to significant contributions to the area and whether the student has the knowledge and skills to complete the proposed work successfully and in a timely manner. Students may present their dissertation proposal only after passing the comprehensive exam, and the presentation may not be on the same day as the comprehensive exam. If the student fails to defend the proposal, the student may present a dissertation proposal a second time at a later date. Failure in the second attempt results in dismissal from the program. On completing this requirement successfully, the student is advanced to candidacy for the PhD degree.

Dissertation Preparation and Defense
While preparing the dissertation, the candidate enrolls in CS 999 Doctoral Dissertation. When the work is deemed complete, the dissertation is defended. The public defense is preceded by a predefense meeting in which only the candidate, the dissertation committee members, and the director of the PhD in Computer Science Program (or his or her representative) are present. If the committee approves, the candidate may then schedule the final public defense. There should be at least one month between the predefense meeting and the defense, and the defense must be announced at least two weeks in advance. The dissertation must be made available to the committee at least two weeks in advance of the defense. The entire dissertation committee must be present at the defense, unless an exception is approved by the director of the PhD in Computer Science Program in advance of the defense. The dissertation must make significant contributions to its area and be publishable in refereed journals or conferences. If the candidate defends the dissertation successfully, the dissertation committee recommends that the final form of the dissertation be completed under the supervision of the dissertation director and the graduate faculty of Mason accept the candidate for the PhD degree. If the candidate fails to defend the dissertation, the candidate may request a second defense, following the same procedures as for the initial defense. There is no time limit for this request other than general time limits for the doctoral degree and an additional predefense is not required. A candidate who fails a second attempt to defend the dissertation is dismissed from the program.

Information Security and Assurance Graduate Certificate
Banner Code: VS-CERG-ISA

Academic Advising
Phone: 703-993-1530
Email: csgrad@gmu.edu
Website: cs.gmu.edu/prospective-students/ms-programs/graduate-certificates/

This graduate certificate program is intended for students interested in science and methods for ensuring secrecy, integrity, availability, and legitimate use of information systems. The certificate may be pursued concurrently with any of the graduate programs in the Volgenau School.

The graduate certificate may only be pursued on a part-time basis.

Admissions & Policies

Admissions
Applicants must hold a baccalaureate degree from an accredited institution and have earned a GPA of 3.00 or higher in the last 60 credits. In addition, applicants must complete a self-assessment form, which can be obtained from the Computer Science Department. This form provides summary information concerning background and preparation for the program.

Applicants must possess knowledge equivalent to that provided by the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFS 501</td>
<td>Discrete and Logical Structures for Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>SWE 510</td>
<td>Object-Oriented Programming in Java</td>
<td>3</td>
</tr>
<tr>
<td>INFS 515</td>
<td>Computer Organization Course and Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 519</td>
<td>Program Design and Data Structures</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must also possess the equivalent knowledge of CS 555 Computer Communications and Networking and CS 571 Operating Systems, or the prerequisite courses required for the selected electives. Students not enrolled in a graduate degree program at Mason should apply for the certificate program through the Office of Graduate
Admission. Students already enrolled in a Mason graduate degree program should apply to the department for admission into the certificate program. Admission into the certificate program does not guarantee acceptance into any MS program.

Requirements

Certificate Requirements

Total credits: 12

This certificate may be pursued on a part-time basis only.

Students must complete four courses with an average grade of B or better for a total of 12 credits of graduate study.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Additional Courses

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA courses at the 600 and 700 level (p. 1843)¹</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ISA 564</td>
<td>Security Laboratory</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

¹ Excluding ISA 697 Topics in Information Security, ISA 796 Directed Readings in Information Security, ISA 797 Advanced Topics in Information Security, and ISA 798 Research Project.

Admissions & Policies

Admissions

Eligibility and Application Requirements

Applicants must hold a four-year (120-credit) baccalaureate degree from an accredited institution and have earned a GPA of 3.00 or better in the last 60 credits. Other requirements are as follows:

• Submit the appropriate application with two letters of recommendation from people directly knowledgeable of the applicant’s professional and academic competence, a one-page goals statement, and a work résumé.

• Complete the self-evaluation section of the online application. This information is used by the admissions committee to assess an applicant’s academic preparation for the MS program. Students with some deficiencies in preparation may be admitted provisionally pending completion of foundation courses required for the program.

• The GRE is only required for those who have not earned a Bachelor’s degree from a US Institution.

• International students must submit their English Proficiency scores.

Policies

Foundation Requirements

To ensure that students have an adequate background in mathematical and computer science, the program requires the following four foundation courses, or their equivalents: INFS 501 Discrete and Logical Structures for Information Systems, INFS 515 Computer Organization Course and Operating Systems, INFS 519 Program Design and Data Structures, and SWE 510 Object-Oriented Programming in Java.

Prospective students are asked to complete a departmental self-evaluation form, indicating whether previously taken courses may satisfy these foundation requirements. On acceptance, students are advised of the necessary foundation courses to be satisfactorily completed to meet this requirement. Foundation courses do not earn credit toward the MS degree; however, they must be successfully completed with a grade of B or better before enrolling in the core curriculum.

Students may test out to indicate that they have the requisite knowledge for those foundations courses. The exams are given before classes begin in January and August, and can only be taken once. Registration is not required; students need only be present at the date, time, and location specified with some form of photographic identification. Detailed information is available on the department web site. Students failing any one of the exams must take the equivalent course before enrolling in the core curriculum courses.
Advising

The department holds orientation meetings each January and August to advise newly admitted and continuing students. Members of the faculty are present to answer questions and offer advice concerning programs of study. Detailed information is available on the department web site.

The department also provides an advising function to students, as outlined in the student advising form available from the department. Each student is assigned a faculty advisor with whom to confer on matters related to degree requirements. A plan of study form for the MS degree should be completed and submitted by the student soon after admission to the program. This serves as a planning guide for the student.

Requirements

Degree Requirements

Total credits: 30

Completion of the degree program requires a minimum of 30 approved graduate credits (10 courses). Students must choose a concentration.

Required Core Courses

These courses provide the necessary background and fundamentals of information systems security and assurance. To continue in the program, students are required to obtain a B- or better grade in the core courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td>3</td>
</tr>
<tr>
<td>One of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>INF5 612</td>
<td>Principles and Practices of Communication Networks</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking 1</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Required for students who select the Network and System Security concentration.

Concentration in Applied Cyber Security (ACBS)

Students must take any five courses from the list below. At least three of the five courses must be designated ISA or CS.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select five courses from the following:</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>CS 667</td>
<td>Biometrics and Identity Management</td>
<td></td>
</tr>
<tr>
<td>ISA 650</td>
<td>Security Policy</td>
<td></td>
</tr>
<tr>
<td>ISA 652</td>
<td>Security Audit and Compliance Testing</td>
<td></td>
</tr>
<tr>
<td>ISA 681</td>
<td>Secure Software Design and Programming</td>
<td></td>
</tr>
<tr>
<td>ISA 763</td>
<td>Security Protocol Analysis</td>
<td></td>
</tr>
<tr>
<td>ISA 785</td>
<td>Research in Digital Forensics</td>
<td></td>
</tr>
<tr>
<td>CFRS 663</td>
<td>Operations of Intrusion Detection for Forensics</td>
<td></td>
</tr>
<tr>
<td>CFRS 761</td>
<td>Malware Reverse Engineering</td>
<td></td>
</tr>
<tr>
<td>CFRS 780</td>
<td>Advanced Topics in Computer Forensics</td>
<td></td>
</tr>
<tr>
<td>ECE 646</td>
<td>Applied Cryptography</td>
<td></td>
</tr>
</tbody>
</table>

Additional Courses

All students select two remaining courses from any combination of the following: 1

ISA 500, 600, and 700 level courses (p. 1843)

CS 500, 600, and 700 level courses (p. 1468)

Courses from the pre-approved electives list (follows)

ISA 799 | Thesis (must take 6 credits)              | 6       |

Pre-Approved Electives by Program

- Information Systems (INFS) (p. 1073)
- Software Engineering (SWE) (p. 1074)
- Computer Forensics (CFRS) (p. 1074)
- Electrical and Computer Engineering (ECE) (p. 1074)

Information Systems (INFS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF5 623</td>
<td>Web Search Engines and Recommender Systems</td>
<td>3</td>
</tr>
<tr>
<td>INF 740</td>
<td>Database Programming for the World Wide Web</td>
<td>3</td>
</tr>
</tbody>
</table>
Accelerated Master's

Applied Computer Science, BS/Information Security and Assurance, Accelerated MS

Overview
Highly-qualified students in the Applied Computer Science, BS (p. 1050) program have the option of obtaining an accelerated Information Security and Assurance, MS (p. 1072) program.

For more detailed information, see AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admission Requirements
Students in the Applied Computer Science, BS (p. 1050) program can apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 10

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlapping.

Students register for two 500-level computer science core courses (6 credits) in place of the corresponding 400-level computer science courses, as part of the undergraduate degree requirements. Specifically, students must take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Note:
Students complete all MS in Information Security and Assurance (p. 1072) core courses and apply the two courses from the above list toward the degree requirements.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

Computer Science, BS/Information Security and Assurance, Accelerated MS

Overview
Highly-qualified students in the Computer Science, BS (p. 1057) program have the option of obtaining an accelerated Information Security and Assurance, MS (p. 1072).

For more detailed information, see AP 6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admission Requirements
Students in the Computer Science, BS (p. 1057) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models and CS 367 Computer Systems and Programming.

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap. Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required.
for the undergraduate degree requirements. Specifically, students must register for two of the following courses in place of the corresponding 400-level courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Students complete all MS in Information Security and Assurance (p. 1072) core courses and apply the two courses from the above list toward the requirements.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

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**Information Technology, BS/Information Security and Assurance, Accelerated MS**

**Overview**

Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Information Security and Assurance, MS (p. 1072).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Information Technology, BS (p. 1122) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Criteria for admission are identical to criteria for admission to the Information Security and Assurance, MS (p. 1072) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFS 612</td>
<td>Principles and Practices of Communication Networks (satisfies IT 441 requirement in the BS program)</td>
<td>3</td>
</tr>
</tbody>
</table>

---

**Information Systems, MS**

**Banner Code:** VS-MS-ISYS

**Academic Advising**

Phone: 703-993-1530  
Email: csgrad@gmu.edu  
Website: cs.gmu.edu/prospective-students/ms-programs/ms-in-information-systems/

Modern information systems manage data, information and knowledge to support enterprise functions and decision making as well as human social activity over the Internet. Increasingly, these systems are distributed, collaborative, involve big data and hosted in the cloud.

The mission of the MSIS program is to allow students of diverse baccalaureate and professional backgrounds obtain a high-quality MS degree that:

- provides students with the theoretical knowledge and hands-on project experience needed to analyze, design, build, deploy, maintain, manage and promote effective organizational use of modern information systems;
- allows students to further specialize in related areas of big data, data and knowledge engineering, decision support systems, web-based software engineering and information security assurance; and,
- prepares students for careers in information systems in large and small organizations in both industry and government.

Career paths open to graduates include systems analyst, data administrator, database administrator, information architect, systems architect, decision analyst, data warehouse administrator, database application developer, web-based information systems designer and developer, information engineer, knowledge engineer, chief information officer, chief knowledge officer, chief privacy officer and project manager.
Admissions & Policies

Admissions

Eligibility and Application Requirements

Applicants must hold a four-year (120-credit) baccalaureate degree from an accredited institution and have earned a GPA of 3.00 or better in the last 60 credits. They also must meet the following requirements:

- Submit the appropriate application with two letters of recommendation from people directly knowledgeable of the applicant's professional and academic competence, a one-page goals statement, and a work résumé.
- Complete the self-evaluation section of the online application. This information is used by the admissions committee to assess an applicant’s academic preparation for the MS program. Students with some deficiencies in preparation may be admitted provisionally pending completion of foundation courses required for the program.
- The GRE is only required for those who have not earned a Bachelor’s degree from a US Institution.
- International students must submit their English proficiency scores.

Policies

Foundation Requirements

To ensure students have an adequate background in mathematical methods, computer technology, and programming knowledge, the program requires the following foundation courses or their equivalents:

- INFS 501 Discrete and Logical Structures for Information Systems
- INFS 515 Computer Organization Course and Operating Systems
- INFS 519 Program Design and Data Structures
- SWE 510 Object-Oriented Programming in Java

Prospective students are asked to complete a departmental self-evaluation form indicating whether previously taken courses may satisfy these foundation requirements. On acceptance, students are advised of the necessary foundation courses to be satisfactorily completed to meet this requirement. Foundation courses do not earn credit toward the MS degree; however, they must be successfully completed with a grade of B or better before enrolling in the core curriculum.

Students may test out to indicate they have the requisite knowledge for the foundations courses. The exams are given before classes begin in January and August, and can only be taken once. Registration is not required; students need only be present at the date, time, and location specified, and bring some form of photographic identification. Detailed information is available on the department web site. Students failing any of the exams must take the equivalent course before enrolling in the core curriculum.

Advising

The department holds orientation meetings in January and August to advise newly admitted and continuing students. Members of the faculty are present to answer questions and offer advice concerning programs of study. Detailed information is available on the department web site.

The department also provides an advising function to students, as outlined in the student advising form available from the department. Each student is assigned a faculty advisor with whom to confer on matters related to degree requirements. A plan of study form for the MS degree should be completed and submitted by the student soon after admission to the program. This plan serves as a guide for the student.

Requirements

Degree Requirements

Total credits: 30

Core Courses

To provide a common background in the fundamentals of information systems, the following core courses, which constitute the technical body of knowledge for the program, are required of all students. Students with strong academic background in mathematical foundations of computer science may have CS 530 Mathematical Foundations of Computer Science substituted for another elective course at the discretion of the program director.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 530</td>
<td>Mathematical Foundations of Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 612</td>
<td>Principles and Practices of Communication Networks</td>
<td>3</td>
</tr>
<tr>
<td>INFS 622</td>
<td>Information Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>INFS 740</td>
<td>Database Programming for the World Wide Web</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 15

Electives

Five courses selected from the lists which follow.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Five courses selected from the lists which follow.</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits: 15

Electives are organized into the following emphasis areas: database management, data mining, electronic commerce, software engineering, knowledge management, and information security and assurance.

In addition to the core courses taken as part of the MS-ISYS curriculum, students may choose an emphasis within the program by taking six courses from one of the emphasis areas listed below. Students may also choose electives spanning several emphasis areas; they may also plan their electives so as to obtain certificates offered by the department. A list of approved electives is given within emphasis areas and by graduate program. A full list follows. Special courses may be used as electives with prior approval of the student’s academic advisor and the graduate coordinator.

Students, with the consent of a faculty sponsor and faculty advisor, may also elect courses in individualized study, special topics, or a 6-credit thesis (INFS 799 Thesis), which is primarily intended for students planning to pursue a PhD in information technology with a concentration in information systems.

Database Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 530</td>
<td>Mathematical Foundations of Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CS 787</td>
<td>Decision Guidance Systems</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
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<tr>
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<td>---------</td>
</tr>
<tr>
<td>INFS 623</td>
<td>Web Search Engines and Recommender Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 740</td>
<td>Database Programming for the World Wide Web</td>
<td>3</td>
</tr>
<tr>
<td>INFS 760</td>
<td>Advanced Database Management</td>
<td>3</td>
</tr>
<tr>
<td>INFS 772</td>
<td>Intelligent Agents and the Semantic Web</td>
<td>3</td>
</tr>
<tr>
<td>INFS 796</td>
<td>Directed Readings in Information Systems</td>
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**Data Mining**

<table>
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<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
<td>3</td>
</tr>
<tr>
<td>CS 530</td>
<td>Mathematical Foundations of Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CS 657</td>
<td>Mining Massive Datasets with MapReduce</td>
<td>3</td>
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<tr>
<td>CS 782</td>
<td>Advanced Machine Learning</td>
<td>3</td>
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<tr>
<td>INFS 623</td>
<td>Web Search Engines and Recommender Systems</td>
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<td>INFS 796</td>
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**Electronic Commerce**

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<td>CS 530</td>
<td>Mathematical Foundations of Computer Science</td>
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<tr>
<td>INFS 640</td>
<td>Introduction to Electronic Commerce</td>
<td>3</td>
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<tr>
<td>INFS 770</td>
<td>Knowledge Management for E-Business</td>
<td>3</td>
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<td>INFS 772</td>
<td>Intelligent Agents and the Semantic Web</td>
<td>3</td>
</tr>
<tr>
<td>INFS 774</td>
<td>Enterprise Architecture</td>
<td>3</td>
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<tr>
<td>INFS 796</td>
<td>Directed Readings in Information Systems</td>
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<tr>
<td>ISA 656</td>
<td>Network Security</td>
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**Software Engineering**

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<tr>
<td>CS 530</td>
<td>Mathematical Foundations of Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td>3</td>
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<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td>3</td>
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<td>SWE 622</td>
<td>Distributed Software Engineering</td>
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<td>SWE 625</td>
<td>Software Project Management</td>
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<td>SWE 631</td>
<td>Software Design Patterns</td>
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<td>SWE 632</td>
<td>User Interface Design and Development</td>
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<td>SWE 637</td>
<td>Software Testing</td>
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<td>SWE 642</td>
<td>Software Engineering for the World Wide Web</td>
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<td>SWE 721</td>
<td>Reusable Software Architectures</td>
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<td>SWE 795</td>
<td>Advanced Topics in Software Engineering</td>
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**Knowledge Management**

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**Information Security and Assurance**

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<td>3</td>
</tr>
<tr>
<td>CS 531</td>
<td>Computer Systems and Fundamentals of Systems Programming</td>
<td>3</td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>ISA 652</td>
<td>Security Audit and Compliance Testing</td>
<td>3</td>
</tr>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td>3</td>
</tr>
<tr>
<td>ISA 673</td>
<td>Operating Systems Security</td>
<td>3</td>
</tr>
<tr>
<td>ISA 674</td>
<td>Intrusion Detection</td>
<td>3</td>
</tr>
<tr>
<td>ISA 681</td>
<td>Secure Software Design and Programming</td>
<td>3</td>
</tr>
<tr>
<td>ISA 763</td>
<td>Security Protocol Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ISA 764</td>
<td>Security Experimentation</td>
<td>3</td>
</tr>
<tr>
<td>ISA 785</td>
<td>Research in Digital Forensics</td>
<td>3</td>
</tr>
<tr>
<td>ISA 796</td>
<td>Directed Readings in Information Security</td>
<td>3</td>
</tr>
</tbody>
</table>

**Certificates**

Certificates may also be obtained in the following areas: Information Security and Assurance (p. 1071), and Software Engineering (p. 1085), with or without a concentration in Web-Based Software Engineering.

**Approved Electives**

**Elective Areas by Program**

- Information Systems (INFS) (p. 1077)
- Information Security and Assurance (ISA) (p. 1078)
- Software Engineering (SWE) (p. 1078)
- Computer Science (CS) (p. 1078)
- Electrical and Computer Engineering (ECE) (p. 1078)
- Operations Research (OR) (p. 1079)
- Psychology (PSYC) (p. 1079)
- Statistics (STAT) (p. 1079)
- Systems Engineering (SYST) (p. 1079)

**Information Systems (INFS)**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>INFS 623</td>
<td>Web Search Engines and Recommender Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 640</td>
<td>Introduction to Electronic Commerce</td>
<td>3</td>
</tr>
<tr>
<td>INFS 697</td>
<td>Topics in Information Systems</td>
<td>1-6</td>
</tr>
<tr>
<td>INFS 740</td>
<td>Database Programming for the World Wide Web</td>
<td>3</td>
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<td>INFS 760</td>
<td>Advanced Database Management</td>
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<tr>
<td>Code</td>
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<td>Credits</td>
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<tr>
<td>----------</td>
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</tr>
<tr>
<td>INFS 770</td>
<td>Knowledge Management for E-Business</td>
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</tr>
<tr>
<td>INFS 772</td>
<td>Intelligent Agents and the Semantic Web</td>
<td>3</td>
</tr>
<tr>
<td>INFS 774</td>
<td>Enterprise Architecture</td>
<td>3</td>
</tr>
<tr>
<td>INFS 796</td>
<td>Directed Readings in Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 797</td>
<td>Advanced Topics in Information Systems</td>
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**Information Security and Assurance (ISA)**

<table>
<thead>
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<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>ISA 564</td>
<td>Security Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ISA 650</td>
<td>Security Policy</td>
<td>3</td>
</tr>
<tr>
<td>ISA 652</td>
<td>Security Audit and Compliance Testing</td>
<td>3</td>
</tr>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td>3</td>
</tr>
<tr>
<td>ISA 673</td>
<td>Operating Systems Security</td>
<td>3</td>
</tr>
<tr>
<td>ISA 674</td>
<td>Intrusion Detection</td>
<td>3</td>
</tr>
<tr>
<td>ISA 681</td>
<td>Secure Software Design and Programming</td>
<td>3</td>
</tr>
<tr>
<td>ISA 697</td>
<td>Topics in Information Security</td>
<td>1-6</td>
</tr>
<tr>
<td>ISA 763</td>
<td>Security Protocol Analysis</td>
<td>3</td>
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<tr>
<td>ISA 764</td>
<td>Security Experimentation</td>
<td>3</td>
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<tr>
<td>ISA 785</td>
<td>Research in Digital Forensics</td>
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<td>ISA 797</td>
<td>Advanced Topics in Information Security</td>
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**Software Engineering (SWE)**

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<tbody>
<tr>
<td>SWE 620</td>
<td>Software Requirements Analysis and Specification</td>
<td>3</td>
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<tr>
<td>SWE 625</td>
<td>Software Project Management</td>
<td>3</td>
</tr>
<tr>
<td>SWE 626</td>
<td>Software Project Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>SWE 631</td>
<td>Software Design Patterns</td>
<td>3</td>
</tr>
<tr>
<td>SWE 632</td>
<td>User Interface Design and Development</td>
<td>3</td>
</tr>
<tr>
<td>SWE 642</td>
<td>Software Engineering for the World Wide Web</td>
<td>3</td>
</tr>
<tr>
<td>SWE 645</td>
<td>Component-Based Software Development</td>
<td>3</td>
</tr>
<tr>
<td>SWE 699</td>
<td>Special Topics in Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SWE 721</td>
<td>Reusable Software Architectures</td>
<td>3</td>
</tr>
<tr>
<td>SWE 763</td>
<td>Software Engineering Experimentation</td>
<td>3</td>
</tr>
<tr>
<td>SWE 795</td>
<td>Advanced Topics in Software Engineering</td>
<td>3</td>
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<tr>
<td>SWE 796</td>
<td>Directed Readings in Software Engineering</td>
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<tr>
<td>SWE 798</td>
<td>Research Project</td>
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**Computer Science (CS)**

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<tbody>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
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<tr>
<td>CS 530</td>
<td>Mathematical Foundations of Computer Science</td>
<td>3</td>
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<tr>
<td>CS 531</td>
<td>Computer Systems and Fundamentals of Systems Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>CS 635</td>
<td>Foundations of Parallel Computation</td>
<td>3</td>
</tr>
<tr>
<td>CS 640</td>
<td>Advanced Compilers</td>
<td>3</td>
</tr>
<tr>
<td>CS 650</td>
<td>Advanced Database Management</td>
<td>3</td>
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<tr>
<td>CS 657</td>
<td>Mining Massive Datasets with MapReduce</td>
<td>3</td>
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<tr>
<td>CS 662</td>
<td>Computer Graphics Game Technologies</td>
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<td>CS 672</td>
<td>Computer System Performance Evaluation</td>
<td>3</td>
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<td>CS 673</td>
<td>Multimedia Computing and Systems</td>
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<td>CS 681</td>
<td>Instructable Cognitive Agents</td>
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<tr>
<td>CS 682</td>
<td>Computer Vision</td>
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<tr>
<td>CS 683</td>
<td>Parallel Algorithms</td>
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<td>CS 684</td>
<td>Graph Algorithms</td>
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<tr>
<td>CS 685</td>
<td>Autonomous Robotics</td>
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<td>CS 686</td>
<td>Image Processing and Applications</td>
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<td>Research Methodology in Computer Science</td>
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<td>CS 706</td>
<td>Concurrent Software Systems</td>
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<tr>
<td>CS 752</td>
<td>Interactive Graphics Software</td>
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<td>CS 755</td>
<td>Advanced Computer Networks</td>
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<td>CS 756</td>
<td>Performance Analysis of Computer Networks</td>
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<tr>
<td>CS 773</td>
<td>Real-Time Systems Design and Development</td>
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<td>CS 777</td>
<td>Human-Computer Intelligent Interaction</td>
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<td>CS 779</td>
<td>Topics in Resilient and Secure Computer Systems</td>
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<td>CS 782</td>
<td>Advanced Machine Learning</td>
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**Electrical and Computer Engineering (ECE)**

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<td>Computer Architecture</td>
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<tr>
<td>ECE 521</td>
<td>Linear Systems and Control</td>
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<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
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<tr>
<td>ECE 535</td>
<td>Digital Signal Processing</td>
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<td>ECE 545</td>
<td>Digital System Design with VHDL</td>
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<td>ECE 548</td>
<td>Sequential Machine Theory</td>
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<td>ECE 584</td>
<td>Semiconductor Device Fundamentals</td>
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<td>ECE 586</td>
<td>Digital Integrated Circuits</td>
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<td>ECE 611</td>
<td>Advanced Computer Architecture</td>
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<td>ECE 612</td>
<td>Real-Time Embedded Systems</td>
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<td>ECE 620</td>
<td>Optimal Control Theory</td>
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<td>ECE 621</td>
<td>Systems Identification</td>
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<td>ECE 630</td>
<td>Statistical Communication Theory</td>
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<td>Error Control Coding</td>
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<td>ECE 635</td>
<td>Adaptive Signal Processing</td>
<td>3</td>
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<td>ECE 642</td>
<td>Design and Analysis of Computer Communication Networks</td>
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<td>ECE 643</td>
<td>Network Switching and Routing</td>
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<td>ECE 645</td>
<td>Computer Arithmetic</td>
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Applied Computer Science, BS/Information Systems, Accelerated MS

Overview
Highly-qualified students in the Applied Computer Science, BS (p. 1050) program have the option of obtaining an accelerated Information Systems, MS (p. 1075). See AP.6.7 Bachelor’s/ Accelerated Master’s Degrees (p. 93).

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Applied Computer Science, BS (p. 1050) program can apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

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<tr>
<td>CS 310</td>
<td>Data Structures</td>
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</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
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</table>

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlap.

Students register for two 500-level computer science core courses (6 credits) in place of the corresponding 400-level computer science courses, as part of the undergraduate degree requirements. Specifically, students must take

<table>
<thead>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
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<td>Analysis of Algorithms</td>
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<td>Select one of the following:</td>
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<td>CS 540</td>
<td>Language Processors</td>
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<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
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</tr>
<tr>
<td></td>
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</table>

Note:

Students complete all MS in Information Systems core courses and apply the two courses from above toward the elective requirements.
**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Computer Science, BS/Information Systems, Accelerated MS**

**Overview**

Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Information Systems, MS (p. 1075).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Computer Science, BS (p. 1057) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models and CS 367 Computer Systems and Programming.

**Accelerated Option Requirements**

Students must complete all requirements for the BS and MS programs, with 6 credits overlapping. Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must register for two of the following courses in place of the corresponding 400-level courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Students complete all MS in Information Systems (p. 1075) core courses and apply the two courses from above toward the elective requirements.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

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**Information Technology, BS/Information Systems, Accelerated MS**

**Overview**

Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Information Systems, MS (p. 1075).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Information Technology, BS (p. 1122) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Criteria for admission are identical to the criteria for admission to the Information Systems, MS (p. 1075) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with the following two courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems (satisfies IT 414 requirement in the BS program)</td>
<td>3</td>
</tr>
<tr>
<td>INFS 622</td>
<td>Information Systems Analysis and Design  (satisfies as one DTP concentration course in the BS program)</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Students must complete MATH 125 Discrete Mathematics I (Mason Core) (p. 142) as their discrete math requirement and IT 306 Data Structures and Algorithms in Java as part of their concentration requirements in the BS program.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

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**Software Engineering Minor**

**Banner Code:** SWE

**Academic Advising**

Phone: 703-993-1530  
Email: csinfo@gmu.edu  
Website: cs.gmu.edu/current-students/undergraduates/software-engineering-minor/
Admissions & Policies

Admissions
Declaring a Software Engineering Minor
Students requesting a software engineering minor must have completed CS 112 Introduction to Computer Programming (Mason Core) (p. 142) or CS 211 Object-Oriented Programming with a B or better.

Policies
General
Candidates for the minor in software engineering must complete 19 credits in software engineering with a minimum GPA of 2.00, 8 credits of which must be unique to the minor and not used for the major. For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Grades
No more than 3 credits of D grades may be used to satisfy minor requirements.

Requirements

Minor Requirements
Total credits: 19

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CS 211</td>
<td>Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select three from the following:</td>
<td>9</td>
</tr>
<tr>
<td>SWE 205</td>
<td>Software Usability Analysis and Design</td>
<td></td>
</tr>
<tr>
<td>SWE 332</td>
<td>Object-Oriented Software Design and Implementation</td>
<td></td>
</tr>
<tr>
<td>SWE 432</td>
<td>Web Application Development</td>
<td></td>
</tr>
<tr>
<td>SWE 437</td>
<td>Software Testing and Maintenance</td>
<td></td>
</tr>
<tr>
<td>SWE 443</td>
<td>Software Architectures</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 19

Software Engineering, MS
Banner Code: VS-MS-SWE

Academic Advising
Phone: 703-993-1530
Email: csgrad@gmu.edu
Website: cs.gmu.edu/prospective-students/ms-programs/ms-in-software-engineering/

The MS in Software Engineering provides specialized knowledge and experience in developing and modifying large, complex software systems. It emphasizes technical and human aspects of software engineering development. Software engineering spans all aspects of developing software, including requirements analysis, design, construction, testing, maintenance, economics, and management. A pragmatic approach to problem solving is the hallmark of a software engineer. Software engineers are concerned with the theoretical and practical aspects of technology, cost, and social impact of software systems that are effective, efficient, and flexible.

Software engineers are in demand in every segment of society affected by computing technology. Potential employers include all software vendors and Internet-based companies, electronic business organizations, businesses that build and sell computers, research and development laboratories, aerospace companies, government contractors, banks, insurance companies, and manufacturing organizations. The MS-SWE program educates future leaders of technical aspects of building and modifying high-quality software systems.

Successful applicants have a broad variety of undergraduate backgrounds, including computer science, science and mathematics, engineering, liberal arts, and business. Many students are working or have worked in the software industry.

The program and courses are revised regularly to stay abreast of the latest developments in software engineering. All classes are scheduled in the late afternoon and early evening to accommodate employed students.

Admissions
Students entering the MS program must have coursework or equivalent knowledge in the following areas: introductory programming in any language; knowledge of an object-oriented programming language such as Java, C++, or C#; data structures and algorithms; machine organization (such as those given in computer system architecture or assembly language courses); and topics in discrete mathematics, including sets, relations, functions, trees, graphs, and inductive proofs.

The level of knowledge required in these areas is equivalent to that taught in undergraduate courses and may be achieved by taking the following foundation courses from Mason:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFS 501</td>
<td>Discrete and Logical Structures for Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 515</td>
<td>Computer Organization Course and Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 519</td>
<td>Program Design and Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>SWE 510</td>
<td>Object-Oriented Programming in Java</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, it is desirable, though not required, that entering students have at least one year of work experience in building or modifying software systems.

Prospective students are asked to complete a departmental self-evaluation form, indicating whether previously taken courses may satisfy these foundation requirements. On acceptance, students are advised of the necessary foundation courses to be satisfactorily completed to meet this requirement. Foundation courses do not earn credit toward the MS degree; however, they must be successfully completed with a grade of B or better before enrolling in the core curriculum.
Students may test out to indicate they have the requisite knowledge for those foundation courses. The exams are given before classes begin in January and August, and can only be taken once. Registration is not required; students need only be present at the date, time, and location specified and bring some form of photographic identification. Detailed information is available on the department web site. Students failing any one of the exams must take the equivalent course before enrolling in the core curriculum courses.

Application Requirements
In addition to general admission requirements of the university, each applicant to the MS program must hold a four-year (120-credit) baccalaureate degree in an appropriate discipline from an accredited institution and have earned a GPA of 3.00 or better in the last 60 credits of undergraduate study. Other requirements are as follows:

- Provide a resume and a one- to two-page statement of educational and work experience in the computing field that includes a statement of career goals in software engineering.
- Complete the self-evaluation section of the online application. This information is used by the admissions committee to assess an applicant’s academic preparation for the MS program. Students with some deficiencies in preparation may be admitted provisionally pending completion of foundation courses required for the program.
- Submit the appropriate application with two letters of recommendation from people directly knowledgeable of the applicant’s professional and academic competence.
- The GRE is only required for those who have not earned a Bachelor’s degree from a US Institution.
- International students must submit their English Proficiency scores.

Acceptance into the MS program is based on an overall assessment of the applicant’s ability to complete the program of study satisfactorily. Well-qualified students with minor deficiencies may be admitted to the program in provisional status, with specified course work to be completed within a specified time.

Policies
Program Requirements
In addition to the general requirements of the university, the MS in Software Engineering requires a minimum of 30 graduate credits. The coursework is divided into three categories: a breadth requirement of 12 credits of core courses, a depth requirement of 9 credits of emphasis courses, and 9 credits of elective courses.

Advising
The department holds orientation meetings each January and August to advise incoming and continuing students. Members of the faculty are present to answer questions and offer advice concerning programs of study. Detailed information is available on the department web site.

The department also provides an advising function to students, as outlined in the student advising form available from the department. Each student is assigned a faculty advisor with whom to confer on matters related to degree requirements. A plan of study form for the MS degree should be completed and submitted by the student soon after admission; this plan serves as a guide for the student.

<table>
<thead>
<tr>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree Requirements</td>
</tr>
<tr>
<td>Total credits: 30</td>
</tr>
</tbody>
</table>

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td>3</td>
</tr>
<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td>3</td>
</tr>
<tr>
<td>SWE 632</td>
<td>User Interface Design and Development</td>
<td>3</td>
</tr>
<tr>
<td>SWE 637</td>
<td>Software Testing</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Software Engineering Related Courses

Students must take three courses from the following list: 9

Software Engineering
- Any SWE courses at the 600-level or above. (p. 2179)

Computer Science
- CS 540 Language Processors
- CS 550 Database Systems 1
- CS 555 Computer Communications and Networking
- CS 571 Operating Systems
- CS 675 Distributed Systems 2

Information Security and Assurance
- ISA 562 Information Security Theory and Practice
- ISA 650 Security Policy
- ISA 673 Operating Systems Security

Information Systems
- INFS 740 Database Programming for the World Wide Web

Operations Research
- OR 542 Operations Research: Stochastic Models

Total Credits 9

1 Credit will not be given for both INFS 614 and CS 550.
2 Credit will not be given for both SWE 622 and CS 675.

Electives
Students may select the remaining courses from the following list. Students may select courses not on this list with approval from the faculty advisor. Students, with the consent of a faculty sponsor and faculty advisor, may also complete a 6-credit thesis, which is primarily intended for students considering pursuing a PhD.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of allowed electives:</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>All Software Engineering (SWE) courses at the 600-level or above. (p. 2179)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Computer Science (CS) courses at the 500-level or above. (p. 1468)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
All Information Security and Assurance (ISA) courses at the 600-level or above. (p. 1843)
All Information Systems (INFS) courses at the 600-level or above. (p. 1847)
Any of the following Electrical and Computer Engineering courses:
- ECE 542 Computer Network Architectures and Protocols
- ECE 612 Real-Time Embedded Systems
Any of the following Operations Research courses:
- OR 531 Analytics and Decision Analysis
- OR 541 Operations Research: Deterministic Models
- OR 542 Operations Research: Stochastic Models
Any of the following Statistics courses:
- STAT 544 Applied Probability
- STAT 554 Applied Statistics I
Any of the following Systems Engineering courses:
- SYST 560 Introduction to Air Traffic Control
- SYST 659 Topics in Systems Engineering
- SYST 680 Principles of Command, Control, Communications, Computing, and Intelligence (C4I)
Any of the following Psychology courses:
- PSYC 530 Cognitive Engineering: Cognitive Science Applied to Human Factors
- PSYC 734 Seminar in Human Factors and Applied Cognition

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlap.

Students register for two 500-level computer science core courses (6 credits) in place of the corresponding 400-level computer science courses, as part of the undergraduate degree requirements. Specifically, students must take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

Note:
Students complete all Software Engineering, MS (p. 1081) core courses and apply the two courses from the above list toward the elective requirements.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Computer Science, BS/Software Engineering, Accelerated MS

Overview
Highly-qualified students in the Computer Science, BS (p. 1057) have the option of obtaining an accelerated Software Engineering, MS (p. 1081). For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Computer Science, BS (p. 1057) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 10

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap. Students register for 6 credits of CS 500-level basic courses in place of the corresponding CS 400-level courses required for the undergraduate degree requirements. Specifically, students must...
register for two of the following courses in place of the corresponding 400-level courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
Students complete all MS in Software Engineering (p. 1081) core courses and apply the two courses from the above list toward the elective requirements.

**Degree Conferral**
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Information Technology, BS/Software Engineering, Accelerated MS**

**Overview**
Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Software Engineering, MS (p. 1081).

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Admission Requirements**
Students in the Information Technology, BS (p. 1122) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Criteria for admission are identical to criteria for admission to the Software Engineering, MS (p. 1081) Program.

**Accelerated Option Requirements**
Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with the following two courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFS 501</td>
<td>Discrete and Logical Structures for Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>SWE 510</td>
<td>Object-Oriented Programming in Java</td>
<td>3</td>
</tr>
<tr>
<td>INFS 515</td>
<td>Computer Organization Course and Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 519</td>
<td>Program Design and Data Structures</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
Students must complete MATH 125 Discrete Mathematics I (Mason Core) (p. 142) as their discrete math requirement and IT 306 Data Structures and Algorithms in Java as part of their concentration requirements in the BS program.

**Software Engineering Graduate Certificate**

**Banner Code:** VS-CERG-SWE

**Academic Advising**
Phone: 703-993-1530
Email: csgrad@gmu.edu
Website: cs.gmu.edu/prospective-students/ms-programs/graduate-certificates/

This graduate certificate program provides knowledge, tools, and techniques to those who are working in or planning to work in software engineering but do not want to complete requirements for a master’s degree in the field. The certificate may be pursued concurrently with any of the graduate degree programs in the Volgenau School.

The graduate certificate may be pursued on a part-time or full-time basis.

**Admissions & Policies**

**Admissions**

**General Concentration**
Applicants must hold a baccalaureate degree from an accredited institution and have earned a GPA of 3.00 or higher in the last 60 credits. In addition, applicants must complete a self-assessment form, which can be obtained from the Computer Science Department. This form provides summary information concerning background and preparation for the program.

Applicants must possess knowledge equivalent to the following undergraduate courses: structured programming in a modern programming language, data structures, discrete mathematics, and machine organization. The level of knowledge may also be achieved by taking the following foundation courses at Mason:
In addition, it is desirable, but not necessary, for applicants to have at least one year of appropriate work experience in building or modifying software systems.

Applicants must submit a one- to two-page statement of educational and work experience in the computing field that includes a statement of career goals in software engineering. Students not enrolled in a graduate degree program at Mason should apply for the certificate program through the Office of Graduate Admission. Students already enrolled in a Mason graduate degree program should apply to the department for admission into the certificate program. Admission into the certificate program does not guarantee acceptance into any MS program.

**Web-Based Software Engineering Concentration**

Applicants must hold a baccalaureate degree from an accredited institution and have earned a GPA of 3.00 or better in the last 60 credits. Applicants must complete a self-assessment form, which can be obtained from the department or the department web site. The form provides information concerning background and preparation for the program.

Applicants must possess knowledge equivalent to that provided by the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFS 501</td>
<td>Discrete and Logical Structures for Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>SWE 510</td>
<td>Object-Oriented Programming in Java</td>
<td>3</td>
</tr>
<tr>
<td>INFS 515</td>
<td>Computer Organization Course and Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFS 519</td>
<td>Program Design and Data Structures</td>
<td>3</td>
</tr>
</tbody>
</table>

Students not enrolled in a graduate degree program at Mason should apply for the certificate program through the Office of Graduate Admission. Students already enrolled in a Mason graduate degree program should apply to the department for admission into the certificate program. Admission into the certificate program does not guarantee admission to any MS program.

**Policies**

Students must complete four courses with an average grade of B or higher for a total of 12 credits of graduate study.

**Certificate Requirements**

Total credits: 12

This certificate may be pursued on a full- or part-time basis.

**Requirements**

Students must complete all requirements within a concentration.

**Concentration in General (GEN)**

Select three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td>3</td>
</tr>
<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td>3</td>
</tr>
</tbody>
</table>

**Concentration in Web-Based Software Engineering (WBSE)**

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 632</td>
<td>User Interface Design and Development</td>
<td>3</td>
</tr>
<tr>
<td>SWE 637</td>
<td>Software Testing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Required Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 632</td>
<td>User Interface Design and Development</td>
<td>3</td>
</tr>
<tr>
<td>SWE 642</td>
<td>Software Engineering for the World Wide Web</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td></td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td></td>
</tr>
<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td></td>
</tr>
<tr>
<td>SWE 637</td>
<td>Software Testing</td>
<td></td>
</tr>
<tr>
<td>SWE 645</td>
<td>Component-Based Software Development</td>
<td></td>
</tr>
</tbody>
</table>
Department of Electrical and Computer Engineering

Phone: 703-993-1569
Email: ece@gmu.edu
Website: ece.gmu.edu

Undergraduate Programs
The undergraduate education mission of the ECE Department is to provide a quality education for electrical engineering and computer engineering students to support the needs of Virginia and the nation.

Program Educational Objectives for the BS ELEN and BS CPE
Graduates of the Electrical Engineering and the Computer Engineering programs are expected within three to five years of graduation to have:

- Established themselves as successful and productive engineering professionals or engaged in advanced study such as a graduate degree program.
- Worked effectively in team environments and individually.
- Fulfilled their responsibilities in the areas of ethics, continuing professional development, and effective communications.

Graduate Programs
Graduate programs leading to MS and PhD degrees prepare students for careers in industry, government, and academia. Graduate certificate programs provide well-defined targets for students who want to advance or update their knowledge in selected areas. The ECE Department offers the PhD in Electrical and Computer Engineering and master's degrees in computer engineering, electrical engineering, telecommunications, and digital forensics and cyber analysis, and certificates in communications, forensics, networking, and signal processing.

The ECE Department is committed to high standards of teaching and research excellence in communications, computer networks, bioengineering, digital systems design, microprocessor and embedded systems, distributed computing, high performance computing, signal and image processing, control systems, robotics, intelligent systems, systems integration, space-based systems, and nanoelectronics. Graduate students are offered a progressive environment with ample opportunities for the type of advanced research needed to confront the complex realities of the 21st century.

Courses in the department's graduate programs are offered during the evening or late afternoon hours to accommodate students who are employed full time. For those who enter a program on a full-time basis, some financial aid may be available in various forms, such as teaching assistantships or research assistantships.

Faculty

Professors
Ephraim, Gaj, Hayes (Chair), Ioannou, Jabbari, Levis, Li, Manitius, Mark, Mulpuri, Tian

Associate professors
Berry, Homayoun, Huang, Jones, Kaps, Kurtay (Associate Chair), Lorie, Nelson, Osgood, Pachowicz, Paris, Peixoto, Sasan, Wage, Zeng

Assistant professors
Chen, Lofaro, Nowzari, Pandula, Zhang

Research professors
Elder, Katona

Adjunct professors
Abgariah, Allen, Beatty, Bisson, Boci, Cohen, Cotae, Deavers, Douglas, Emdadi, Fowler, Gibson, Greenhill, Hassan, Hosford, Hrnjej, Hyde, Irvine, Kaur, Khan, Larkin, Lin, Maiden, Mangra, McFadden, Mehrrota, Narenji, Rothwell, Sabzevari, Sachdev, Schaefer, Sheppard, Steele, Shy, Talman, Tran, Williams, Wu, Yun

Emeritus faculty
Allnutt, Baraniecki, Beale, Black, Ceperley, Chang, Cook, Gertler, Griffiths (Dean Emeritus), Schaefer, Sutton, Tabak, Van Trees

Programs
- Advanced Networking Protocols for Telecommunications Graduate Certificate
- Computer Engineering, BS
- Computer Engineering, MS
- Digital Forensics and Cyber Analysis, MS (title pending SCHEV approval)
- Electrical Engineering, BS
- Electrical Engineering, MS
- Electrical and Computer Engineering, PhD
- Signal Processing Graduate Certificate
- Small Satellite Engineering Graduate Certificate
- Systems Engineering Graduate Certificate (ECE)
- Telecommunications Forensics and Security Graduate Certificate
- Telecommunications, MS
- Wireless Communications Graduate Certificate

Advanced Networking Protocols for Telecommunications Graduate Certificate
Banner Code: VS-CERG-ANPT
Academic Advising
MSN 2B5
This graduate certificate provides an in-depth understanding of advanced protocols used in a variety of telecommunications networks.

The graduate certificate may be pursued on a part-time or full-time basis.

### Requirements

#### Certificate Requirements

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 609</td>
<td>Interior Gateway Protocol (IGP) Routing</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 610</td>
<td>Border Gateway Protocol (BGP) Routing</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 515</td>
<td>Internet Protocol Routing: Lecture and Laboratory Course</td>
<td>3</td>
</tr>
<tr>
<td>or TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**

9

**Electives**

Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 515</td>
<td>Internet Protocol Routing: Lecture and Laboratory Course</td>
<td>1</td>
</tr>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>1</td>
</tr>
<tr>
<td>TCOM 611</td>
<td>Multi-Protocol Label Switching (MPLS)</td>
<td></td>
</tr>
<tr>
<td>TCOM 631</td>
<td>Voice Over IP</td>
<td></td>
</tr>
<tr>
<td>TCOM 662</td>
<td>Advanced Secure Networking</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**

6

1 May not be taken twice for credit. If a student takes TCOM 515 Interior Protocol Routing: Lecture and Laboratory Course and TCOM 535 The TCP/IP Suite of Internet Protocols in the core element, the course(s) may not be taken again in the elective element.

### Computer Engineering, BS

**Banner Code:** VS-BS-CPE

**Academic Advising**

MSN 1G5  
4400 University Drive  
Fairfax, VA 22030  
Phone: 703-993-1569  
Email: ece@gmu.edu

Website: https://ece.gmu.edu/undergraduate-studies/bachelors-programs/bs-computer-engineering

The field of computer engineering can be described as an amalgam of hardware and software design. Computer engineers are involved in research, design, development, production, and operation of a wide variety of digital systems, from integrated circuits through microcontrollers, multi-core processors, FPGA-based accelerators, to bigdata and cloud computing platforms. Reflecting the industry trend to integrate hardware and software development, the computer engineering program is built around computer-aided design tools that can simulate and assist in the design of new digital systems, such as those found in smartphones, tablets, robots, autonomous vehicles, drones, spacecraft, computer networks, smart factories, defense systems, and the internet-of-things. Advanced languages, such as VHDL and Python, and software tools, such as those used for FPGA- and ASIC-design and simulation, can be used to model hardware and software functionality from the system and architecture level down to the gate and transistor levels. Design, optimization, verification, and testing methodology involving these tools are taught in the program.

The Department of Electrical and Computer Engineering is staffed by 33 full-time professors and several part-time professors.

The bachelor’s program in Computer Engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

### Career Opportunities

Career opportunities exist in engineering design and development such as hardware/software co-design and integration, embedded system programming, mobile system and application development, robot and drone design, and cloud and big data computing. Other opportunities include engineering management, consultancy, technical sales, and patent law. The program provides a strong preparation for graduate study.

### Specializations

The curriculum provides a strong background in the fundamentals of computer engineering. A number of technical elective specializations are offered, ranging from primarily hardware-oriented to those that are more software-oriented. These include robotics and embedded systems, computer networks, Internet of Things, and Hardware and System Security. The curriculum includes 9 credits of senior technical electives, and 3 credits of senior advanced design project, which may be used for specialization in one of these technical areas.

### Additional Information

The requirements for the degree may be satisfied on a full-time or part-time basis. Cooperative education provides students the opportunity to integrate paid career-related work experience with classroom learning. Academic credit towards the completion of major requirements cannot be given for co-op experience. In addition to the usual financial aid available through the Office of Student Financial Aid, computer engineering majors are encouraged to apply for scholarships provided by various professional societies and industrial organizations in their field.
Admissions & Policies

Policies
For policies governing all undergraduate degrees, see AP:5 Undergraduate Policies (p. 87).

Writing-Intensive Requirement
Mason’s writing-intensive requirement is satisfied by the following two courses: ECE 333 Linear Electronics I and ECE 491 Engineering Seminar in which faculty provide writing instruction and feedback on student technical writing assignments. Drafts and revisions are required.

Change of Major
See Change of Major (p. 1013) for more information.

Double Major and Minor Programs for Computer Engineering and Electrical Engineering
Computer Engineering majors and Electrical Engineering majors can earn degrees with double majors in a number of disciplines. Computer Engineering and Computer Science are frequently combined. Electrical Engineering has been combined with Computer Engineering, Mechanical Engineering, Computer Science, Physics, or Math. Details are available in the department brochures or at the Volgenau School website (http://volgenau.gmu.edu). There are several minors available for students in the ECE Department including the Mechanical Engineering minor (p. 1139), Bioengineering minor and others as listed in the catalog.

Grade Requirements
All computer engineering students are strongly encouraged to see their major faculty advisor each semester before course registration.

Students must complete each ECE, ENGR, BENG, CS, MATH, PHYS and STAT course presented as part of the required 126 credits for the degree with a grade of C or better.

Students must also complete any course required by the program that is a prerequisite to another course applicable to the degree with a grade of C or better.

Termination from the Major
No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP:5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

Requirements

Degree Requirements
Total credits: 126

Electrical and Computer Engineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 101</td>
<td>Introduction to Electrical and Computer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECE 201</td>
<td>Introduction to Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 220</td>
<td>Continuous-Time Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 285</td>
<td>Electric Circuit Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 286</td>
<td>Electric Circuit Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 331</td>
<td>Digital System Design</td>
<td>3</td>
</tr>
<tr>
<td>ECE 332</td>
<td>Digital Electronics and Logic Design Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 333</td>
<td>Linear Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 334</td>
<td>Linear Electronics Lab I</td>
<td>1</td>
</tr>
<tr>
<td>ECE 350</td>
<td>Embedded Systems and Hardware Interfaces</td>
<td>3</td>
</tr>
<tr>
<td>ECE 445</td>
<td>Computer Organization</td>
<td>3</td>
</tr>
<tr>
<td>ECE 447</td>
<td>Single-Chip Microcomputers</td>
<td>4</td>
</tr>
<tr>
<td>ECE 448</td>
<td>FPGA and ASIC Design with VHDL</td>
<td>4</td>
</tr>
<tr>
<td>ECE 465</td>
<td>Computer Networking Protocols</td>
<td>3</td>
</tr>
<tr>
<td>ECE 491</td>
<td>Engineering Seminar</td>
<td>1</td>
</tr>
<tr>
<td>ECE 492</td>
<td>Senior Advanced Design Project I (Mason Core)</td>
<td>1</td>
</tr>
<tr>
<td>ECE 493</td>
<td>RS: Senior Advanced Design Project II (Mason Core)</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits 44

Students who would like to complete a more challenging senior design project have the option of enrolling in ECE 392 Engineering Design Studio to gain a semester head start in the design process.

Technical Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 370</td>
<td>Robot Design</td>
<td>9</td>
</tr>
</tbody>
</table>

Select 9 credit hours from the following:
### Computer Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CS 211</td>
<td>Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 222</td>
<td>Computer Programming for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 471</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 16

### Mathematics and Statistics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core)</td>
<td>3 (p. 142)</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

### Physics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core)</td>
<td>3 (p. 142)</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core)</td>
<td>1 (p. 142)</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core)</td>
<td>3 (p. 142)</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core)</td>
<td>1 (p. 142)</td>
</tr>
</tbody>
</table>

Total Credits: 8

### Engineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 107</td>
<td>Introduction to Engineering (Mason Core)</td>
<td>2 (p. 142)</td>
</tr>
</tbody>
</table>

Total Credits: 2

### Concentrations

Concentrations are available in the computer engineering baccalaureate program. Completion of specific courses leads to one of these designations on the student’s transcript on graduation. Concentration requirements may also meet some or all of the Technical Elective requirements.

**Available Concentrations:**
- Computer Networks (CNWK) (p. 1089)
- Embedded Systems (EMSY) (p. 1090)
- Hardware and System Security (HSYS) (p. 1090)
- Internet of Things (INOT) (p. 1090)
- Robotics (ROB) (p. 1090)

**Computer Networks (CNWK)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 465</td>
<td>Computer Networking Protocols</td>
<td>3</td>
</tr>
</tbody>
</table>

Select three from the following: 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 446</td>
<td>Device Driver Development</td>
<td>3</td>
</tr>
<tr>
<td>ECE 460</td>
<td>Communication and Information Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 462</td>
<td>Data and Computer Communications</td>
<td>3</td>
</tr>
<tr>
<td>ECE 463</td>
<td>Digital Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 476</td>
<td>Cryptography Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ECE 531</td>
<td>Introduction to Wireless Communications and Networks</td>
<td>3</td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td>3</td>
</tr>
</tbody>
</table>
### Embedded Systems (EMSY)

**Code** | **Title** | **Credits**
---|---|---
ECE 447 | Single-Chip Microcomputers | 4
Select three from the following:
- ECE 421 Classical Systems and Control Theory
- ECE 446 Device Driver Development
- ECE 510 Real-Time Concepts
- ECE 516 Mobile Systems and Applications
- ECE 530 Sensor Engineering
- ECE 580 Small Spacecraft Engineering

Total Credits: 13

### Hardware and System Security (HSYS)

**Code** | **Title** | **Credits**
---|---|---
ECE 465 | Computer Networking Protocols | 6
ECE 505 | Hardware Security | 6
Select two from the following:
- ECE 462 Data and Computer Communications
- CYSE 425 Secure RF Communications
- CYSE 476 Cryptography Fundamentals

Total Credits: 12

### Internet of Things (INOT)

**Code** | **Title** | **Credits**
---|---|---
ECE 465 | Computer Networking Protocols | 6
ECE 508 | Internet of Things | 6
Select two from the following:
- ECE 462 Data and Computer Communications
- CYSE 476 Cryptography Fundamentals
- ECE 510 Real-Time Concepts
- ECE 530 Sensor Engineering

Total Credits: 12

### Robotics (ROB)

**Code** | **Title** | **Credits**
---|---|---
ECE 370 | Robot Design | 7
ECE 447 | Single-Chip Microcomputers | 7
Select two from the following:
- ECE 421 Classical Systems and Control Theory
- ECE 424 Modern Control Systems Design
- ECE 450 Mobile Robots
- ECE 470 Introduction to Humanoid Robotics
- ECE 510 Real-Time Concepts
- ECE 521 Linear Systems and Control
- ECE 530 Sensor Engineering

Total Credits: 13

### English, Communication, and Economics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142) (Natural Sciences and Technology section)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 100 or COMM 101</td>
<td>Public Speaking (Mason Core) (p. 142) Fundamentals of Communication (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 9

### Additional Mason Core

Students must complete all Mason Core (p. 142) requirements not fulfilled by major requirements. Mason Core courses should be selected from the department’s list of approved courses. The Synthesis Mason Core requirement is satisfied by ECE 492 Senior Advanced Design Project I (Mason Core) (p. 142) plus ECE 493 RS: Senior Advanced Design Project II (Mason Core) (p. 142). All students must submit at least 24 credits of social science and humanities coursework, which is normally satisfied by the 24 credits of Mason Core social science and humanities courses listed here and in previous sections.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (p. 142)</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

1. Lower-level.

### Accelerated Master’s

#### BS (selected)/Operations Research, Accelerated MS

**Overview**

Highly-qualified students in BS programs have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Mason undergraduate students majoring in both engineering and non-engineering disciplines may apply to this option if 1) such an accelerated Operations Research, MS (p. 1153) pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs and by the SEOR department chair, 2) they have earned 90 undergraduate credits with an overall GPA of at least 3.30, and 3) they have completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.
Students must additionally complete MATH 203 prior to applying for the graduate program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master's level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair.

For the BS programs that allow undergraduate electives from the department of systems engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

**BS (selected)/Statistical Science, Accelerated MS**

**Overview**

Highly-qualified students in BS programs have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.

For more detailed information, see AP.6 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

No specific undergraduate BS degree is required. Students enrolled in any BS degree may apply to the accelerated Statistical Science, MS (p. 1141) program if such an accelerated Statistical Science, MS pathway is allowable from the student's BS program, which will be determined by the academic advisors of both the BS and MS programs; and if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

- **MATH 213** Analytic Geometry and Calculus III 3
- **MATH 203** Linear Algebra 3
  - or **MATH 321** Abstract Algebra 3
- **STAT 250** Introductory Statistics I (Mason Core) (p. 142) 3
  - or **STAT 344** Probability and Statistics for Engineers and Scientists I
- **STAT 346** Probability for Engineers 3
  - or **MATH 351** Probability 3
- **STAT 362** Introduction to Computer Statistical Packages 3

**Accelerated Option Requirements**

Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. (Credit may not be received for both STAT 474 and STAT 574; nor for both STAT 460 and STAT 560.) The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master's degree is conferred.

**BS (selected)/Systems Engineering, Accelerated MS**

**Overview**

Highly-qualified students in BS programs have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Mason undergraduate students majoring in both engineering and non-engineering disciplines may apply to this option if 1) such an accelerated Systems Engineering, MS (p. 1170) pathway is allowable from the student's BS program, which will be determined by the academic advisors of both the BS and MS programs and by the SEOR department chair, 2) they have earned 90 undergraduate credits with an overall GPA of at least 3.30, and 3) they have completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master's level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair.

For the BS programs that allow undergraduate electives from the department of systems engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.
Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Computer Engineering, BS/Computer Engineering, Accelerated MS
Overview
The university offers highly-qualified students in the Computer Engineering, BS (p. 1087) the option of obtaining an accelerated Computer Engineering, MS (p. 1092).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Students in the Computer Engineering, BS (p. 1087) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of 3.25. Criteria for admission are identical to criteria for admission to the Computer Engineering, MS (p. 1092) program.

Accelerated Option Requirements
Students must complete all credits that satisfy the requirements for the BS and MS programs, with 6 credits overlap.

Students take 6 credits of 500-level courses as part of their technical electives or substitutes for required courses as part of their 126-credit undergraduate program. The specific courses that may be taken and applied to the accelerated program will be specified by the ECE Department.

Students admitted to the accelerated program must maintain an overall GPA of at least 3.25 during the entire BS/MS program and present a GPA of at least 3.25 for the 24 credits of graduate work submitted for the MS degree.

Students may take additional graduate-level courses as part of their BS technical electives with advisor approval. These additional graduate-level courses will not count toward the MS degree.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Computer Engineering, MS
Banner Code: VS-MS-CPE

Admissions & Policies
Admissions
Categories of Admission
Students may be admitted into one of the following categories: degree, provisional, or nondegree. Provisional admission is reserved for domestic students whose past performance provides reasonable, but not strong, evidence of ability to pursue graduate work. To advance to degree status, a provisional student must achieve a 3.00 GPA after 12 credits, remove all undergraduate deficiencies by completing the corresponding courses with grades of B or better, and receive a B or better in two core courses specific to the student’s selected program and specialization.

The nondegree category is used primarily by students who want to take courses but not necessarily pursue a degree. Nondegree students seeking to enter degree programs must formally apply for admission.

Requirements
To be considered for admission to the master’s program, applicants should have a baccalaureate degree in electrical engineering, computer engineering, or a closely-related discipline from an accredited program with a reputation for high academic standards, and have earned a GPA of B or better during the last 60 credits. Other requirements are as follows:

- Two letters of recommendation, preferably from academic references or references in industry or government who hold advanced degrees and are familiar with the applicant’s professional accomplishments
- Resume and detailed statement of career goals and aspirations
• For students who have not earned a bachelor's degree from a U.S. university, satisfactory performance on the GRE
• For applicants who have not earned an academic degree in an English-speaking country (as defined here (p. 71)), a satisfactory score on any of the English proficiency examinations accepted by Mason, namely, TOEFL, IELTS, or PTE. Satisfactory scores are specific to Volgenau School of Engineering and are listed here (https://catalog.gmu.edu/admissions/international-students/#text).

Non-ECE Students
Students with BS or MS degrees in ECE-related disciplines (for example, computer science, mathematics, mechanical engineering, physics, or electrical engineering technology) are encouraged to apply for admission. They may initially be admitted into the provisional category and advance to degree status by satisfying requirements described in the Admissions Categories section. Such students may also be advised to take some courses from the undergraduate electrical or computer engineering curriculum, according to their intended specialization and specific backgrounds.

Policies

Student Advising
Newly-admitted graduate students must consult with the ECE graduate coordinator before they register for classes. Students should make an appointment by calling the ECE office. Students are expected to select a specialization from those available in each MS degree program. Students then are assigned an academic advisor from that specialization.

GPA Requirements
A maximum of 6 credits of courses with grades of C or B- may be applied toward the degree. The student must present a GPA of at least 3.00 for all courses submitted for the degree.

Program Requirements
Students must complete a minimum of 30 graduate credits beyond the bachelor’s degree. This work must represent a cohesive set of courses leading to comprehensive knowledge in one specialized area of computer engineering; it cannot be a set of disjointed courses.

Plan of Study
Before completing 6 credit hours of coursework, each student must submit to the department a plan of study that has been approved by the academic advisor. This plan should be kept up to date by regular consultation with the academic advisor. A final, signed version of the plan must be turned in when the student submits a graduation application.

Requirements

Degree Requirements
Total credits: 30

Core Courses
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>ECE 511</td>
<td>Computer Architecture</td>
<td>6</td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td></td>
</tr>
</tbody>
</table>

ECE 545  Digital System Design with VHDL
ECE 548  Sequential Machine Theory

Total Credits  6

1 Requires B or better in each course.

ECE or CS Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select a minimum of 3 ECE or CS courses, at the 600 level and above, including doctoral courses (800 and 900 levels)</td>
<td>9</td>
</tr>
</tbody>
</table>

Total Credits  9

1 Not including ECE 798 Research Project or ECE 799 Master's Thesis
2 Requires a grade of B or better in each.

Electives
Electives should be chosen either from the list of pre-approved electives strongly suggested for a given specialization area or from the list of elective courses common for all specialization areas. Elective courses from the latter list must be approved by the student’s advisor prior to the registration for a given course.

The plan of study usually has no fewer than 15 credits of courses designated ECE.

Lists of courses appropriate for specialization areas, such as digital systems design, microprocessor and embedded systems, digital signal processing, computer networks, and network and system security, are available on the ECE website. A self-defined specialization must include components of hardware and software development and the corresponding plan of study should comprise courses from ECE and the Computer Science Departments.

Seminar Requirement
Graduate students are expected to participate actively in the exchange of knowledge and ideas in their discipline. Towards this objective, all degree candidates must attend a minimum of 6 graduate seminars approved for the degree program. Approved seminars are publicized on the departmental webpage.

To demonstrate completion of the seminar requirement, students must register for ECE 795 Engineering Seminar in their final semester. The department office will verify that the seminar requirement has been met and submit a grade of S (satisfactory) upon completion of the requirement. Students who have not met the seminar requirement in their final semester must continue to register for ECE 795 Engineering Seminar in subsequent semesters until the requirement is met.

Thesis/Scholarly Paper Option
To complete the program, students may select one of the following options:

Thesis Option
Students who select this option must complete:
The thesis is particularly recommended for those students who wish to develop and document their research skills or contemplate subsequent enrollment in a PhD program. The thesis involves a research effort, which is conducted under the guidance of a faculty advisor. In some cases, permission may be granted to complete a portion of the work at the student’s place of employment. The final written thesis and oral defense are approved by the student’s advisory committee.

For the Electrical Engineering program (p. 1103), this committee consists of at least three full-time faculty members, including two from the student’s major specialization, and one from outside the specialization. For the Computer Engineering Program (p. 1092), this committee consists of at least three full-time faculty members, including two affiliated with the MS in Computer Engineering (p. 1092) Program, one of whom must be from the ECE Department. This thesis students may not register for ECE 798 Research Project. Students must register for at least 3 credits of thesis for their first thesis semester. Following their first thesis semester, they must register for at least 1 credit of thesis each fall and spring semester until graduation.

**Scholarly Paper Option**

Students who select to complete their degree program with a scholarly paper must:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 797</td>
<td>Scholarly Paper</td>
<td></td>
</tr>
<tr>
<td>Complete</td>
<td>30 credits of coursework</td>
<td></td>
</tr>
<tr>
<td>Enroll in</td>
<td>0 credits</td>
<td></td>
</tr>
<tr>
<td>Write a</td>
<td>30 credits of coursework</td>
<td></td>
</tr>
</tbody>
</table>

An acceptable scholarly paper must be technically sound, adhere to accepted formatting standards for technical reports, and contain a significant literature review evidenced by a comprehensive list of cited references.

A list of courses requiring projects that can be used to satisfy the scholarly paper requirement will be published on the department website. Scholarly papers must be individual written project reports — not group projects. To qualify as a scholarly paper an oral presentation of the project is required. A passing grade for the project, reflecting both the written report and the oral presentation, satisfies the scholarly paper requirement.

A successful scholarly paper will be recorded by awarding a satisfactory (S) grade for ECE 797 Scholarly Paper. Students are eligible to attempt the scholarly paper and register for ECE 797 Scholarly Paper after completion of 18 hours of coursework. Students choosing the scholarly paper option are not eligible for graduation until they have received a final, passing grade for ECE 797 Scholarly Paper.

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**Accelerated Master’s**

**Computer Engineering, BS/Computer Engineering, Accelerated MS**

**Overview**

The university offers highly-qualified students in the Computer Engineering, BS (p. 1087) the option of obtaining an accelerated Computer Engineering, MS (p. 1092).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Computer Engineering, BS (p. 1087) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of 3.25. Criteria for admission are identical to criteria for admission to the Computer Engineering, MS (p. 1092) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy the requirements for the BS and MS programs, with 6 credits overlap.

Students take 6 credits of 500-level courses as part of their technical electives or substitutes for required courses as part of their 126-credit undergraduate program. The specific courses that may be taken and applied to the accelerated program will be specified by the ECE Department.

Students admitted to the accelerated program must maintain an overall GPA of at least 3.25 during the entire BS/MS program and present a GPA of at least 3.25 for the 24 credits of graduate work submitted for the MS degree.

Students may take additional graduate-level courses as part of their BS technical electives with advisor approval. These additional graduate-level courses will not count toward the MS degree.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Cyber Security Engineering, BS/Computer Engineering, Accelerated MS**

**Overview**

The university offers highly-qualified students in the Cyber Security Engineering, BS (p. 1016) the option of obtaining an accelerated Computer Engineering, MS (p. 1092).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP6.
Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

Admission Requirements
Students in the Cyber Security Engineering, BS (p. 1016) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Computer Engineering, MS (p. 1092) program.

Accelerated Option Requirements
Students must complete all credits that satisfy the requirements for the BS and MS programs, with 6 credits overlapping.

Students take 6 credits of 500-level ECE (p. 1611) or CS (p. 1468) courses as part of their technical electives or substitutes for required courses in the Cyber Security Engineering, BS (p. 1016) program.

Specifically, students are encouraged to take two of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 505</td>
<td>Hardware Security</td>
<td>3</td>
</tr>
<tr>
<td>ECE 508</td>
<td>Internet of Things</td>
<td>3</td>
</tr>
<tr>
<td>ECE 511</td>
<td>Computer Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td>3</td>
</tr>
</tbody>
</table>

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form (https://registrar.gmu.edu/forms) that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Digital Forensics and Cyber Analysis, MS (title pending SCHEV approval)

Banner Code: VS-MS-DFCA

Academic Advising

MSN 2B5
4400 University Dr
Fairfax, VA 22030

Phone: 703-993-3810
Email: cfrs@gmu.edu
Website: cfrs.gmu.edu

Note: As of catalog publication in April, the title for this program (formerly known as Computer Forensics, MS) has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia.

Admissions & Policies

Admissions
Students who hold a bachelor’s degree from an accredited college or university in engineering, math, science, computer science, business (with a quantitative background), economics, or other analytical disciplines, or students who have equivalent work experience indicating analytical aptitude, may apply. Depending on their background, some applicants may be required to complete 3 to 12 credits of preliminary course work before they are allowed to enroll in any of the core or specialty courses in the program. A minimum undergraduate GPA of 3.00 is required for acceptance.

Requirements

(formerly VS-MS-CFRS)

Note: As of catalog publication in April, the title for this program (formerly known as Computer Forensics, MS) has been approved by the Board of Visitors and sent to the State Council of Higher Education in Virginia.

Degree Requirements

Total credits: 30

Students must complete a minimum of 30 graduate credits beyond the bachelor’s degree with a GPA of 3.00 or higher, with no more than 6 credit hours of C grades. The plan of study includes an 21-credit required core component which includes a mandatory capstone course, and the choice of either a concentration or a 9-credit elective component as shown below.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFRS 500</td>
<td>Introduction to Forensic Technology and Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or ISA 562 Information Security Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>CFRS 510</td>
<td>Digital Forensics Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Digital forensics is a discipline addressing the collection, processing, and analysis of digital data for the purpose of verifying/validating the existence of an event of investigative, intelligence, cyber, or business interest. The data can be from physical media, a mobile device, real-time network traffic, the Internet of Things (IoT), unknown code, memory, and many other sources. Digital forensics is interdisciplinary by nature and our program includes computer engineering, computer science, information technology, law, and ethics. Digital forensics is a key component in criminal, corporate, civil, cyber defense, incident response, intelligence, and counter-terrorism matters. In the last several years, with a proliferation of digital storage, transmission, and processing of sensitive information, there has been an increase in the aberrant use of digital devices. This aberrant behavior includes but is not limited to: digital extortion, intrusions, economic espionage, child exploitation, cybercrime, fraud, terrorism, and identity theft. In response to this, digital forensics has become an important profession serving both public and private sectors. The MS in Digital Forensics/Cyber Analysis will prepare graduates for a wide variety of careers to include law enforcement, various other branches of government, incident response, and all facets of cyber security by combining academic education with real world practical techniques and by offering advanced training in analyzing digital evidence, intrusion forensics, reverse engineering, network analysis, and legal and ethical issues.
CORS 660 | Network Forensics | 3
CORS 661 | Digital Media Forensics | 3
CORS 663 | Operations of Intrusion Detection for Forensics | 3
or CORS 664 | Incident Response Forensics | 3
CORS 760 | Legal and Ethical Issues in IT 2 | 3
or CORS 770 | Fraud and Forensics in Accounting | 3
CORS 790 | Advanced Computer Forensics | 3

Total Credits | 21

1. It is required that CORS 500 Introduction to Forensic Technology and Analysis be taken for those with little to no experience in digital forensics.
2. Both CORS 760 Legal and Ethical Issues in IT and CORS 770 Fraud and Forensics in Accounting may be taken but only one may be used in the core component.

### MS with Concentration in Penetration Testing/Reverse Engineering (PTRE)

Focused on the practical aspects of penetration testing and reverse engineering. Students are expected to master tools, techniques, and methodologies of penetration testing and reverse engineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORS 761</td>
<td>Malware Reverse Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CORS 767</td>
<td>Penetration Testing in Computer Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CORS 772</td>
<td>Forensic Artifact Extraction</td>
<td>3</td>
</tr>
<tr>
<td>or CORS 775</td>
<td>Kernel Forensics and Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits | 9

1. Both CORS 760 Legal and Ethical Issues in IT and CORS 770 Fraud and Forensics in Accounting may be taken, but only one may be used in the core component.

Other courses may be appropriate as electives in the degree program, but they must be approved prior to registration.

### Accelerated Master's

#### Cyber Security Engineering, BS/Digital Forensics and Cyber Analysis (title change pending SCHEV approval), Accelerated MS

**Overview**

Highly-qualified students in the Cyber Security Engineering, BS (p. 1016) have the option of obtaining an accelerated Digital Forensics and Cyber Analysis (p. 1095), MS (p. 1095).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Cyber Security Engineering, BS (p. 1016) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Digital Forensics and Cyber Analysis, MS (p. 1095) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping.

Students register for two Digital Forensics and Cyber Analysis core courses (6 credits) in place of two of the three required technical
electives, as part of the undergraduate degree requirements. Specifically, students must take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFRS 500</td>
<td>Introduction to Forensic Technology and Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>and one of the following:</td>
<td></td>
</tr>
<tr>
<td>CFRS 510</td>
<td>Digital Forensics Analysis (satisfies the IT 357 requirement for the INFS concentration in the BS program)</td>
<td>3</td>
</tr>
<tr>
<td>CFRS 660</td>
<td>Network Forensics (satisfies one NTEL concentration course in the BS program)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6

Note: Students complete all Digital Forensics and Cyber Analysis, MS (p. 1095) core courses and apply the two courses from the above list toward the Digital Forensics and Cyber Analysis, MS (p. 1095) requirements.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Information Technology, BS/Digital Forensics and Cyber Analysis (title change pending SCHEV approval), Accelerated MS**

**Overview**

Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Digital Forensics and Cyber Analysis, MS (p. 1095).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Information Technology, BS (p. 1122) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Digital Forensics and Cyber Analysis, MS (p. 1095) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with two of the following three courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFRS 500</td>
<td>Introduction to Forensic Technology and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CFRS 510</td>
<td>Digital Forensics Analysis (satisfies the IT 357 requirement for the INFS concentration in the BS program)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Electrical Engineering, BS**

Banner Code: VS-BS-ELEN

**Academic Advising**

MSN 1G5
4400 University Drive
Fairfax, VA 22030
Phone: 703-993-1569
Email: ece@gmu.edu
Website: https://ece.gmu.edu/undergraduate-studies/bachelors-programs/bs-electrical-engineering

Electrical engineering is a major field of modern technology. Electrical engineers are involved in research, development, design, production, and operation of a wide variety of devices and systems, including reliable, secure, and high-speed communication networks, autonomous vehicles, robots, multi-agent systems, nanoscale integrated circuits as well as sensors that are essential to the internet-of-things. Other technologies in electrical engineering include smartphones, tablets and other modern computing platforms, as well as wearable technology such as health-monitoring wristbands, biomedical systems such as prosthetic devices, and brain-machine interfaces.

The Department of Electrical and Computer Engineering is staffed by 33 full-time professors and several part-time professors.

The bachelor’s program in Electrical Engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

**Career Opportunities**

Career opportunities exist in engineering research and development, system design, system integration, engineering management, engineering consultancy, technical sales, and patent law, among others. The program provides a strong preparation for graduate study.

**Specializations**

The curriculum provides a strong background in the fundamentals of electrical engineering and senior-level courses in the areas of electronics, networks, communications and signal processing, bioengineering, computer engineering, and controls and robotics. Further, the curriculum includes 9 credits of senior technical electives, 2 credits of advanced engineering labs, and 3 credits of senior advanced design project, which may be used for further specialization in one of these areas.

**Additional Information**

Degree requirements may be satisfied on a full-time or part-time basis. Cooperative education provides students with the opportunity to
integrate paid career-related work experience with classroom learning. Academic credit towards the completion of major requirements is not given for co-op experience. In addition to the usual financial aid available through the Office of Student Financial Aid, electrical engineering majors are encouraged to apply for scholarships provided by various professional societies and industrial organizations in their field.

Admissions & Policies

Policies

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

Writing-Intensive Requirement

Mason's writing-intensive requirement is satisfied by the following two courses: ECE 333 Linear Electronics I and ECE 491 Engineering Seminar in which faculty provide writing instruction and feedback on student technical writing assignments. Drafts and revisions are required.

Change of Major

See Change of Major (p. 1013) for more information.

Double Major and Minor Programs for Electrical Engineering and Computer Engineering

Electrical Engineering majors and Computer Engineering majors can earn degrees with double majors in a number of disciplines. Computer Engineering and Computer Science are frequently combined. Electrical Engineering has been combined with Computer Engineering, Computer Science, Mechanical Engineering, Physics or Math. Details are available in the department brochures or at the Volgenau School website volgenau.gmu.edu. There are several minors available for students in the ECE Department including the Mechanical Engineering minor, Bioengineering minor, and others as listed in the catalog.

Grade Requirements

All electrical engineering students are strongly encouraged to see their major faculty advisor before course registration each semester.

Students must complete each ECE, ENGR, BENG, CS, MATH, PHYS, and STAT course presented as part of the required 121 credits for the degree with a grade of C or better.

Students must also complete any course required by the program that is a prerequisite to another course applicable to the degree with a grade of C or better.

Termination from the Major

No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP.5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student's major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student's advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student's major was at the time the courses were taken.

Requirements

Degree Requirements

Total credits: minimum 121

Electrical and Computer Engineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 101</td>
<td>Introduction to Electrical and Computer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECE 201</td>
<td>Introduction to Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 220</td>
<td>Continuous-Time Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 285</td>
<td>Electric Circuit Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 286</td>
<td>Electric Circuit Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 305</td>
<td>Electromagnetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 331</td>
<td>Digital System Design</td>
<td>3</td>
</tr>
<tr>
<td>ECE 332</td>
<td>Digital Electronics and Logic Design Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 333</td>
<td>Linear Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 334</td>
<td>Linear Electronics Lab I</td>
<td>1</td>
</tr>
<tr>
<td>ECE 350</td>
<td>Embedded Systems and Hardware Interfaces</td>
<td>3</td>
</tr>
<tr>
<td>ECE 421</td>
<td>Classical Systems and Control Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 433</td>
<td>Linear Electronics II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 445</td>
<td>Computer Organization</td>
<td>3</td>
</tr>
<tr>
<td>ECE 460</td>
<td>Communication and Information Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 491</td>
<td>Engineering Seminar</td>
<td>1</td>
</tr>
<tr>
<td>ECE 492</td>
<td>Senior Advanced Design Project I (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>
Students who would like to complete a more challenging senior design project have the option of enrolling in ECE 392 Engineering Design Studio to gain a semester head start in the design process.

**Technical Electives**

Three technical elective courses totaling 9 credit hours must be selected from the list below. Up to 3 credits of ECE 499 Special Topics in Electrical and Computer Engineering courses may be taken as technical electives. ECE 447 Single-Chip Microcomputers and ECE 448 FPGA and ASIC Design with VHDL, which are 4-credit courses with built-in labs, can be used to fulfill one technical elective and one advanced lab requirement. Some graduate courses and courses outside the ECE department may be taken to fulfill the technical elective requirement with the permission of the department. The decision to approve more than 3 credits of ECE 499 Special Topics in Electrical and Computer Engineering, non-ECE courses as well as graduate courses as technical electives is at the discretion of the department based on a review of the course content and the student's academic record.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 370</td>
<td>Robot Design</td>
<td></td>
</tr>
<tr>
<td>ECE 410</td>
<td>Applications of Discrete-Time Signal Processing</td>
<td></td>
</tr>
<tr>
<td>ECE 415</td>
<td>Power System Analysis</td>
<td></td>
</tr>
<tr>
<td>ECE 422</td>
<td>Digital Control Systems</td>
<td></td>
</tr>
<tr>
<td>ECE 424</td>
<td>Modern Control Systems Design</td>
<td></td>
</tr>
<tr>
<td>ECE 430</td>
<td>Principles of Semiconductor Devices</td>
<td></td>
</tr>
<tr>
<td>ECE 431</td>
<td>Digital Circuit Design</td>
<td></td>
</tr>
<tr>
<td>ECE 446</td>
<td>Device Driver Development</td>
<td></td>
</tr>
<tr>
<td>ECE 447</td>
<td>Single-Chip Microcomputers</td>
<td></td>
</tr>
<tr>
<td>ECE 448</td>
<td>FPGA and ASIC Design with VHDL</td>
<td></td>
</tr>
<tr>
<td>ECE 450</td>
<td>Mobile Robots</td>
<td></td>
</tr>
<tr>
<td>ECE 462</td>
<td>Data and Computer Communications</td>
<td></td>
</tr>
<tr>
<td>ECE 463</td>
<td>Digital Communications Systems</td>
<td></td>
</tr>
<tr>
<td>ECE 465</td>
<td>Computer Networking Protocols</td>
<td></td>
</tr>
<tr>
<td>ECE 470</td>
<td>Introduction to Humanoid Robotics</td>
<td></td>
</tr>
<tr>
<td>ECE 499</td>
<td>Special Topics in Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>CYSE 425</td>
<td>Secure RF Communications</td>
<td></td>
</tr>
<tr>
<td>CYSE 476</td>
<td>Cryptography Fundamentals</td>
<td></td>
</tr>
</tbody>
</table>

The following 500-level courses may also be taken (with prior approval of the department):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 508</td>
<td>Internet of Things</td>
<td></td>
</tr>
<tr>
<td>ECE 510</td>
<td>Real-Time Concepts</td>
<td></td>
</tr>
<tr>
<td>ECE 511</td>
<td>Computer Architecture</td>
<td></td>
</tr>
<tr>
<td>ECE 513</td>
<td>Applied Electromagnetic Theory</td>
<td></td>
</tr>
<tr>
<td>ECE 521</td>
<td>Linear Systems and Control</td>
<td></td>
</tr>
<tr>
<td>ECE 526</td>
<td>Neural Engineering</td>
<td></td>
</tr>
<tr>
<td>ECE 527</td>
<td>Learning From Data</td>
<td></td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 530</td>
<td>Sensor Engineering</td>
<td></td>
</tr>
<tr>
<td>ECE 531</td>
<td>Introduction to Wireless Communications and Networks</td>
<td></td>
</tr>
<tr>
<td>ECE 535</td>
<td>Digital Signal Processing</td>
<td></td>
</tr>
<tr>
<td>ECE 538</td>
<td>Medical imaging</td>
<td></td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td></td>
</tr>
<tr>
<td>ECE 548</td>
<td>Sequential Machine Theory</td>
<td></td>
</tr>
<tr>
<td>ECE 550</td>
<td>System Engineering Design</td>
<td></td>
</tr>
<tr>
<td>ECE 555</td>
<td>Introduction to Optical Electronics</td>
<td></td>
</tr>
<tr>
<td>ECE 567</td>
<td>Optical Fiber Communications</td>
<td></td>
</tr>
<tr>
<td>ECE 584</td>
<td>Semiconductor Device Fundamentals</td>
<td></td>
</tr>
<tr>
<td>ECE 586</td>
<td>Digital Integrated Circuits</td>
<td></td>
</tr>
<tr>
<td>ECE 587</td>
<td>Design of Analog Integrated Circuits</td>
<td></td>
</tr>
<tr>
<td>ECE 590</td>
<td>Selected Topics in Engineering</td>
<td></td>
</tr>
</tbody>
</table>

**Advanced Engineering Labs**

Select two advanced labs from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 429</td>
<td>Control Systems Lab</td>
<td>2</td>
</tr>
<tr>
<td>ECE 434</td>
<td>Linear Electronics II Laboratory</td>
<td></td>
</tr>
<tr>
<td>ECE 447</td>
<td>Single-Chip Microcomputers</td>
<td>1</td>
</tr>
<tr>
<td>ECE 448</td>
<td>FPGA and ASIC Design with VHDL</td>
<td>1</td>
</tr>
<tr>
<td>ECE 461</td>
<td>Communication Engineering Laboratory</td>
<td></td>
</tr>
<tr>
<td>ECE 467</td>
<td>Network Implementation Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

**Computer Science**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CS 222</td>
<td>Computer Programming for Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>

**Mathematics and Statistics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>

**Physics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
</tbody>
</table>
PHYS 260  University Physics II (Mason Core)  (p. 142)  3
PHYS 261  University Physics II Laboratory (Mason Core)  (p. 142)  1
PHYS 262  University Physics III (Mason Core)  (p. 142)  3
PHYS 263  University Physics III Laboratory (Mason Core)  (p. 142)  1

Total Credits  12

**Engineering**

**Code**  | **Title**  | **Credits**
---|---|---
ENGR 107  | Introduction to Engineering (Mason Core)  (p. 142)  | 2

Total Credits  2

**English, Communication, and Economics**

**Code**  | **Title**  | **Credits**
---|---|---
ENGH 302  | Advanced Composition (Mason Core)  (p. 142) (Natural Sciences and Technology section)  | 3
COMM 100  | Public Speaking (Mason Core)  (p. 142)  | 3
COMM 101  | Fundamentals of Communication (Mason Core)  (p. 142)  | 3
ECON 103  | Contemporary Microeconomic Principles (Mason Core)  (p. 142)  | 3

Total Credits  9

**Additional Mason Core**

Students must complete all Mason Core (p. 142) requirements not fulfilled by major requirements. Mason Core courses should be selected from the department’s list of approved courses. The Synthesis Mason Core requirement is satisfied by ECE 492 Senior Advanced Design Project I (Mason Core)  (p. 142) and ECE 493 RS: Senior Advanced Design Project II (Mason Core)  (p. 142). All students must submit at least 24 credits of social science and humanities coursework, which is normally satisfied by the 24 credits of Mason Core social science and humanities courses listed here and in previous sections.

**Concentrations**

Concentrations are available in the electrical engineering baccalaureate program. Completion of specific science courses and senior-level courses leads to one of these designations on the student’s transcript on graduation. Concentration requirements may also meet some or all of the Advanced Engineering Lab and Technical Elective requirements.

**Available Concentrations**

- Concentration in Communications and Signal Processing (CSP)  (p. 1100)
- Concentration in Computer Engineering (CPE)  (p. 1100)
- Concentration in Control Systems (CON)  (p. 1101)
- Concentration in Electronics (ELE)  (p. 1101)

**Concentration in Communications and Signal Processing (CSP)**

**Code**  | **Title**  | **Credits**
---|---|---
ECE 220  | Continuous-Time Signals and Systems  | 3
ECE 460  | Communication and Information Theory  | 4
ECE 461  | Communication Engineering Laboratory  | 3
or ECE 467  | Network Implementation Laboratory  | 3

Select three from the following:  9

- ECE 410  Applications of Discrete-Time Signal Processing  
- CYSE 425  Secure RF Communications  
- ECE 462  Data and Computer Communications  
- ECE 463  Digital Communications Systems  
- ECE 465  Computer Networking Protocols  
- CYSE 476  Cryptography Fundamentals  
- PHYS 306  Wave Motion and Electromagnetic Radiation  
- ECE 527  Learning From Data  
- ECE 528  Introduction to Random Processes in Electrical and Computer Engineering  
- ECE 531  Introduction to Wireless Communications and Networks  
- ECE 535  Digital Signal Processing  
- ECE 567  Optical Fiber Communications

Total Credits  16

**Concentration in Computer Engineering (CPE)**

**Code**  | **Title**  | **Credits**
---|---|---
ECE 350  | Embedded Systems and Hardware Interfaces  | 3
ECE 447  | Single-Chip Microcomputers  | 3

Select two from the following:  6-7

- ECE 431  Digital Circuit Design  
- ECE 446  Device Driver Development  
- ECE 448  FPGA and ASIC Design with VHDL  
- CS 471  Operating Systems  
- CYSE 476  Cryptography Fundamentals  
- ECE 505  Hardware Security  
- ECE 508  Internet of Things  
- ECE 510  Real-Time Concepts  
- ECE 511  Computer Architecture  
- ECE 516  Mobile Systems and Applications  
- ECE 530  Sensor Engineering

Total Credits  13-14

1 Lower-level requirement.
Concentration in Control Systems (CON)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 421</td>
<td>Classical Systems and Control Theory</td>
<td>4</td>
</tr>
<tr>
<td>ECE 429</td>
<td>Control Systems Lab</td>
<td></td>
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</table>

Select three from the following: 9-10

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ECE 370</td>
<td>Robot Design</td>
<td></td>
</tr>
<tr>
<td>ECE 422</td>
<td>Digital Control Systems</td>
<td></td>
</tr>
<tr>
<td>ECE 424</td>
<td>Modern Control Systems Design</td>
<td></td>
</tr>
<tr>
<td>ECE 447</td>
<td>Single-Chip Microcomputers</td>
<td></td>
</tr>
<tr>
<td>ECE 450</td>
<td>Mobile Robots</td>
<td></td>
</tr>
<tr>
<td>ECE 470</td>
<td>Introduction to Humanoid Robotics</td>
<td></td>
</tr>
<tr>
<td>ECE 511</td>
<td>Computer Architecture</td>
<td></td>
</tr>
<tr>
<td>ECE 521</td>
<td>Linear Systems and Control</td>
<td></td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 13-14

Concentration in Electronics (ELE)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 433</td>
<td>Linear Electronics II</td>
<td>4</td>
</tr>
<tr>
<td>ECE 434</td>
<td>Linear Electronics II Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

Select three from the following: 9-11

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 415</td>
<td>Power System Analysis</td>
<td></td>
</tr>
<tr>
<td>ECE 430</td>
<td>Principles of Semiconductor Devices</td>
<td></td>
</tr>
<tr>
<td>ECE 431</td>
<td>Digital Circuit Design</td>
<td></td>
</tr>
<tr>
<td>ECE 447</td>
<td>Single-Chip Microcomputers</td>
<td></td>
</tr>
<tr>
<td>ECE 448</td>
<td>FPGA and ASIC Design with VHDL</td>
<td></td>
</tr>
<tr>
<td>PHYS 306</td>
<td>Wave Motion and Electromagnetic Radiation</td>
<td></td>
</tr>
<tr>
<td>ECE 513</td>
<td>Applied Electromagnetic Theory</td>
<td></td>
</tr>
<tr>
<td>ECE 565</td>
<td>Introduction to Optical Electronics</td>
<td></td>
</tr>
<tr>
<td>ECE 567</td>
<td>Optical Fiber Communications</td>
<td></td>
</tr>
<tr>
<td>ECE 584</td>
<td>Semiconductor Device Fundamentals</td>
<td></td>
</tr>
<tr>
<td>ECE 586</td>
<td>Digital Integrated Circuits</td>
<td></td>
</tr>
<tr>
<td>ECE 587</td>
<td>Design of Analog Integrated Circuits</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 13-15

Accelerated Master’s

BS (selected)/Operations Research, Accelerated MS

Overview
Highly-qualified students in BS programs have the option of obtaining an accelerated Operations Research, MS (p. 1153). Students must additionally complete MATH 203 prior to applying for the graduate program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

BS (selected)/Statistical Science, Accelerated MS

Overview
Highly-qualified students in BS programs have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.

Admission Requirements
No specific undergraduate BS degree is required. Students enrolled in any BS degree may apply to the accelerated Statistical Science, MS (p. 1141) program if such an accelerated Statistical Science, MS pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs; and if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>
Accelerated Option Requirements

Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. (Credit may not be received for both STAT 474 and STAT 574; nor for both STAT 460 and STAT 560.) The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Electrical Engineering, BS/Electrical Engineering, Accelerated MS

Overview

Highly-qualified students in the Electrical Engineering, BS (p. 1097) have the option of obtaining an accelerated Electrical Engineering, MS (p. 1103).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Students in the Electrical Engineering, BS (p. 1097) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of 3.25. Criteria for admission are identical to criteria for admission to the Electrical Engineering, MS (p. 1103) program.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for both the BS and MS programs, with 6 credits overlap.

Students take 6 credits of 500-level courses as part of their technical electives or substitutes for required courses as part of their 121-credit undergraduate program. The specific courses that may be taken and applied to the accelerated program will be specified by the ECE Department.

Students admitted to the accelerated program must maintain an overall GPA of at least 3.25 during the entire BS/MS program and present a GPA of at least 3.25 for the 24 credits of graduate work submitted for the MS degree.

Students may take additional graduate-level courses as part of their BS technical electives with advisor approval. These additional graduate-level courses will not count toward the MS degree.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.
Electrical Engineering, BS/Telecommunications, Accelerated MS

Overview

Highly-qualified students in the Electrical Engineering, BS (p. 1097) have the option of obtaining an accelerated Telecommunications, MS (p. 1111).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Students can apply for the program during the semester in which they expect to complete 90 undergraduate credits applicable toward the BS degree. An overall GPA of at least 3.10 at the time of application is required. Criteria for admission are identical to criteria for admission to the MS in Telecommunications Program. Application is made using the accelerated graduate program application forms, and all usual requirements must be met. The accelerated program application form specifies the overlapping courses and details the 3.10 undergraduate GPA.

Accelerated Option Requirements

Students must complete 145 credits that satisfy all the requirements for the BS and MS degrees, with 6 credits overlap. Students take 6 credits of 500-level courses as part of their technical electives or substitutes for required courses as part of their 121-credit undergraduate program. Students may take additional graduate-level courses as part of their BS technical electives with advisor approval. These additional graduate-level courses will not count toward the MS degree. Students admitted to the accelerated program must maintain an overall GPA of at least 3.00 during the MS program and present a GPA of at least 3.00 for the 24 credits of graduate work submitted for the MS degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>6</td>
</tr>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td></td>
</tr>
<tr>
<td>Or approved substitutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Degree Conferral

Students must apply to have the BS conferred the semester before they expect to complete the BS requirements. At the completion of the MS requirements, the MS degree will be awarded.

Electrical Engineering, MS

Banner Code: VS-MS-ELEN

Academic Advising

MSN 1G5
4400 University Drive
Fairfax, VA 22030
Phone: 703-993-1569
Email: ece@gmu.edu
Website: https://ece.gmu.edu/graduate-studies/masters-programs/ms-electrical-engineering

Electrical Engineering is the discipline that drives our increasingly-connected society. Electrical engineers design systems, devices, and algorithms that contribute innovative solutions across a broad spectrum of applications. The Electrical Engineering program offers the following specialization areas: communications and networking, signal processing, controls and robotics, nanoelectronics, space-based systems, and bioengineering. The graduates of our program develop reliable, secure, and high-speed communication networks and systems; apply modern signal processing algorithms to extract information from images, audio, video, sonar, and radio signals; apply control theory and robotics foundations to applications such as autonomous vehicles, humanoid robots, and multi-agent systems; design nanoscale devices for the highly integrated circuits that drive the Internet of Things, health-monitoring devices, smartphones, tablets, and modern-day computer systems; develop prosthetic devices, brain-machine interfaces, and systems to ameliorate neurological disorders. Students in this program will develop theoretical foundations, analytical capabilities, and practical hands-on skills in their chosen field of specialization. They will also develop the oral and written communication skills necessary to articulate their ideas and succeed as entrepreneurs, practicing engineers, or technical managers in high-tech companies.

Admissions & Policies

Admissions

Categories of Admission

Students may be admitted into one of the following categories: degree, provisional, or nondegree. Provisional admission is reserved for domestic students whose past performance provides reasonable, but not strong, evidence of ability to pursue graduate work. To advance to degree status, a provisional student must achieve a 3.00 GPA after 12 credits, remove all undergraduate deficiencies by completing the corresponding courses with grades of B or better, and receive a B or better in two core courses specific to the student’s selected program and specialization. The nondegree category is used primarily by students who want to take courses but not necessarily pursue a degree. Nondegree students seeking to enter degree programs must formally apply for admission.

Requirements

To be considered for admission to the master’s program, applicants should have a baccalaureate degree in electrical engineering, computer engineering, or a closely-related discipline from an accredited program with a reputation for high academic standards, and have earned a GPA of B or better during the last 60 credits. Other requirements are as follows:

- Two letters of recommendation, preferably from academic references or references in industry or government who hold advanced degrees and are familiar with the applicant’s professional accomplishments
- Resume and detailed statement of career goals and aspirations
- For students who have not earned a bachelor’s degree from a U.S. university, satisfactory performance on the GRE
- For applicants who have not earned an academic degree in an English-speaking country (as defined in the GMU Catalog), a satisfactory score on any of the English proficiency examinations accepted by Mason, namely, TOEFL, IELTS, or PTE. Satisfactory scores are specific to Volgenau School of Engineering and are listed

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>6</td>
</tr>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td></td>
</tr>
<tr>
<td>Or approved substitutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
Non-ECE Students
Students with BS or MS degrees in ECE-related disciplines (for example, computer science, mathematics, mechanical engineering, physics, or electrical engineering technology) are encouraged to apply for admission. They may initially be admitted into the provisional category and advance to degree status by satisfying requirements described in the Admissions Categories section. Such students may also be advised to take some courses from the undergraduate electrical or computer engineering curriculum, according to their intended specialization and specific backgrounds.

Policies
Student Advising
Newly-admitted graduate students must consult with the ECE graduate coordinator before they register for classes. Students should make an appointment by calling the ECE office. Students are expected to select a specialization from those available in each MS degree program. Students then are assigned an academic advisor from that specialization.

GPA Requirements
A maximum of 6 credits of courses with grades of C or B- may be applied toward the degree. The student must present a GPA of at least 3.00 for all courses submitted for the degree.

Requirements
Degree Requirements
Total credits: 30

Students must complete a minimum of 30 graduate credits beyond the bachelor’s degree. This work must represent a cohesive set of courses leading to comprehensive knowledge in one area; it cannot be a set of disjointed courses. The plan of study for the degree must include the following:

Plan of Study
Before completing 6 credit hours of coursework, each student must submit to the department a plan of study that has been approved by the academic advisor. This plan should be kept up to date by regular consultation with the academic advisor. A final, signed version of the plan must be turned in when the student submits a graduation application.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 521</td>
<td>Linear Systems and Control</td>
<td>6</td>
</tr>
<tr>
<td>ECE 526</td>
<td>Neural Engineering</td>
<td></td>
</tr>
<tr>
<td>or ECE 527</td>
<td>Learning From Data</td>
<td></td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>ECE 548</td>
<td>Sequential Machine Theory</td>
<td></td>
</tr>
<tr>
<td>or ECE 511</td>
<td>Computer Architecture</td>
<td></td>
</tr>
<tr>
<td>ECE 584</td>
<td>Semiconductor Device Fundamentals</td>
<td></td>
</tr>
</tbody>
</table>

Select two courses from the following: ¹

¹ Must earn a B or better in each.

Upper Level Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three courses at the 600 level or above. ¹</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

¹ Students must earn a B or better in each course. Must be a coherent set of courses, not including ECE 798 Research Project or ECE 799 Master’s Thesis. For guidance for selecting a coherent set of courses, students are referred to the courses listed for each of the program’s specialization areas listed on the ECE website. A maximum of 6 credits of non-ECE courses may be used, subject to prior department approval.

Seminar Requirement
Graduate students are expected to participate actively in the exchange of knowledge and ideas in their discipline. Towards this objective, all degree candidates must attend a minimum of 6 graduate seminars approved for the degree program. Approved seminars are publicized on the departmental webpage.

To demonstrate completion of the seminar requirement, students must register for ECE 795 Engineering Seminar in their final semester. The department office will verify that the seminar requirement has been met and submit a grade of S (satisfactory) upon completion of the requirement. Students who have not met the seminar requirement in their final semester must continue to register for ECE 795 Engineering Seminar in subsequent semesters until the requirement is met.

Thesis/Scholarly Paper Option
To complete the program, students may select one of the following options:

Thesis Option
Students who select this option must complete:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 799</td>
<td>Master’s Thesis</td>
<td>6</td>
</tr>
<tr>
<td>Coursework</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

The thesis is particularly recommended for those students who wish to develop and document their research skills or contemplate subsequent enrollment in a PhD program. The thesis involves a research effort, which is conducted under the guidance of a faculty advisor. In some cases, permission may be granted to complete a portion of the work at the student’s place of employment. The final written thesis and oral defense are approved by the student’s advisory committee.

For the Electrical Engineering program (p. 1103), this committee consists of at least three full-time faculty members, including two from the student’s major specialization, and one from outside the specialization. For the Computer Engineering Program (p. 1092), this committee consists of at least three full-time faculty members, including two affiliated with the MS in Computer Engineering (p. 1092) Program, one of whom must be from the ECE Department. Thesis students may not register for ECE 798 Research Project. Students must register for at
least 3 credits of thesis for their first thesis semester. Following their first thesis semester, they must register for at least 1 credit of thesis each fall and spring semester until graduation.

**Scholarly Paper Option**
Students who select to complete their degree program with a scholarly paper must:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete 30 credits of coursework</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>ECE 797 Scholarly Paper</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Enroll in a 600-level or above course requiring a research project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write a Scholarly Paper project report and present findings as part of the course requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

An acceptable scholarly paper must be technically sound, adhere to accepted formatting standards for technical reports, and contain a significant literature review evidenced by a comprehensive list of cited references.

A list of courses requiring projects that can be used to satisfy the scholarly paper requirement will be published on the department website. Scholarly papers must be individual written project reports — not group projects. To qualify as a scholarly paper an oral presentation of the project is required. A passing grade for the project, reflecting both the written report and the oral presentation, satisfies the scholarly paper requirement.

A successful scholarly paper will be recorded by awarding a satisfactory (S) grade for ECE 797 Scholarly Paper. Students are eligible to attempt the scholarly paper and register for ECE 797 Scholarly Paper after completion of 18 hours of coursework. Students choosing the scholarly paper option are not eligible for graduation until they have received a final, passing grade for ECE 797 Scholarly Paper.

**Accelerated Master’s**

**Electrical Engineering, BS/Electrical Engineering, Accelerated MS**

**Overview**
Highly-qualified students in the Electrical Engineering, BS (p. 1097) have the option of obtaining an accelerated Electrical Engineering, MS (p. 1103).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**
Students in the Electrical Engineering, BS (p. 1097) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of 3.25. Criteria for admission are identical to criteria for admission to the Electrical Engineering, MS (p. 1103) program.

**Accelerated Option Requirements**
Students must complete all credits that satisfy the requirements for the BS and MS programs, with 6 credits overlap.

Students take 6 credits of 500-level courses as part of their technical electives or substitutes for required courses as part of their 121-credit undergraduate program. The specific courses that may be taken and applied to the accelerated program will be specified by the ECE Department.

Students admitted to the accelerated program must maintain an overall GPA of at least 3.25 during the entire BS/MS program and present a GPA of at least 3.25 for the 24 credits of graduate work submitted for the MS degree.

Students may take additional graduate-level courses as part of their BS technical electives with advisor approval. These additional graduate-level courses will not count toward the MS degree.

**Degree Conferral**
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Electrical and Computer Engineering, PhD**

**Banner Code: VS-PHD-ECE**

**Academic Advising**
MSN 1G5
4400 University Drive
Fairfax, VA 22030
Phone: 703-993-1570
Email: eecephd@gmu.edu
Website: ece.gmu.edu/graduate-studies/phd-programs/ece-phd-program

The PhD program in Electrical and Computer Engineering educates students to do original research on ECE topics and to become technical leaders in their fields. It has a strong and growing reputation, as graduates from the department have become professors at other universities and researchers in various industrial and government research centers. Students may choose a research emphasis in areas such as communications, networking, computer engineering, control and robotics, signal processing, micro/nano-electronics, and bioengineering. The ECE PhD program requires coursework, a qualifying exam, a teaching assignment, a dissertation proposal and research competency exam, a research seminar, dissertation research, and a dissertation defense. Mason’s general doctoral requirements apply to this program.

**Admissions & Policies**

**Admissions**
All general Mason and specific Volgenau School admission requirements apply. Applicants must submit official transcripts, a resume, a goals statement, three letters of recommendation and official GRE General Test results. The GRE requirement is waived for Mason ECE master’s graduates with a 3.0 or greater GPA. Applicants whose native language is
not English must demonstrate proficiency by taking the TOEFL or IELTS exam. The minimum score required for admission is 575 on the TOEFL paper-based exam, 230 on the TOEFL computer-based exam, 88 on the TOEFL internet-based exam (with a minimum of 20 in each section), or 6.5 on the IELTS exam. Application materials are reviewed by the ECE PhD committee, which makes a recommendation to the ECE department chair.

Policies

Reduction of Credit

Students must complete a minimum of 72 graduate credits, which may be reduced by a maximum of 30 credits from a completed master’s degree. Reduction of credit requires the approval of the program director or designee and the dean or designee of the school. They determine whether the credits are eligible for reduction of credit and applicable to the degree program and the number of credits to be reduced.

Program Requirements

The 72 hours of required doctoral-level credits typically consist of 48 credits of regular coursework and 24 credits of dissertation research. More than half of the 72 credits applied to the doctoral degree must be earned at Mason. The degree plan outlined in Degree Requirements is based on a student who receives a full 30 credit reduction. Students who do not receive a full credit reduction should choose additional credits in consultation with their advisor.

Requirements

Degree Requirements

Total credits: 72

Doctoral Coursework

Courses that constitute a student’s plan of study will be chosen in consultation with the student’s advisor and/or dissertation committee, to include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 18-30 credits</td>
<td>18-30</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>18-30</td>
</tr>
</tbody>
</table>

- 3 credits at the 600-level outside the department in a subject considered foundational for the area of emphasis. Typical examples are advanced mathematics or statistics courses for those pursuing an emphasis in communications, signal processing or control, physics courses for those desiring an emphasis in micro/nano-electronics, computer science courses for those pursuing the computer engineering emphasis, and biology courses for those pursuing a bioengineering emphasis. Because such courses are usually not taken for master’s degrees, this requirement can rarely be satisfied with a course taken previously.

- 6 credits within the department but outside the area of emphasis. This requirement may be satisfied with courses taken during previous studies, subject to approval.

- A maximum of 6 credits may be at the 500-level.

- A maximum of 6 credits of individualized reading courses at any level. Note that ECE 798 Research Project is primarily a master’s level course and is not intended to be part of the PhD coursework.

1 For courses taken elsewhere, the equivalent levels are to be determined by the PhD advisor, subject to approval by the ECE Department chair.

Qualifying Exams

The ECE PhD Qualifying Exam tests students’ knowledge of fundamental concepts and assesses their basic research skills. The exam consists of two parts: an in-class written technical qualifying exam and a research qualifying exam (RQE).

Technical Qualifying Exam

The Technical Qualifying Exam (TQE) that tests knowledge of fundamental concepts in a particular technical area. Students select one of four areas for their TQE:

1. Control Theory
2. Digital Design and Computer Organization
3. Electronics and Circuits
4. Signals and Systems

The TQE is offered once a year in January before the start of the Spring semester. Students entering the program with a BS or an MS are required to take the TQE the first time it is offered after they have entered the program. A student who fails the exam will have a second and final chance to pass the exam in the following year. A student who obtains a marginal passing grade in the first attempt of the TQE will be required to take an oral exam in the same area within the subsequent four weeks.

The oral exam will be administered by two ECE faculty members. A student who passes the oral exam will satisfy the TQE requirement. A student who demonstrates marginal performance in the oral exam will be required to take the written exam for the second and final time when it is offered in the following year. A student who fails the oral exam will be dismissed from the program. A student who fails the written TQE twice will be dismissed from the program.

Outstanding students may be exempt from the TQE if they obtain at least an A in two designated courses taken within the twelve months proceeding the first attempt at the TQE, or within the twelve months after the student has failed the TQE in the first attempt. The designated courses are as follows: Area A - ECE 521 Linear Systems and Control and ECE 528 Introduction to Random Processes in Electrical and Computer Engineering; Area B - ECE 545 Digital System Design with VHDL or ECE 590 Selected Topics in Engineering and ECE 511 Computer Architecture; Area C - Any two of ECE 584 Semiconductor Device Fundamentals, ECE 586 Digital Integrated Circuits, ECE 587 Design of Analog Integrated Circuits or ECE 684 MOS Device Electronics; Area D - ECE 521 Linear Systems and Control or ECE 535 Digital Signal Processing and ECE 528 Introduction to Random Processes in Electrical and Computer Engineering.

Research Qualifying Exam

The purpose of the Research Qualifying Exam (RQE) is to assess whether students can define a research problem, critically review the literature related to the problem, apply appropriate research methods to study the problem, and interpret and communicate their results. The RQE requires students to complete a short research project and to document their results in a written report and an oral presentation. The RQE topic is defined by a faculty advisor in consultation with the student. A committee of three faculty members (the advisor plus two additional members) evaluates the written report and the oral presentation. During the presentation the student is expected to answer questions about their project and about fundamental concepts related to the research.
Students who enter the program with an MS degree are encouraged to start working on their RQE as soon as they enter the PhD program and no later than the start of their second semester in the program regardless of their performance on the TQE. These students are required to present their paper in the RQE exam no later than the end of their second semester in the program. Students who enter the program with a BS degree are required to take the exam prior to completing 30 credits in the program regardless of their performance on the TQE.

Evaluation
The written research paper and the presentation will be evaluated using the following four criteria. Students must receive at least a “competent” raking (three on a scale of one to five) on each of the following four evaluation criteria to pass the RQE:

- Ability to articulate the research problem and its significance.
- Ability to critically review the literature.
- Understanding of research methods.
- Ability to communicate and interpret research results.

After a student has passed the TQE and has taken the RQE, the ECE PhD Committee reviews the exam results, the student’s transcript, and a letter of recommendation from the student’s advisor. Based on this information, the PhD Committee determines whether the student is qualified for the PhD program. A qualified student will proceed to choose a thesis advisor.

Dissertation Research
A maximum of 24 credits of ECE 998 Doctoral Dissertation Proposal and ECE 999 Doctoral Dissertation may be applied to the degree. Students who choose to take fewer than 24 credits of ECE 998 Doctoral Dissertation Proposal and ECE 999 Doctoral Dissertation may earn the remaining credits from approved course work. Students cannot enroll in ECE 999 Doctoral Dissertation before they have advanced to candidacy. Students advanced to candidacy after the add period for a given semester must wait until the following semester to register for ECE 999 Doctoral Dissertation. Students cannot advance to candidacy and defend their dissertation during the same semester. Once enrolled in ECE 999 Doctoral Dissertation, students must maintain continuous registration in ECE 999 Doctoral Dissertation each semester until graduation, excluding summers. Students who defend in the summer must be registered for at least 1 credit of ECE 999 Doctoral Dissertation during that summer term.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 998</td>
<td>Doctoral Dissertation Proposal (minimum 9 credits required)</td>
<td>12-24</td>
</tr>
<tr>
<td>ECE 999</td>
<td>Doctoral Dissertation (minimum 3 credits required)</td>
<td>12-24</td>
</tr>
</tbody>
</table>

Total Credits 12-24

Advisor, Dissertation Director, and Dissertation Committee
The process of finding a dissertation topic and dissertation director is governed by the university’s policies, as described in the Requirements for Doctoral Degrees in the Academic Policies section of the catalog. Upon admission to the program, each student is assigned an ECE faculty member as an academic advisor. After the student passes the qualifying exam, the student proposes and the ECE department chair appoints a dissertation director who must be a Mason graduate faculty member with a full-time appointment. The dissertation director becomes the student’s academic advisor. Normally, the dissertation director is a member of ECE department; however, a member of another department may be appointed if warranted by the dissertation research topic. A dissertation committee should be formed within a year after the student has passed the qualifying exam. The dissertation committee consists of the dissertation director who acts as chair plus three or four additional members. All dissertation committees must include at least three members of the Mason graduate faculty, at least two of whom must be from the ECE Department. At least one member of the dissertation committee must be from outside the discipline of electrical and computer engineering. The outside member may be faculty from another Mason department or, if justified by the research topic, a qualified scientist or engineer from outside the university. All committee members must have a doctoral level degree. The dissertation committee must be approved by the ECE department chair. The dissertation director, as academic advisor, and the ECE Department chair must approve all decisions concerning a student’s course requirements and dissertation.

Dissertation Proposal, Research Competency Exam, Advancement to Candidacy
The student prepares a written dissertation proposal outlining the proposed research and submits it to the dissertation committee for approval. After completing coursework requirements and preparing a proposal, the student takes a research competency exam to demonstrate their preparation for dissertation research. The exam consists of a presentation of the dissertation proposal followed by an oral exam. The exam is administered by the student’s dissertation committee. The purpose of the oral exam is to verify that the student is familiar with the relevant material related to their research. The student is advanced to candidacy when he or she passes the oral exam and the dissertation committee approves the proposal.

Dissertation Research and Defense
Students conduct dissertation research under the guidance of their dissertation director, with regular consultation with other members of the dissertation committee. During this period, students must present their research results at least once in the form of a department seminar. The dissertation must represent an achievement in research, must be a significant contribution to its field, and should be deemed publishable in refereed journals or at highly selective conferences. On completion of the dissertation the student may be asked, at the discretion of the dissertation committee, to present a predefense in the presence of the committee members. The dissertation committee and the department chair approve the student’s application for a public defense of the doctoral dissertation. A copy of the dissertation must be placed in the University Libraries four weeks prior to the public defense. After a successful public defense and completion of the final form of the dissertation, the dissertation committee recommends the candidate for the degree of doctor of philosophy.

Teaching Requirement
To acquire teaching experience, each PhD student is required to participate in the department’s teaching activity. The requirement is typically satisfied by working as a recitation instructor for one semester, presenting several lectures within a course, or performing other teaching work approved by the department.
Signal Processing Graduate Certificate

Banner Code: VS-CERG-SIGP

Academic Advising

MSN 1G5
4400 University Drive
Fairfax, VA 22030

Phone: 703-993-1569
Email: ece@gmu.edu
Website: ece.gmu.edu/graduate-certificates/certificate-program-signal-processing

The Department of Electrical and Computer Engineering, in conjunction with the Department of Statistics, offers the Certificate in Signal Processing, which provides graduate students with an opportunity to reach a demonstrated level of competence in signal processing. Course work for the graduate certificate can be used for credit toward the MS in Statistical Science as well as the MS in Electrical or Computer Engineering. However, the certificate’s primary purpose is to provide a well-defined body of information for students who want to advance or update their knowledge in this fast-moving field, but who do not necessarily wish to complete requirements for the MS degree. The certificate may be pursued concurrently with any of the graduate degree programs in the Volgenau School.

The graduate certificate may only be pursued on a part-time basis.

Admissions & Policies

Admissions

The graduate certificate is open to all students who hold BS degrees in scientific and engineering disciplines from accredited universities and hold graduate status (either degree or non-degree) in the Volgenau School.

Policies

Program Requirements

The certificate is awarded on completion of five graduate courses (15 credits) in signal processing. A cumulative GPA of 3.00 is required, and one course with a grade of C at most may be applied toward the certificate. The certificate courses comprise two foundation courses taken by all students and three elective courses.

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a part-time basis only.

Foundation Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

Select three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 537</td>
<td>Introduction to Digital Image Processing (DIP)</td>
<td>3</td>
</tr>
<tr>
<td>ECE 621</td>
<td>Systems Identification</td>
<td></td>
</tr>
<tr>
<td>ECE 630</td>
<td>Statistical Communication Theory</td>
<td></td>
</tr>
<tr>
<td>ECE 635</td>
<td>Adaptive Signal Processing</td>
<td></td>
</tr>
<tr>
<td>ECE 722</td>
<td>Kalman Filtering with Applications</td>
<td></td>
</tr>
<tr>
<td>or ECE 728</td>
<td>Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>ECE 734</td>
<td>Detection and Estimation Theory</td>
<td></td>
</tr>
<tr>
<td>or ECE 738</td>
<td>Advanced Digital Signal Processing</td>
<td></td>
</tr>
<tr>
<td>CSI 978</td>
<td>Statistical Analysis of Signals</td>
<td></td>
</tr>
<tr>
<td>CSI 672</td>
<td>Statistical Inference</td>
<td></td>
</tr>
<tr>
<td>or STAT 652</td>
<td>Statistical Inference</td>
<td></td>
</tr>
<tr>
<td>CSI 678</td>
<td>Times Series Analysis and Forecasting</td>
<td></td>
</tr>
<tr>
<td>or STAT 658</td>
<td>Time Series Analysis and Forecasting</td>
<td></td>
</tr>
<tr>
<td>ECE 751</td>
<td>Information Theory</td>
<td></td>
</tr>
<tr>
<td>or ECE 754</td>
<td>Optimum Array Processing I</td>
<td></td>
</tr>
<tr>
<td>or CS 775</td>
<td>Advanced Pattern Recognition</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Systems Engineering Graduate Certificate (ECE)

Banner Code: VS-CERG-SYST

Architecture-Based Systems Integration
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu

C4I & Cyber
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu

Communications and Networking
3100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1569
Email: ece@gmu.edu

Engineering Resilient Enterprise Systems
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu

Financial Systems Engineering
2100 Nguyen Engineering Building
Admissions & Policies

Admissions
Architecture-Based Systems Integration Concentration
A bachelor’s degree is required for admission to a certificate program.

C4I & Cyber Concentration
The certificate with this concentration is available to students who hold bachelor’s degrees in engineering and scientific disciplines or are in graduate status in such programs. Admission requirements are identical to those for the Systems Engineering, MS (p. 1170).

Communications and Networking Concentration
The certificate with this concentration in communications and networking is open to all students who hold BS degrees in scientific and engineering disciplines from accredited universities.

Engineering Resilient Enterprise Systems Concentration
The certificate with this concentration is available to any student who holds a bachelor's degree in an engineering or scientific discipline or has graduate status in such a program. Admission requirements are identical to those for the Systems Engineering, MS (p. 1170), except that the math requirements include only MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142), MATH 114 Analytic Geometry and Calculus II, and a probability and statistics course.

Financial Systems Concentration
The certificate with this concentration will be open to all students who hold a BS degree in scientific and engineering disciplines from an accredited university program, with a GPA minimum established by VSE for all MS programs. Students who are already enrolled in a master’s program must submit an application form to enroll in this certificate with concentration program.

Tactical Computer Operations Concentration
Students applying to the certificate with this concentration must hold a bachelor’s degree in either computer science or computer engineering. Prospective students without these specific degrees will need to have a technical bachelor’s degree and show academic competence in the areas of: C (C++, C#, Objective C), Assembler, discrete mathematics, and computer networking. An undergraduate grade point average (GPA) of 3.0 or better (4.0 scale) is required. The Graduate Record Exam (GRE) is not required.

Policies
The Systems Engineering Graduate Certificate may be pursued on a part-time basis only.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements
Total credits: 12-15
This certificate may be pursued on a part-time basis only.

Concentration in Architecture-Based Systems Integration (ABSI)
Administered by the Department of Systems Engineering and Operations Research (https://seor.gmu.edu)

Coursework
The following four courses must be completed with a grade of B or better:

Code | Title | Credits
--- | --- | ---
SYST 520 | System Engineering Design | 3
SYST 618 | Model-based Systems Engineering | 3
SYST 620 | Discrete Event Systems | 3
SYST 621 | Systems Architecture Design | 3

Total Credits | 12

Certificate coursework within the Systems Engineering MS
In addition to the ABSI concentration courses, students must take the following six courses within the Systems Engineering, MS (p. 1170):

Code | Title | Credits
--- | --- | ---
SYST 505 | Systems Engineering Principles | 3
SYST 510 | Systems Definition and Cost Modeling | 3
SYST 530 | Systems Engineering Management I | 3
SYST 611 | System Methodology and Modeling | 3
SYST 699 | Masters Project | 3
Select one approved elective from the ABSI concentration | 3

Total Credits | 18

1 Students who have work experience in systems engineering should consult with their advisor on replacing SYST 505 Systems Engineering Principles with a higher-level SYST course.

Concentration in C4I & Cyber (C4IC)
Administered by the Department of Systems Engineering and Operations Research (https://seor.gmu.edu)

This certificate with concentration may be pursued on a part-time basis only.

The certificate with concentration requires 12 credits (4 courses). Students must complete the following with an average grade of B or better.

Coursework

Code | Title | Credits
--- | --- | ---
SYST 680 | Principles of Command, Control, Communications, Computing, and Intelligence (C4I) | 3
or ECE 670 | Principles of Command, Control, Communications, Computing, and Intelligence (C4I) |
**OR 542** Operations Research: Stochastic Models 3

or **ECE 528** Introduction to Random Processes in Electrical and Computer Engineering

Select two from the following: 6

**ECE 542** Computer Network Architectures and Protocols

**ECE 630** Statistical Communication Theory

**ECE 642** Design and Analysis of Computer Communication Networks

**OR 635** Discrete System Simulation

**SYST 584** Heterogeneous Data Fusion

**SYST 664** Bayesian Inference and Decision Theory

**SYST 683** Modeling, Simulation, and Gaming

Total Credits 12

**Completing the certificate with the C4I concentration within the Systems Engineering Master's Program**

In addition to the four courses above, students must complete the following six courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 505</td>
<td>Systems Engineering Principles</td>
<td>3</td>
</tr>
<tr>
<td>SYST 510</td>
<td>Systems Definition and Cost Modeling</td>
<td>3</td>
</tr>
<tr>
<td>SYST 520</td>
<td>System Engineering Design</td>
<td>3</td>
</tr>
<tr>
<td>SYST 530</td>
<td>Systems Engineering Management I</td>
<td>3</td>
</tr>
<tr>
<td>SYST 611</td>
<td>System Methodology and Modeling</td>
<td>3</td>
</tr>
<tr>
<td>SYST 699</td>
<td>Masters Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

**Concentration in Communications and Networking (CONE)**

Administered by the Department of Electrical and Computer Engineering (https://ece.gmu.edu/welcome-gmu-ece-department).

The certificate with a concentration in Communications and Networking is awarded on completion of five graduate courses (15 credits) in communications and networking. A cumulative GPA of 3.00 is required and one course with a grade of C at most may be applied toward the certificate. The certificate courses comprise two required foundation courses and three electives.

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation Courses:</td>
<td><strong>ECE 528</strong></td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>ECE 542</strong></td>
<td>Computer Network Architectures and Protocols</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

**Electives**

After completing the foundation courses, students choose electives by taking three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 535</td>
<td>Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 565</td>
<td>Introduction to Optical Electronics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

**Concentration in Engineering Resilient Enterprise Systems (ERES)**

Administered by the Department of Systems Engineering and Operations Research (https://seor.gmu.edu).

To be eligible for a certificate with concentration in Engineering Resilient Enterprise Systems, students must complete two required courses (6 credits) plus two electives (6 credits) with an average grade of B or better.

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 523</td>
<td>Engineering Resilient and Agile Enterprise Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SYST 618</td>
<td>Model-based Systems Engineering</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

**Electives**

The remaining two electives must be taken from the list below with the approval of the advisor. Courses designated as basic methods courses may also be used as an elective. Some certificate electives may require stronger math requirements.

<table>
<thead>
<tr>
<th>Electives</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 514</td>
<td>Systems Thinking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>INFS 622</td>
<td>Information Systems Analysis and Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SYST 542</td>
<td>Decision Support Systems Engineering</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SYST 584</td>
<td>Heterogeneous Data Fusion</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SYST 630</td>
<td>Systems Engineering Management II</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select at least one course from the following:

<table>
<thead>
<tr>
<th>Electives</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SyS 514</td>
<td>Systems Thinking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>INFS 622</td>
<td>Information Systems Analysis and Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SYST 542</td>
<td>Decision Support Systems Engineering</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SYST 584</td>
<td>Heterogeneous Data Fusion</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SYST 630</td>
<td>Systems Engineering Management II</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select the second course from the courses listed above or from the following:

<table>
<thead>
<tr>
<th>Electives</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Concentration in Financial Systems (FNSY)
Administered by the Department of Systems Engineering and Operations Research (https://seor.gmu.edu).

To be eligible for the certificate with concentration in Financial Systems Engineering, students must complete three required courses (9 credits) plus one elective (3 credits) with an average grade of B or better.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST/OR 538</td>
<td>Analytics for Financial Engineering and Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>SYST/OR 588</td>
<td>Financial Systems Engineering I: Introduction to Options, Futures, and Derivatives</td>
<td>3</td>
</tr>
<tr>
<td>SYST/OR 688</td>
<td>Financial Systems Engineering II: Derivative Products and Risk Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Elective

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 645</td>
<td>Stochastic Processes</td>
<td>3</td>
</tr>
<tr>
<td>OR 682</td>
<td>Computational Methods in Engineering and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>SYST 584</td>
<td>Heterogeneous Data Fusion</td>
<td></td>
</tr>
<tr>
<td>SYST 671</td>
<td>Judgment and Choice Processing and Decision Making</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Concentration in Tactical Computer Operations (TCO)
Administered by the Department of Electrical and Computer Engineering (https://ece.gmu.edu/welcome-gmu-ece-department).

Students must meet prerequisites for courses by either taking the appropriate undergraduate courses or through instructor permission.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 511</td>
<td>Computer Architecture</td>
<td>3</td>
</tr>
<tr>
<td>CFRS 761</td>
<td>Malware Reverse Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Electives

Select two courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFRS 767</td>
<td>Penetration Testing in Computer Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CFRS 769</td>
<td>Anti-Forensics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Telecommunications, MS
Banner Code: VS-MS-TCOM

Academic Advising

MSN 2B5
4400 University Drive
Fairfax, VA 22030
Phone: 703-993-3810
Email: tcom@gmu.edu
Website: telecom.gmu.edu

The innovative, interdisciplinary MS in Telecommunications program provides a blend of cutting-edge engineering-oriented courses in wireless and fiber communications systems, networks, computers, and Internet protocols, combined with courses on telecommunications policy, legal, business, and international aspects. The interdisciplinary program is designed for students who wish to enter the field of telecommunications or are working in the field and want to advance their knowledge of telecommunications. It concentrates on practical applications of telecommunications rather than on a theoretical approach, and focuses on the engineering and IT aspects of telecommunications, in combination with the interdisciplinary knowledge offered by selected courses in telecommunications business and policy. More than 30 new engineering and IT courses have been designed especially for this program, including four certificate programs that may be incorporated into, and taken concurrently with, the MS in telecommunications.

Program Structure

A novelty of the program is its structure, which consists of four emphasis areas. This structure allows students to identify more clearly the various specialties in telecommunications technology. Students enjoy considerable flexibility because they are able to design their master’s programs to fit their technical preferences, including the option of taking courses in other programs at Mason. A majority of the course material comes from the Electrical and Computer Engineering (ECE) Department and the Systems Engineering and Operations Research (SEOR) Department. Courses offered by ECE focus on network technologies, such as fiber optics, and Internet protocols; network applications, such as networked multicore computer systems, client-server architectures, and network management; and wireless communications, such as digital communications, satellite communications, mobile communications, and GPS. Unique courses in the telecommunications program, such as Border Gateway Protocols, Interior Gateway Protocols, MPLS, GPS, and Advanced Link Design, complement courses given in ECE programs. In addition to the many new telecommunications courses developed for this program, ECE already offers a number of other graduate courses.
in communications as part of the graduate electrical engineering and computer engineering programs. Those courses may also be taken for credit under the MS in Telecommunications Program, provided students have the prerequisite background. Courses related to systems engineering, project management, and business of telecommunications (including the design and optimization of large, complex communication networks) are offered by SEOR. Both SEOR fields, systems engineering and operations research, play significant roles in all aspects of the design, operation, and business of telecommunications, and this knowledge is important for students of telecommunications. The blend of in-depth knowledge of specific elements of telecommunications technology, combined with knowledge of broader issues in telecommunications, is increasingly necessary for people who intend to work in a management or decision-making position within the telecommunications industry, telecommunications-related businesses, or government institutions dealing with telecommunications. The MS in Telecommunications provides that blend.

Admissions & Policies

Admissions Requirements
Specific application deadlines and requirements (https://admissions.gmu.edu/grad/application-deadlines-and-requirements/?academicUnit=VS&_ga=1.107632321.273102085.1480697294) are available through the Office of Graduate Admissions.

The program is open to students who hold a BS or BA degree from an accredited college or university in engineering, math, science, computer science, business (with a quantitative background), economics, or other analytical disciplines, and students who have equivalent work experience indicating analytical aptitude. Depending on their background, some applicants may be required to complete 3 to 6 credits of preliminary course work before they are allowed to enroll in any of the core courses or emphasis courses in the program. Applicants who have not studied mathematics beyond the equivalent of algebra II/trigonometry at high school or introductory calculus classes (such as those offered in business or database management programs) will be required to take TCOM 530 Data Communications Fundamentals, the foundation course that prepares students for TCOM 521 Systems Engineering for Telecommunications Management, prior to being allowed to take TCOM 500 Modern Telecommunications. A minimum undergraduate GPA of 3.00 is usually required.

Students may be admitted to the MS program as degree seeking students, or they may be admitted for nondegree study within the program, which allows them to take individual courses. Students in the nondegree program may apply to the degree program, provided their GPA within the MS in Telecommunications Program is 3.00 or above. Up to 12 credits earned in nondegree study may be transferred into the degree program, provided each of the courses to be transferred in was passed with a grade of B or above.

Policies

Program Format
The program consists of 9 credits of mandatory engineering and technology core courses (TCOM 500 Modern Telecommunications, TCOM 530 Data Communications Fundamentals and TCOM 521 Systems Engineering for Telecommunications Management); 6 credits of electives drawn from an interdisciplinary group of core courses (TCOM 547 Project Management in Telecommunications, or TCOM 750 Coordinating Seminar), and a basic switching lecture and laboratory course (TCOM 514 Basic Switching: Lecture and Laboratory Course) or an Internet protocol routing lecture and laboratory course (TCOM 515 Internet Protocol Routing: Lecture and Laboratory Course); and four areas of emphasis. Students who enter the program with an undergraduate degree that shows evidence of successfully completing LAN and WAN technologies may substitute TCOM 535 The TCP/IP Suite of Internet Protocols for TCOM 530 Data Communications Fundamentals in their mandatory core program, respectively.

Students must complete 30 credits of coursework through a combination of core and emphasis courses. The core consists of 15 credits, with the remaining 15 credits earned in areas of emphasis. The emphases are sub-areas of telecommunications that provide necessary depth.

Students are usually expected to take courses from at least two emphasis areas. Up to 6 credits from the core program may be carried forward into the emphases, thus permitting up to 6 credits of electives to be taken inside or outside the prime emphasis area chosen by the student. TCOM 530 Data Communications Fundamentals may be carried forward into emphasis area 1, 2, or 3; TCOM 521 Systems Engineering for Telecommunications Management may be carried forward into emphasis area 4. Double counting is not permitted, but the courses carried forward into a given emphasis may permit that area’s credit requirement to be satisfied, thus allowing elective courses to be taken outside that area. Usually, a minimum of 6 credits is needed to satisfy one emphasis area.

Program Requirements
Students must complete a minimum of 30 graduate credits with a GPA of 3.00 or higher. Students must earn a B (3.00) or above in core courses TCOM 500 Modern Telecommunications, TCOM 521 Systems Engineering for Telecommunications Management and TCOM 530 Data Communications Fundamentals. Up to 6 credits of a combination of C grades may be carried within the program from the remaining core courses or from the emphasis courses, provided the overall GPA is 3.00 or higher.

Telecommunications Certificates
Three 15-credit certificates are offered by the MS in TCOM Program. Students may pursue these certificates as stand-alone programs or as part of their degree program. For the former, they are required to submit a graduate program application indicating their desire to enroll in the appropriate graduate certificate program. For the latter, because they are already enrolled in a degree program, they need only add the appropriate graduate certificate to their graduate program status at least one semester prior to the award of the certificate. The courses within the certificates are drawn directly from the MS in TCOM Program. If a student initially signs up for only a certificate program, it is possible to transfer into the degree program later, transferring up to 12 credits into the degree program. Students must therefore ensure they have transferred into the degree program prior to starting course work beyond 12 credits in the certificate program to ensure that all credits from the certificate program may transfer into the degree program. Students who transfer from a certificate program into the degree program may earn the certificate and the degree on satisfactory completion of the respective requirements. Applicable courses may count for the certificate and the degree programs.

Students may transfer in one 3-credit course from another program or institution toward their TCOM certificate, provided the course in question
was passed with a B grade or higher. Students are permitted to carry one C grade within their certificate program, provided the overall GPA is 3.00 or above.

- Advanced Networking Protocols for Telecommunications Graduate Certificate (p. 1086)
- Telecommunications Forensics and Security Graduate Certificate (p. 1116)
- Wireless Communications Graduate Certificate (p. 1117)

### Degree Requirements

Total credits: 30

### Plan of Study

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 521</td>
<td>Systems Engineering for Telecommunications Management</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 530</td>
<td>Data Communications Fundamentals ¹</td>
<td>3</td>
</tr>
<tr>
<td>or TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td></td>
</tr>
</tbody>
</table>

### Elective Core Courses

Select 6 credits from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBP 726</td>
<td>Telecommunications Policy</td>
<td></td>
</tr>
<tr>
<td>TCOM 514</td>
<td>Basic Switching: Lecture and Laboratory Course ²</td>
<td></td>
</tr>
<tr>
<td>or TCOM 515</td>
<td>Internet Protocol Routing: Lecture and Laboratory Course</td>
<td></td>
</tr>
<tr>
<td>TCOM 547</td>
<td>Project Management in Telecommunications</td>
<td></td>
</tr>
<tr>
<td>TCOM 750</td>
<td>Coordinating Seminar</td>
<td></td>
</tr>
</tbody>
</table>

### Area of Emphasis ³

Total Credits 15

Total Credits 30

¹ Students must receive prior permission to substitute TCOM 535 The TCP/IP Suite of Internet Protocols for TCOM 530 Data Communications Fundamentals.

² Both TCOM 514 Basic Switching: Lecture and Laboratory Course and TCOM 515 Internet Protocol Routing: Lecture and Laboratory Course may be taken for credit, but only one may be used to satisfy a core elective requirement.

³ See below for list of courses that fulfill each area of emphasis.

### Areas of Emphasis

A minimum of 15 credits is required. Students usually take 15 credits from at least two of the four emphasis areas, or they may elect to take all 15 credits from the systems engineering of telecommunications area (emphasis 4). Students electing to carry forward a core course (TCOM 530 Data Communications Fundamentals or TCOM 521 Systems Engineering for Telecommunications Management) into an appropriate emphasis area have the option of taking an elective course in that area or an alternate area to bring the total number of credits in the emphasis area to 15.

An area of emphasis can be completed by courses listed under the emphasis or considered applicable to that area for a total of at least 6 credits. Some emphasis courses are in more than one area; for example, TCOM 535 The TCP/IP Suite of Internet Protocols is in emphasis 1, network technologies, and emphasis 2, network applications.

Basic courses in each emphasis have been specially designed for the telecommunications program. These courses do not require completion of prerequisites from other MS programs in the Volgenau School. Other courses, which are marked with asterisks, are from other MS programs in the Volgenau School and represent viable options for students who have appropriate prerequisites in some technical areas. Although these courses assume certain prerequisites from their specific MS programs, advanced students who already know the prerequisite material can seek instructor permission to enroll in those courses.

Alternatives to completing each emphasis area by using appropriate combinations of courses not listed under a given module may be admissible subject to prior approval by the program director. In addition, independent study, reading, and research courses may be taken in all five areas. These courses permit students to make use of their work experiences to undertake non-classroom courses for credit within the program.

Mason has negotiated an articulation agreement with the University of Virginia that allows up to 12 credits of the Informational Systems Management Certificate Program from the University of Virginia to be transferred into emphasis area 4 of the TCOM Program. In addition, graduate students from the National Defense University (NDU) may transfer up to 9 credits from NDU’s Information Security Certificate Program.

Courses listed below from other graduate programs in the Volgenau School listed can be taken for credit in this program if the student has the appropriate prerequisites. Other courses from other programs may be taken for credit, with prior approval.

### Emphasis 1, Network Technologies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 515</td>
<td>Internet Protocol Routing: Lecture and Laboratory Course</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 561</td>
<td>Security, Privacy, and Applied Cryptography for Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 562</td>
<td>Network Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 608</td>
<td>Optical Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 609</td>
<td>Interior Gateway Protocol (IGP) Routing</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 610</td>
<td>Border Gateway Protocol (BGP) Routing</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 614</td>
<td>Advanced Routing Lab</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 616</td>
<td>Scalable Network Architecture</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 617</td>
<td>Enterprise Network Architecture</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 631</td>
<td>Voice Over IP</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 660</td>
<td>Network Forensics</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 661</td>
<td>Digital Media Forensics</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 663</td>
<td>Operations of Intrusion Detection for Forensics</td>
<td></td>
</tr>
<tr>
<td>TCOM 664</td>
<td>Incident Response Forensics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td></td>
</tr>
</tbody>
</table>
Emphasis 2, Network Applications

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 515</td>
<td>Internet Protocol Routing: Lecture and Laboratory Course</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 561</td>
<td>Security, Privacy, and Applied Cryptography for Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 562</td>
<td>Network Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 608</td>
<td>Optical Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 609</td>
<td>Interior Gateway Protocol (IGP) Routing</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 610</td>
<td>Border Gateway Protocol (BGP) Routing</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 611</td>
<td>Multi-Protocol Label Switching (MPLS)</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 614</td>
<td>Advanced Routing Lab</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 616</td>
<td>Scalable Network Architecture</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 617</td>
<td>Enterprise Network Architecture</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 631</td>
<td>Voice Over IP</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 660</td>
<td>Network Forensics</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 662</td>
<td>Advanced Secure Networking</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 663</td>
<td>Operations of Intrusion Detection for Forensics</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 664</td>
<td>Incident Response Forensics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 646</td>
<td>Applied Cryptography</td>
<td>3</td>
</tr>
<tr>
<td>CS 756</td>
<td>Performance Analysis of Computer Networks</td>
<td>3</td>
</tr>
<tr>
<td>INFS 612</td>
<td>Principles and Practices of Communication Networks</td>
<td>3</td>
</tr>
<tr>
<td>INFS 640</td>
<td>Introduction to Electronic Commerce</td>
<td>3</td>
</tr>
</tbody>
</table>

Emphasis 3, Wireless Communications

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 552</td>
<td>Introduction to Mobile Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 562</td>
<td>Network Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 606</td>
<td>Advanced Mobile Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 607</td>
<td>Satellite Communications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 653</td>
<td>Global Positioning System (GPS)</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 660</td>
<td>Network Forensics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 732</td>
<td>Mobile Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 741</td>
<td>Wireless Networks</td>
<td>3</td>
</tr>
</tbody>
</table>

Emphasis 4, Systems Engineering of Telecommunications

This area of emphasis can be taken as one of two emphases or as one 15-credit emphasis. No more than two SYST courses can be taken within this area.

Accelerated Master’s

Electrical Engineering, BS/Telecommunications, Accelerated MS

Overview

Highly-qualified students in the Electrical Engineering, BS (p. 1097) have the option of obtaining an accelerated Telecommunications, MS (p. 1111).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Students can apply for the program during the semester in which they expect to complete 90 undergraduate credits applicable toward the BS degree. An overall GPA of at least 3.10 at the time of application is required. Criteria for admission are identical to criteria for admission to the MS in Telecommunications Program. Application is made using the accelerated graduate program application forms, and all usual requirements must be met. The accelerated program application form specifies the overlapping courses and details the 3.10 undergraduate GPA.

Accelerated Option Requirements

Students must complete 145 credits that satisfy all the requirements for the BS and MS degrees, with 6 credits overlap. Students take 6 credits of 500-level courses as part of their technical electives or substitutes for required courses as part of their 121-credit undergraduate program. Students may take additional graduate-level courses as part of their BS technical electives with advisor approval. These additional graduate-level courses will not count toward the MS degree. Students admitted to the accelerated program must maintain an overall GPA of at least 3.00 during the MS program and present a GPA of at least 3.00 for the 24 credits of graduate work submitted for the MS degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits from the following:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td></td>
</tr>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td></td>
</tr>
</tbody>
</table>

Or approved substitutions

Total Credits 6
Degree Conferral
Students must apply to have the BS conferred the semester before they expect to complete the BS requirements. At the completion of the MS requirements, the MS degree will be awarded.

Individualized Study, BIS/Telecommunications, Accelerated MS Overview
Highly-qualified students in the Individualized Study, BIS (p. 588) have the option of obtaining an accelerated Telecommunications, MS (p. 1111).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Individualized Study, BIS (p. 588) program may apply for this option if they have earned 90 undergraduate credits (including 15 Mason resident credits) with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Telecommunications, MS (p. 1111) program.

Accelerated Option Requirements
Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students select TCOM courses from the list below to meet the requirements of the accelerated program. Six credits of TCOM courses will be applied to meet the requirements of both the BS and MS TCOM programs. An additional three credits of TCOM courses is required for the BIS Individualized Concentration (IND) with emphasis on telecommunication. Note that accelerated students can only take the courses in the list below if they passed the listed prerequisite course with a B or higher.

BIS Concentration
Total credits: 34-46

Students who are pursuing the Individualized Study, BIS (p. 588), Individualized concentration (IND) with an emphasis on telecommunications must take:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select an additional 500-level TCOM course(s) from the list below</td>
<td>3</td>
</tr>
<tr>
<td>BIS 300</td>
<td>Understanding Interdisciplinary Studies</td>
<td>3</td>
</tr>
<tr>
<td>BIS 390</td>
<td>The Research Process</td>
<td>3</td>
</tr>
<tr>
<td>BIS 490</td>
<td>RS: Senior Project (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>BIS 491</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ECE 301</td>
<td>Digital Electronics</td>
<td>3</td>
</tr>
<tr>
<td>IT 341</td>
<td>Data Communications and Network Principles</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>Select additional courses related to telecommunication</td>
<td>9-21</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 31-43

1 Required to reach the necessary number of credits for the BIS Individualized concentration.

Telecommunications Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 530</td>
<td>Data Communications Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 607</td>
<td>Satellite Communications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 608</td>
<td>Optical Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 631</td>
<td>Voice Over IP</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
Accelerated students who have passed IT 341 Data Communications and Network Principles with a grade of B or higher will not be required to take TCOM 530 in the Telecommunications, MS core. Other TCOM courses may be approved on a case-by-case basis.

See each course for individual prerequisite requirements.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

Information Technology, BS/Telecommunications, Accelerated MS Overview
Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Telecommunications, MS (p. 1111).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Information Technology, BS (p. 1122) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Telecommunications, MS (p. 1111) program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for the BS and MS programs.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications (To satisfy the IT 300 BS, AIT requirement)</td>
<td>6</td>
</tr>
<tr>
<td>TCOM 530</td>
<td>Data Communications Fundamentals (To satisfy the IT 341 BS, AIT requirement)</td>
<td>6</td>
</tr>
</tbody>
</table>

Note:
Accelerated students who have passed IT 341 Data Communications and Network Principles with a grade of B or higher will not be required to take TCOM 530 in the Telecommunications, MS core. Other TCOM courses may be approved on a case-by-case basis.
Systems Engineering, BS/Telecommunications, Accelerated MS

Overview
Highly-qualified students in the Systems Engineering, BS (p. 1164) have the option of obtaining an accelerated Telecommunications, MS (p. 1111).

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admission Requirements
Students in the Systems Engineering, BS (p. 1164) program who preferably have chosen to take the systems engineering of telecommunications elective sequence may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Other students will be considered on their individual merit. Criteria for admission are identical to criteria for admission to the Telecommunications, MS (p. 1111) program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlap selected from the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 530</td>
<td>Data Communications Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>SYST 530</td>
<td>Systems Engineering Management I</td>
<td>3</td>
</tr>
<tr>
<td>SYST 573</td>
<td>Decision and Risk Analysis (if taken, replaces TCOM 521 in the telecommunications core requirements)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

1 May not be taken twice for credit. If any of these courses is taken in the core element, it cannot be taken again in the elective element.

Electives
Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>TCOM 660</td>
<td>Network Forensics</td>
<td></td>
</tr>
<tr>
<td>TCOM 661</td>
<td>Digital Media Forensics</td>
<td></td>
</tr>
</tbody>
</table>

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Telecommunications Forensics and Security Graduate Certificate

Banner Code: VS-CERG-TFAS

3100 Nguyen Engineering Building
Fairfax Campus

Phone: 703-993-3810
Email: tcom@gmu.edu
Website: http://ece.gmu.edu/graduate-certificates/certificate-program-telecommunications-forensics-and-security

This graduate certificate provides an in-depth understanding of security and forensics as they apply to networks and digital storage media.

Requirements

Certificate Requirements
Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 562</td>
<td>Network Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>or ISA 562</td>
<td>Information Security Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>TCOM 515</td>
<td>Internet Protocol Routing: Lecture and Laboratory Course</td>
<td>3</td>
</tr>
<tr>
<td>or TCOM 561</td>
<td>Security, Privacy, and Applied Cryptography for Telecommunications</td>
<td></td>
</tr>
</tbody>
</table>

Select one from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 660</td>
<td>Network Forensics</td>
<td>1</td>
</tr>
<tr>
<td>TCOM 661</td>
<td>Digital Media Forensics</td>
<td>1</td>
</tr>
<tr>
<td>TCOM 663</td>
<td>Operations of Intrusion Detection for Forensics</td>
<td>1</td>
</tr>
<tr>
<td>TCOM 664</td>
<td>Incident Response Forensics</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 9

1 May not be taken twice for credit. If any of these courses is taken in the core element, it cannot be taken again in the elective element.

Electives
Select 6 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>TCOM 660</td>
<td>Network Forensics</td>
<td></td>
</tr>
<tr>
<td>TCOM 661</td>
<td>Digital Media Forensics</td>
<td></td>
</tr>
</tbody>
</table>
Wireless Communications Graduate Certificate

Banner Code: VS-CERG-WIRE

Phone: 703-993-3810
Email: tcom@gmu.edu
Website: ece.gmu.edu/graduate-certificates/certificate-program-wireless-communications

This graduate certificate provides a broad understanding of the technologies, applications, and systems used in all forms of wireless communications.

Admissions & Policies

Policies

This certificate may be pursued on a full- or part-time basis.

Requirements

Certificate Requirements

Total credits: 15

This certificate may be pursued on a full- or part-time basis.

Students must complete all requirements within a concentration.

Concentration in General (GEN)

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 551</td>
<td>Digital Communication Systems</td>
<td></td>
</tr>
<tr>
<td>TCOM 552</td>
<td>Introduction to Mobile Communications Systems</td>
<td></td>
</tr>
<tr>
<td>TCOM 606</td>
<td>Advanced Mobile Communications Systems</td>
<td></td>
</tr>
<tr>
<td>TCOM 607</td>
<td>Satellite Communications</td>
<td></td>
</tr>
<tr>
<td>TCOM 653</td>
<td>Global Positioning System (GPS)</td>
<td></td>
</tr>
</tbody>
</table>

Select 9 credits from the following: 9

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select six credits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6

Concentration in Integration and Testing (INTT)

The concentration may only be pursued on a part-time basis only.

The certificate with Integration and Testing concentration is awarded on successful completion of five graduate courses (15 credits) from the list of required courses. A cumulative GPA of 3.00 is required, at most one course with a grade of C may be applied toward the certificate, and no more than one, 3-credit graduate course in the appropriate discipline may be transferred into the certificate from an appropriately accredited program at another institute of higher learning.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td>3</td>
</tr>
<tr>
<td>ECE 673</td>
<td>Discrete Event Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 674</td>
<td>Systems Architecture Design</td>
<td>3</td>
</tr>
<tr>
<td>ECE 675</td>
<td>System Integration and Arch. Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>SWE 637</td>
<td>Software Testing</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Concentration in Technologies and Applications (TECA)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 631</td>
<td>Voice Over IP</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Select six credits

Total Credits 6

1 Students may earn the credits from the Telecommunications, MS (p. 1113) emphasis areas 1, 2, and 3, including those in the mandatory course list that are not part of the 9 credits of core courses for the certificate.

Department of Information Sciences and Technology

Phone: 703-993-3565
Website: ist.gmu.edu

Information Sciences and Technology offers undergraduate and graduate programs to develop expertise in applying information technology to support business applications. The programs emphasize problem-solving, communication, technical, and leadership skills.

Undergraduate

The BS in Information Technology program aims to meet the existing and emerging needs of industry by educating students in current principles and practices in the application of information technology. The program focuses on equipping graduates with effective skills for interacting at the management level as well as the technical level. Graduates are hired in positions that focus on the application of IT in an increasing
number of emerging sub-disciplines, including network administration and telecommunications, information security, web development and multimedia, database technology and programming, and health information technology.

Graduate

The MS in Applied Information Technology is the very best graduate education in IT for high-potential leaders, especially those working on IT solutions that affect the federal government, industry or non-profit. Its objective is to graduate individuals of competence and character who can lead multidisciplinary teams in the design, justification, development, management, and sustainment of mega-systems from data to decision in the private and federal sectors. The MS in AIT provides a high quality curricula for students seeking to pursue their careers in the leading IT areas including Cyber Security, Big Data Analytics, Knowledge Mining, Data Analytics in Social Media, and Cyber-Human Interaction.

At the doctoral level, the department offers a concentration in the Volgenau School’s PhD in IT (p. 1026) program.

Faculty

Faculty

Professors
Caraballo, Gantz (Retired Emeritus), Jajodia

Associate Professors
Albanese, Boicu, Bruno, Ceesay, Foxwell, Islam (Associate Chair for Undergraduate Studies), Johri, Rytkova (Associate Chair for Graduate Studies), Sanghera, Snow, Sun, Uzuner, Wang

Assistant Professors
Ahmadi, Bono, Hashmi, Morikawa, Motti, Park, Purohit, Rafatirad, Shuman, Winston, Zhao

Instructors
Farrell, Garrison, Lyons

Adjunct Professors

Admissions & Policies

Admissions

A bachelor’s degree is required for admission to the certificate.

Requirements

Certificate Requirements

Total credits: 12

This certificate may be pursued on a full-or part-time basis.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 660</td>
<td>Cyber Security Fundamentals</td>
<td>12</td>
</tr>
<tr>
<td>AIT 670</td>
<td>Cloud Computing Security</td>
<td></td>
</tr>
<tr>
<td>AIT 671</td>
<td>Information System Infrastructure Lifecycle</td>
<td></td>
</tr>
<tr>
<td>AIT 672</td>
<td>Identity and Access Management</td>
<td></td>
</tr>
<tr>
<td>AIT 673</td>
<td>Cyber Incident Handling and Response</td>
<td></td>
</tr>
<tr>
<td>AIT 701</td>
<td>Cyber Security: Emerging Threats and Countermeasures</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 12

Applied Information Technology, MS

Banner Code: VS-MS-AIT

Academic Advising

5400 Nguyen Engineering Building
Fairfax Campus
The MS in Applied Information Technology (AIT) is the very best graduate education in IT for high-potential leaders, especially those working on IT solutions that affect the federal government, industry or non-profit. Its objective is to graduate individuals of competence and character who can lead multidisciplinary teams in the design, justification, development, management, and sustainment of mega-systems from data to decision in the private and federal sectors. The MS in AIT provides a high quality curricula for students seeking to pursue their careers in the leading IT areas including Cyber Security, Big Data Analytics, Knowledge Mining, Data Analytics in Social Media, and Cyber-Human Interaction. Faculty include professors from the Volgenau School, the School of Business, and the College of Humanities and Social Sciences, plus industry leaders with unique reputations in the subject area as adjunct professors and guest lecturers. The faculty expose students to the pragmatic issues of IT, not just the theory.

Admissions & Policies

Admissions

Applicants must have completed a baccalaureate degree from an accredited program with a reputation for high academic standards and an earned GPA of 3.00 or better in their 60 highest-level credits. They must be experienced in the fundamentals of IT and quantitative methods. In addition, applicants must:

- Provide two letters of recommendation, preferably from academic references or references in industry or government who are familiar with the applicant’s professional accomplishments.
- Provide a resume and detailed statement of career goals and professional aspirations.
- Have achieved a satisfactory score on the TOEFL examination for non-native English speakers.

Requirements

Degree Requirements

Total credits: 30-36 credits

Completion of the MS program requires a minimum of 30 approved graduate credits (10 courses). To provide a common background in the fundamentals of information sciences and technology, all students are required to complete four core courses. In addition to the core courses, students must choose a concentration within the program by taking six courses from one of the concentration areas listed below.

Students in all concentrations may take other VSE graduate-level courses not listed below as part of their MS technical electives subject to advisor approval.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required Core Courses</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>For students in all concentrations except the IT Management concentration</td>
<td></td>
</tr>
</tbody>
</table>

Concentrations

Available Concentrations
- Cyber Security (CYBR) (p. 1119)
- Cyber-Human Systems (CBHS) (p. 1119)
- Data Analytics and Intelligence Methods (DAIN) (p. 1120)
- IT Management (ITMG) (p. 1120)

Cyber Security (CYBR)
Select four courses from the concentration foundation and two courses from the electives from the following list of courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation</td>
<td></td>
</tr>
<tr>
<td>AIT 660</td>
<td>Cyber Security Fundamentals</td>
<td>12</td>
</tr>
<tr>
<td>AIT 670</td>
<td>Cloud Computing Security</td>
<td></td>
</tr>
<tr>
<td>AIT 681</td>
<td>Secure Software Development</td>
<td></td>
</tr>
<tr>
<td>AIT 682</td>
<td>Network and Systems Security</td>
<td></td>
</tr>
<tr>
<td>AIT 702</td>
<td>Incident Handling and Penetration Testing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>AIT 590</td>
<td>Topics in Applied Information Technology</td>
<td></td>
</tr>
<tr>
<td>AIT 672</td>
<td>Identity and Access Management</td>
<td></td>
</tr>
<tr>
<td>AIT 690</td>
<td>Advanced Topics in Applied Information Technology</td>
<td></td>
</tr>
<tr>
<td>AIT 699</td>
<td>Research Project</td>
<td></td>
</tr>
<tr>
<td>AIT 701</td>
<td>Cyber Security: Emerging Threats and Countermeasures</td>
<td></td>
</tr>
<tr>
<td>AIT 712</td>
<td>Applied Biometric Technologies</td>
<td></td>
</tr>
<tr>
<td>AIT 736</td>
<td>Applied Machine Learning</td>
<td></td>
</tr>
<tr>
<td>AIT 790</td>
<td>Advanced Special Topics in Applied Information Technology</td>
<td></td>
</tr>
<tr>
<td>AIT 799</td>
<td>Master's Thesis</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 18

Cyber-Human Systems (CBHS)
Select four courses from the concentration foundation and two courses from the electives from the following list of courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foundation</td>
<td></td>
</tr>
<tr>
<td>AIT 582</td>
<td>Metadata Analytics for Big Data</td>
<td>12</td>
</tr>
<tr>
<td>AIT 602</td>
<td>Introduction to Research in Applied Information Technology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 18
Human Computer Interaction
Data Analytics in Social Media

Electives (6 credits)

- AIT 590 Topics in Applied Information Technology
- AIT 614 Big Data Essentials
- AIT 624 Knowledge Mining from Big-Data
- AIT 690 Advanced Topics in Applied Information Technology
- AIT 699 Research Project
- AIT 711 Rapid Development of Scalable Applications
- AIT 726 Natural Language Processing
- AIT 734 Advanced Web Analytics Using Semantics
- AIT 736 Applied Machine Learning
- AIT 790 Advanced Special Topics in Applied Information Technology
- AIT 799 Master’s Thesis

Total Credits: 18

**Data Analytics and Intelligence Methods (DAIN)**

Select four courses from the concentration foundation and two courses from the electives from the following list of courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 580</td>
<td>Analytics: Big Data to Information</td>
<td>3</td>
</tr>
<tr>
<td>AIT 582</td>
<td>Metadata Analytics for Big Data</td>
<td>3</td>
</tr>
<tr>
<td>AIT 614</td>
<td>Big Data Essentials</td>
<td>3</td>
</tr>
<tr>
<td>AIT 677</td>
<td>Intelligence Analysis Methods</td>
<td>3</td>
</tr>
<tr>
<td>AIT 724</td>
<td>Data Analytics in Social Media</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives (6 credits)

- AIT 590 Topics in Applied Information Technology
- AIT 624 Knowledge Mining from Big-Data
- AIT 690 Advanced Topics in Applied Information Technology
- AIT 699 Research Project
- AIT 711 Rapid Development of Scalable Applications
- AIT 716 Human Computer Interaction
- AIT 726 Natural Language Processing
- AIT 734 Advanced Web Analytics Using Semantics
- AIT 736 Applied Machine Learning
- AIT 790 Advanced Special Topics in Applied Information Technology
- AIT 799 Master’s Thesis
- CFRS 500 Introduction to Forensic Technology and Analysis
- CFRS 660 Network Forensics

Total Credits: 18

**IT Management (ITMG):**

Students select six courses from the following: 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 582</td>
<td>Metadata Analytics for Big Data</td>
<td>3</td>
</tr>
<tr>
<td>AIT 590</td>
<td>Topics in Applied Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>AIT 614</td>
<td>Big Data Essentials</td>
<td>3</td>
</tr>
<tr>
<td>AIT 622</td>
<td>Determining Needs for Complex Big Data Systems</td>
<td>3</td>
</tr>
<tr>
<td>AIT 660</td>
<td>Cyber Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>AIT 665</td>
<td>Managing Information Technology Programs in the Federal Sector</td>
<td>3</td>
</tr>
<tr>
<td>AIT 670</td>
<td>Cloud Computing Security</td>
<td>3</td>
</tr>
<tr>
<td>AIT 672</td>
<td>Identity and Access Management</td>
<td>3</td>
</tr>
<tr>
<td>AIT 677</td>
<td>Intelligence Analysis Methods</td>
<td>3</td>
</tr>
<tr>
<td>AIT 678</td>
<td>National Security Challenges</td>
<td>3</td>
</tr>
<tr>
<td>AIT 679</td>
<td>Law and Ethics of Big Data</td>
<td>3</td>
</tr>
<tr>
<td>AIT 685</td>
<td>Capstone Seminar</td>
<td>3</td>
</tr>
<tr>
<td>AIT 690</td>
<td>Advanced Topics in Applied Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>AIT 697</td>
<td>Leading Organizations Through Change</td>
<td>3</td>
</tr>
<tr>
<td>AIT 701</td>
<td>Cyber Security: Emerging Threats and Countermeasures</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 18

1 Students in this concentration may also take other IST graduate-level courses not listed below as part of their MS technical electives, subject to approval of the advisor.

**Accelerated Master’s**

**Individualized Study, BIS/Applied Information Technology, Accelerated MS Overview**

Highly-qualified students in the Individualized Study, BIS (p. 588) have the option of obtaining an accelerated Applied Information Technology, MS (p. 1118).

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions (p. 68). Mason undergraduate students in the BIS Program can apply in the semester in which they will have completed 90 or more credits (including 15 Mason resident credits) applicable toward the BIS. Students must have an overall GPA of at least 3.30 to apply to the program.

**Reserve Graduate Credit**

Students may take up to 6 additional graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department.
Permission to take a graduate course for reserve graduate credit is normally granted only to Mason seniors within 15 hours of graduation.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition Form (http://registrar.gmu.edu/forms).

**Accelerated Option Requirements**

Students in the accelerated master’s option must maintain a minimum 3.30 GPA in the undergraduate segment until they have satisfied all requirements for the BIS degree. On completion and conferral of the undergraduate degree they submit the Bachelor’s/Accelerated Master’s Transition Form (http://registrar.gmu.edu/forms) and are admitted to graduate status.

As graduate students, accelerated master’s students have an advanced standing. Students must complete all credits that satisfy requirements of the BIS program and those of the MSAIT program, with two courses overlapping from the courses necessary to earn the BIS with a concentration IND (individualized), applied information technology emphasis as listed below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 524</td>
<td>Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>AIT 542</td>
<td>Fundamentals of Computing Platforms</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** 6

**Information Technology, BS/Applied Information Technology, Accelerated MS**

**Overview**

Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Applied Information Technology, MS (p. 1118).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Information Technology, BS (p. 1122) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Criteria for admission are identical to criteria for admission to the Applied Information Technology, MS (p. 1118) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlap.

Students register for 6 credits of AIT 500-level core courses in place of the corresponding IT 300-level courses required for the undergraduate degree requirements.

Students must register for two of the following courses in place of the corresponding 300-level courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 512</td>
<td>Algorithms and Data Structures Essentials (satisfies the IT 306 requirement in the BS program)</td>
<td>3</td>
</tr>
</tbody>
</table>

Students may take additional graduate-level courses as part of their BS technical electives with advisor approval. These additional graduate-level courses will not count toward the MS degree. See AP.1.4.4 Graduate Course Enrollment by Undergraduates (p. 79).

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Information Sciences Graduate Certificate**

**Banner Code**: VS-CERG-ISCI

5400 Nguyen Engineering Building
Fairfax Campus

Phone: 703-993-3565
Email: msait@gmu.edu
Website: ist.gmu.edu

The Information Sciences Graduate Certificate with a concentration in Intelligence Technologies offers courses in four key elements of intelligence analysis. Designed for professionals who work for, or in support of, intelligence community agencies, it provides additional academic preparation for post-bachelor’s students who may not wish to complete a full master’s program, as well as for master’s graduates who wish to take the area-specific courses a concentration provides.

**Admissions & Policies**

**Admissions**

A bachelor's degree is required for admission to a certificate program.

**Requirements**

**Total credits: 12**

This certificate may be pursued on a full-or part-time basis.

**Concentration in Intelligence Technologies (NTLT)**

Administered by the Department of Information Sciences and Technology (http://ist.gmu.edu/programs/graduate-programs).
The bachelor’s program in Information Technology is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

Admissions & Policies

Admissions
Students who meet Mason's general eligibility requirements may apply for admission to the IT major. Admission is based on the appropriateness of the student’s academic objectives and the likelihood of the student benefiting from the program. Preference in admission is given to students who have four years of high school mathematics, including precalculus.

Policies
For policies governing all undergraduate degrees, see AP5 Undergraduate Policies (p. 87).

Change of Major
Mason students considering a change of major to Information Technology must have a minimum GPA of 3.00 in completed courses from the following list: IT 102 Discrete Structures or MATH 125 Discrete Mathematics I (Mason Core) (p. 142), IT 104 Introduction to Computing (Mason Core) (p. 142) or IT 191 Review of Computing Fundamentals, IT 105 IT Architecture Fundamentals, IT 106 Introduction to IT Problem Solving Using Computer Programming or IT 196 Review of IT Problem Solving Using Computer Programming or IT 109 Introduction to Computer Programming or CS 112 Introduction to Computer Programming (Mason Core) (p. 142), IT 206 Object Oriented Techniques for IT Problem Solving or IT 209 Introduction to Object Oriented Programming or CS 211 Object-Oriented Programming, IT 216 Systems Analysis and Design, IT 207 Applied IT Programming, IT 213 Multimedia and Web Design or IT 193 Review of Multimedia and Web Design, IT 214 Database Fundamentals or IT 194 Review of Database Fundamentals, and IT 223 Information Security Fundamentals, and a grade of C or better in IT 106 Introduction to IT Problem Solving Using Computer Programming or IT 109 Introduction to Computer Programming or IT 196 Review of IT Problem Solving Using Computer Programming or both CS 112 Introduction to Computer Programming (Mason Core) (p. 142) and CS 211 Object-Oriented Programming.

Note: IT courses at the 300 and 400 level are restricted to students who have declared an Information Technology major; minor, or undergraduate certificate, and to students in the BAS or BIS program. IT 293 Applied IT: Junior Transition and IT 343 IT Project Management are restricted to students who have declared the Information Technology, BS major.

Advanced Study
Mason offers students the ability to complete both BS and MS degrees in a shorter time through an Accelerated Masters (MS) program. Choosing to pursue an accelerated MS may affect a student's choice of courses in the BS program. Students should consult with an advisor for assistance.

Grades
Students must have a C or better in any course that satisfies a prerequisite for an IT course. To graduate with the BS in Information Technology, students must have a GPA of 2.75 or better across the IT foundation, core, capstone, and concentration courses. Additionally, students must have a C or better in their foundation, core, capstone, and concentration courses.

Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT 524</td>
<td>Database Management Systems</td>
<td></td>
</tr>
<tr>
<td>AIT 582</td>
<td>Metadata Analytics for Big Data</td>
<td></td>
</tr>
<tr>
<td>AIT 614</td>
<td>Big Data Essentials</td>
<td></td>
</tr>
<tr>
<td>AIT 624</td>
<td>Knowledge Mining from Big-Data</td>
<td></td>
</tr>
<tr>
<td>AIT 677</td>
<td>Intelligence Analysis Methods</td>
<td></td>
</tr>
<tr>
<td>AIT 678</td>
<td>National Security Challenges</td>
<td></td>
</tr>
<tr>
<td>CFRS 500</td>
<td>Introduction to Forensic Technology and Analysis</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits: 12

Information Technology, BS

Banner Code: VS-BS-INFT

Academic Advising
5400 Nguyen Engineering Building
Fairfax Campus
101 Bull Run Hall
Science and Technology Campus

Phone: 703-993-3565
Email: bsit@gmu.edu
Website: http://ist.gmu.edu/programs/undergraduate-programs/

The Information Technology, BS prepares students to apply IT to support business processes. The degree produces graduates with strong problem-solving, writing, and communication skills who successfully compete for technical employment and are prepared for advanced study. The objectives of the Information Technology, BS program relate to the abilities of the graduates several years after graduation. Graduates of the program are expected within three to five years of graduation to have:

- Been employed in a position in which they have successfully used their information technology skills (including: problem solving, analytic, presentation and personal skills) as evidenced by achieving improved organizational objectives;
- Progressed through increasing levels of responsibility in the workplace;
- Demonstrated ethical, social and professional responsibility consistent with professional societies;
- Worked effectively in teams, whether as a participant or as a leader;
- Grown through self-study, continuing education and professional development relevant to their profession.

The program can be successfully completed in eight full-time semesters with an average of 15 credits each semester. It is also possible for students to complete the degree on a part-time basis. The 120-credit degree requirement consists of Mason Core (p. 142) requirements, IT foundation and core courses, and courses required for the chosen IT concentration. At least 30 credits toward the BS degree must be earned at Mason, and at least 45 credits must be at or above the 300 level. Upper division courses in the program are taught at the Science and Technology campus, where many Department of Information Sciences and Technology faculty offices are located.
concentration courses. Furthermore, students must have a B or better in gateway courses for the respective concentration.

Course Repeat Policy
In addition to the University’s Undergraduate Course Repeat Policy, the following courses listed have additional repeat restrictions:

- A student who has taken IT 106 twice may not take IT 109 for their third attempt, nor will they be permitted to start over with three attempts of IT 109 in lieu of taking IT 106.
- A student who has taken IT 109 twice may not take IT 106 for their third attempt, nor will they be permitted to start over with three attempts of IT 106 in lieu of taking IT 109.
- A student who has taken IT 206 twice may not take IT 209 for their third attempt, nor will they be permitted to start over with three attempts of IT 209 in lieu of taking IT 206.
- A student who has taken IT 209 twice may not take IT 206 for their third attempt, nor will they be permitted to start over with three attempts of IT 206 in lieu of taking IT 209.
- A student who has taken IT 102 Discrete Structures twice may not take MATH 125 Discrete Mathematics I (Mason Core) for their third attempt, nor will they be permitted to start over with three attempts of MATH 125 in lieu of taking IT 102.
- A student who has taken MATH 125 twice may not take IT 102 for their third attempt, nor will they be permitted to start over with three attempts of IT 102 in lieu of taking MATH 125.

Termination from the Major
No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP 5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

Requirements

Degree Requirements
Total credits: 120

Foundation Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 102</td>
<td>Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>IT 104</td>
<td>Introduction to Computing (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>IT 105</td>
<td>IT Architecture Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 106</td>
<td>Introduction to IT Problem Solving Using Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td>or IT 109</td>
<td>Introduction to Computer Programming</td>
<td></td>
</tr>
<tr>
<td>IT 206</td>
<td>Object Oriented Techniques for IT Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>or IT 209</td>
<td>Introduction to Object Oriented Programming</td>
<td></td>
</tr>
<tr>
<td>IT 216</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 21

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 207</td>
<td>Applied IT Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT 213</td>
<td>Multimedia and Web Design</td>
<td>3</td>
</tr>
<tr>
<td>IT 214</td>
<td>Database Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 223</td>
<td>Information Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 300</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>IT 304</td>
<td>IT in the Global Economy (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>IT 341</td>
<td>Data Communications and Network Principles</td>
<td>3</td>
</tr>
<tr>
<td>IT 342</td>
<td>Operating Systems Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 343</td>
<td>IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 300</td>
<td>Accounting in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>SYST 469</td>
<td>Human Computer Interaction</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 33

Two-Semester Sequence of Approved Capstone Design Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 492</td>
<td>Senior Design Project I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
<tr>
<td>IT 493</td>
<td>Senior Design Project II (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 7
Information Technology Concentrations

Students choose one of five concentrations from the list below. To be eligible to choose a concentration, a student must have a B or better grade in the concentration’s gateway course.

### Concentration Gateway Courses

**Database Technology and Programming (DTP)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 206</td>
<td>Object Oriented Techniques for IT Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>or IT 209</td>
<td>Introduction to Object Oriented Programming</td>
<td></td>
</tr>
<tr>
<td>IT 214</td>
<td>Database Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>or IT 194</td>
<td>Review of Database Fundamentals</td>
<td></td>
</tr>
</tbody>
</table>

**Health Information Technology (HIT)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 214</td>
<td>Database Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>or IT 194</td>
<td>Review of Database Fundamentals</td>
<td></td>
</tr>
</tbody>
</table>

**Cyber Security (CYBR)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 223</td>
<td>Information Security Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>

**Networking and Telecommunications (NTEL)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 341</td>
<td>Data Communications and Network Principles</td>
<td>3</td>
</tr>
</tbody>
</table>

**Web Development (WDEV)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 213</td>
<td>Multimedia and Web Design</td>
<td>3</td>
</tr>
<tr>
<td>or IT 193</td>
<td>Review of Multimedia and Web Design</td>
<td></td>
</tr>
</tbody>
</table>

To fulfill the requirements for a concentration, students need 15 credits made up of four courses from their chosen concentration and a fifth course chosen from any of the five concentrations. Students may choose to have two concentrations. To be eligible, the student must have a B or better in the gateway course for each concentration. If two concentrations are declared, the student must take four courses in each concentration, for a total of eight different concentration courses.

### Concentrations

- Database Technology and Programming (DTP) (p. 1124)
- Health Information Technology (HIT) (p. 1124)
- Cyber Security (CYBR) (p. 1124)
- Network and Telecommunications (NTEL) (p. 1124)
- Web Development (WDEV) (p. 1125)

### Database Technology and Programming (DTP)

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 306</td>
<td>Data Structures and Algorithms in Java</td>
<td>3</td>
</tr>
<tr>
<td>or IT 309</td>
<td>Data Structures and Algorithms in Python</td>
<td></td>
</tr>
<tr>
<td>IT 314</td>
<td>Database Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 2 from the following courses 6

- IT 315 Mobile Development
- IT 322 Health Data Challenges
- IT 369 Data and Application Security
- IT 390 Rapid Development of Scalable Cloud Applications
- IT 409 Python Web Programming
- IT 410 Web Programming
- IT 414 Database Administration

### Health Information Technology (HIT)

Select 4 courses from the following 12

- HAP 360 Introduction to Health Information Systems
- IT 322 Health Data Challenges
- IT 324 Health Information Technology Fundamentals
- IT 390 Rapid Development of Scalable Cloud Applications
- STAT 362 Introduction to Computer Statistical Packages

Select one additional course from any other concentration 3

Total Credits 15

### Cyber Security (CYBR)

Select 4 courses from the following 12

- IT 352 Security Administration of Linux Systems
- IT 353 Information Defense Technologies
- IT 357 Computer Crime, Forensics, and Auditing
- IT 366 Network Security
- IT 369 Data and Application Security
- IT 429 Security Accreditation of Information Systems
- IT 462 Applied Cyber Threat Analysis
- IT 466 Foundations of Cryptography and Security
- IT 467 Network Defense

Select one additional course from any other concentration 3

Total Credits 15

### Network and Telecommunications (NTEL)

Select 4 courses from the following 12

- ECE 301 Digital Electronics
- IT 366 Network Security
- IT 441 Network Servers and Infrastructures
- IT 445 Advanced Networking Principles
- IT 455 Wireless Communications and Networking
- IT 465 Peer-to-Peer Systems and Overlay Networks
- IT 484 Voice Communications Technologies
- IT 488 Fundamentals of Satellite Communications

Select one additional course from any other concentration 3

Total Credits 15
Web Development (WDEV)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 315</td>
<td>Mobile Development</td>
<td></td>
</tr>
<tr>
<td>IT 331</td>
<td>Web I: Web Development</td>
<td></td>
</tr>
<tr>
<td>IT 332</td>
<td>Web Server Administration</td>
<td></td>
</tr>
<tr>
<td>IT 335</td>
<td>Web Development using Content Management Systems</td>
<td></td>
</tr>
<tr>
<td>IT 390</td>
<td>Rapid Development of Scalable Cloud Applications</td>
<td></td>
</tr>
<tr>
<td>IT 415</td>
<td>Information Visualization</td>
<td></td>
</tr>
<tr>
<td>IT 431</td>
<td>Web II: Advanced Web Development</td>
<td></td>
</tr>
<tr>
<td>IT 479</td>
<td>Digital Media and Web Design Capstone</td>
<td></td>
</tr>
</tbody>
</table>

Select 4 courses from the following 12 credits

Select one additional course from any other concentration 3 credits

Total Credits 15

Other Major Requirements

Select 7 credits of natural science, including at least one 4-credit course with lab 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>IT 293</td>
<td>Applied IT: Junior Transition</td>
<td>1</td>
</tr>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
<td>3-4</td>
</tr>
<tr>
<td>or MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 14-15

Additional Mason Core

Students must complete all Mason Core (p. 142) requirements not fulfilled by major requirements. All students must complete at least 24 credits of social science and humanities coursework, which is normally satisfied by the 24 credits of Mason Core social science and humanities courses listed here, including COMM 100 Public Speaking (Mason Core) (p. 142) or COMM 101 Fundamentals of Communication (Mason Core) (p. 142).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (p. 142)</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 150)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Global Understanding (p. 146)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 21

Writing-Intensive Requirement

The university writing-intensive requirement is satisfied by IT 343 IT Project Management.

Electives

Select additional coursework to bring the total number of credits to 120

Total Credits 8-9

Accelerated Master’s

Information Technology, BS/Information Security and Assurance, Accelerated MS

Overview

Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Information Security and Assurance, MS (p. 1072).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Students in the Information Technology, BS (p. 1122) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Criteria for admission are identical to criteria for admission to the Information Security and Assurance, MS (p. 1072) program.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with the two following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFS 612</td>
<td>Principles and Practices of Communication Networks (satisfies IT 441 requirement in the BS program)</td>
<td>3</td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice (satisfies IT 462 requirement in the BS program)</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:

Students must complete MATH 125 Discrete Mathematics I (Mason Core) (p. 142) as their discrete math requirement and IT 306 Data Structures and Algorithms in Java as part of their concentration requirements in the BS program.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.
Information Technology, BS/Information Systems, Accelerated MS

Overview
Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Information Systems, MS (p. 1075).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Information Technology, BS (p. 1122) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Criteria for admission are identical to the criteria for admission to the Information Systems, MS (p. 1075) program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with the following two courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems (satisfies IT 414 requirement in the BS program)</td>
<td>3</td>
</tr>
<tr>
<td>INFS 622</td>
<td>Information Systems Analysis and Design (satisfies as one DTP concentration course in the BS program)</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
Students must complete MATH 125 Discrete Mathematics I (Mason Core) (p. 142) as their discrete math requirement and IT 306 Data Structures and Algorithms in Java as part of their concentration requirements in the BS program.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Information Technology, BS/Software Engineering, Accelerated MS

Overview
Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Software Engineering, MS (p. 1081).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Information Technology, BS (p. 1122) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Criteria for admission are identical to criteria for admission to the Software Engineering, MS (p. 1081) Program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with the following two courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems (satisfies IT 414 requirement in the BS program)</td>
<td>3</td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction (satisfies as one DTP concentration course in the BS program)</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
Students must complete MATH 125 Discrete Mathematics I (Mason Core) (p. 142) as their discrete math requirement and IT 306 Data Structures and Algorithms in Java as part of their concentration requirements in the BS program.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Information Technology, BS/Digital Forensics and Cyber Analysis (title change pending SCHEV approval), Accelerated MS

Overview
Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Digital Forensics and Cyber Analysis, MS (p. 1095).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Students in the Information Technology, BS (p. 1122) program may apply for this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.25. Criteria for admission are identical to criteria for admission to the Digital Forensics and Cyber Analysis, MS (p. 1095) program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with two of the following three courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFRS 500</td>
<td>Introduction to Forensic Technology and Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>
### Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

### Information Technology, BS/Applied Information Technology, Accelerated MS

**Overview**

Highly-qualified students in the Information Technology, BS (p. 1122) have the option of obtaining an accelerated Applied Information Technology, MS (p. 1118).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Information Technology, BS (p. 1122) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Criteria for admission are identical to criteria for admission to the Telecommunications, MS (p. 1111) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for the BS and MS programs.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select six credits from the following (the TCOM courses listed for 1.5 credits must be taken in pairs):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications (To satisfy the IT 300 BS, AIT requirement)</td>
<td></td>
</tr>
<tr>
<td>TCOM 530</td>
<td>Data Communications Fundamentals (To satisfy the IT 341 BS, AIT requirement)</td>
<td></td>
</tr>
<tr>
<td>TCOM 535</td>
<td>The TCP/IP Suite of Internet Protocols (To satisfy the IT 441 BS, AIT requirement)</td>
<td></td>
</tr>
<tr>
<td>TCOM 631</td>
<td>Voice Over IP (To satisfy the IT 484 BS, AIT requirement)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

**Note:**

Students in the accelerated option who have passed IT 341 Data Communications and Network Principles with a grade of B or higher will not be required to take TCOM 530 Data Communications Fundamentals, which is listed in the MS TCOM core. Alternative sections of TCOM courses to satisfy requirements in the AIT undergraduate program may be made with the approval of the undergraduate academic advisor.

**Degree Conferral**

Students who are enrolled in the accelerated option must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.
Admissions Office. At the completion of MS requirements, a master's degree is conferred.

**Information Technology Minor**

**Banner Code:** INFT

**Academic Advising**

5400 Nguyen Engineering Building
Fairfax Campus
101 Bull Run Hall
Science and Technology Campus

Phone: 703-993-3565
Email: bsit@gmu.edu
Website: ist.gmu.edu/programs/undergraduate-programs/

The minor is designed primarily for students who desire to augment the knowledge gained through their major-related courses with a foundation of information technology (IT) topics and their application within organizations to achieve organizational objectives. Completing this minor provides students with the necessary skills to improve their attractiveness to employers in our technology-driven society. The minor requires a minimum of 18 credits, including 12 credits of core courses. Beyond these requirements, students must select two additional technical focus courses (6 credits) of which one course must be at the upper 300- or 400-level. Minimum 2.5 GPA is needed in completed 100- and 200-level IT core and foundation courses, and a minimum C in IT 106 or IT 109 is required in order to declare the IT minor. Minimum "C" grade in all IT courses is required to earn the IT minor. Students pursuing the IT minor should consult with an advisor to select their additional courses.

### Admissions & Policies

#### Admissions

**Declaration of Minor**

In order to declare the IT Minor, students must earn a minimum 2.5 GPA in completed 100- and 200-level IT core courses required for the minor (from IT 102 or MATH 125, IT 104, IT 105, IT 106 or IT 109, and any technical focus courses being applied to the IT minor), and a minimum C in IT 106 Introduction to IT Problem Solving Using Computer Programming or IT 109 Introduction to Computer Programming. Grades in approved course substitutions taken at Mason will be included.

Note: IT courses at the 300 and 400 level are restricted to students who have declared an Information Technology major, minor, or undergraduate certificate, and to students in the BAS or BIS program. IT 293 Applied IT: Junior Transition and IT 343 IT Project Management are restricted to students who have declared an Information Technology major. Students who have declared an Information Technology Minor will not be permitted to take IT 293 or IT 343.

#### Policies

**Grades**

Students must have a C or better in any course that satisfies a prerequisite for an IT course. To graduate with the Information Technology Minor, students must have a GPA of 2.00 or better across all courses applied to the Information Technology Minor. Additionally, if a technical focus course requires a minimum B in a specified course, students will be held to meeting this prerequisite.

For policies governing all minors, see the Undergraduate Policies (p. 87) section of this catalog.

### Requirements

#### Minor Requirements

Total credits: 18

<table>
<thead>
<tr>
<th><strong>Core Courses</strong></th>
<th><strong>Title</strong></th>
<th><strong>Credits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 102 or MATH 125</td>
<td>Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>IT 104</td>
<td>Introduction to Computing (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>IT 105</td>
<td>IT Architecture Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 106 or IT 109</td>
<td>Introduction to IT Problem Solving Using Computer Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 12

<table>
<thead>
<tr>
<th><strong>Technical Focus Courses</strong></th>
<th><strong>Title</strong></th>
<th><strong>Credits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits from Technical Focus Courses (at least 3 upper division credits)</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credits: 6

Students must satisfy all prerequisites and other requirements in order to take any of the courses listed below. Courses chosen for the technical focus must be chosen with a coordinator in the Information Sciences and Technology department. Not all courses are offered each semester.

<table>
<thead>
<tr>
<th><strong>Code</strong></th>
<th><strong>Title</strong></th>
<th><strong>Credits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 206 or IT 209</td>
<td>Object Oriented Techniques for IT Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>IT 207</td>
<td>Applied IT Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT 213</td>
<td>Multimedia and Web Design</td>
<td>3</td>
</tr>
<tr>
<td>IT 214</td>
<td>Database Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 223</td>
<td>Information Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 300</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>IT 306</td>
<td>Data Structures and Algorithms in Java</td>
<td>3</td>
</tr>
<tr>
<td>IT 314</td>
<td>Database Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT 315</td>
<td>Mobile Development</td>
<td>3</td>
</tr>
<tr>
<td>IT 322</td>
<td>Health Data Challenges</td>
<td>3</td>
</tr>
<tr>
<td>IT 324</td>
<td>Health Information Technology Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 328</td>
<td>Health Information Emerging Technologies</td>
<td>3</td>
</tr>
<tr>
<td>IT 331</td>
<td>Web I: Web Development</td>
<td>3</td>
</tr>
<tr>
<td>IT 332</td>
<td>Web Server Administration</td>
<td>3</td>
</tr>
<tr>
<td>IT 335</td>
<td>Web Development using Content Management Systems</td>
<td>3</td>
</tr>
</tbody>
</table>
Students pursuing only the undergraduate certificate in information technology will not maintain full-time status which requires a minimum of 12 credits per semester.

### Requirements

#### Certificate Requirements

Total credits: 24-28

This certificate may be pursued on a part-time basis only.

#### Requirements

Students must complete all requirements within a concentration.

#### Concentration in General (GEN)

The Information Technology certificate is designed primarily for those students who have earned a bachelor’s degree or current undergraduate students who desire deeper knowledge than what can be accomplished through the IT minor. It allows students to augment the knowledge gained through their major-related courses with a foundation of information technology (IT) topics and their application within organizations to achieve organizational objectives. Completing this undergraduate certificate provides students with the necessary skills to improve their attractiveness to employers in our technology-driven society. The General Concentration requires a minimum of 24 credits, including 15 credits of required courses. Beyond these requirements, students must select three additional IT courses (9 credits, at least 3 upper division credits). Students pursuing the IT undergraduate certificate should consult with an advisor to select their additional courses.

#### Information Technology Undergraduate Certificate

**Banner Code: VS-CERB-INFT**

**Academic Advising**

5400 Nguyen Engineering Building  
Fairfax Campus  
101 Bull Run Hall  
Science and Technology Campus

Phone: 703-993-3565  
Email: bsit@gmu.edu  
Website: [http://ist.gmu.edu/programs/undergraduate-programs/](http://ist.gmu.edu/programs/undergraduate-programs/)

This certificate is designed primarily for those students who have earned a bachelor’s degree or current undergraduate students who desire deeper knowledge than what can be accomplished through the IT minor. It allows students to augment the knowledge gained through their major-related courses with a foundation of information technology (IT) topics and their application within organizations to achieve organizational objectives. Completing this undergraduate certificate provides students with the necessary skills to improve their attractiveness to employers in our technology-driven society. The certificate requires a minimum of 24 credits, including 15 credits of core courses. Beyond these requirements, students must select three additional IT courses (9 credits, at least 3 upper division credits). Students pursuing the IT undergraduate certificate should consult with an advisor to select their additional courses.

---

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 102</td>
<td>Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>IT 104</td>
<td>Introduction to Computing (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>IT 105</td>
<td>IT Architecture Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 106</td>
<td>Introduction to IT Problem Solving Using Computer Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following: 3

- IT 206 Object Oriented Techniques for IT Problem Solving
- IT 207 Applied IT Programming
- IT 213 Multimedia and Web Design
- IT 214 Database Fundamentals
- IT 223 Information Security Fundamentals

**Total Credits** 15

#### Technical Focus Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Select 9 credits from the approved list of technical focus courses; at least 3 of those credits must be at the upper division level.

**Total Credits** 9

Students must satisfy all prerequisites and other requirements in order to take any of the courses listed below. Courses chosen for the technical
focus must be chosen with a coordinator in the Information Sciences and Technology department. Not all courses are offered each semester.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IT 206</td>
<td>Object Oriented Techniques for IT Problem Solving</td>
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<tr>
<td>IT 207</td>
<td>Applied IT Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT 213</td>
<td>Multimedia and Web Design</td>
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<tr>
<td>IT 214</td>
<td>Database Fundamentals</td>
<td>3</td>
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<tr>
<td>IT 223</td>
<td>Information Security Fundamentals</td>
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<tr>
<td>IT 300</td>
<td>Modern Telecommunications</td>
<td>3</td>
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<tr>
<td>IT 304</td>
<td>IT in the Global Economy (Mason Core) (p. 142)</td>
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</tr>
<tr>
<td>IT 306</td>
<td>Data Structures and Algorithms in Java</td>
<td>3</td>
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<tr>
<td>IT 308</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT 314</td>
<td>Database Programming</td>
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<tr>
<td>IT 315</td>
<td>Mobile Development</td>
<td>3</td>
</tr>
<tr>
<td>IT 322</td>
<td>Health Data Challenges</td>
<td>3</td>
</tr>
<tr>
<td>IT 324</td>
<td>Health Information Technology Fundamentals</td>
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<tr>
<td>IT 328</td>
<td>Health Information Emerging Technologies</td>
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<tr>
<td>IT 331</td>
<td>Web I: Web Development</td>
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<tr>
<td>IT 332</td>
<td>Web Server Administration</td>
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<tr>
<td>IT 335</td>
<td>Web Development using Content Management Systems</td>
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<tr>
<td>IT 341</td>
<td>Data Communications and Network Principles</td>
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<tr>
<td>IT 344</td>
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<td>3</td>
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<tr>
<td>IT 353</td>
<td>Information Defense Technologies</td>
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<tr>
<td>IT 357</td>
<td>Computer Crime, Forensics, and Auditing</td>
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</tr>
<tr>
<td>IT 366</td>
<td>Network Security</td>
<td>3</td>
</tr>
<tr>
<td>IT 390</td>
<td>Rapid Development of Scalable Cloud Applications</td>
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<tr>
<td>IT 410</td>
<td>Web Programming</td>
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<tr>
<td>IT 413</td>
<td>Digital Media Editing</td>
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<td>IT 414</td>
<td>Database Administration</td>
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<td>IT 415</td>
<td>Information Visualization</td>
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<td>IT 431</td>
<td>Web II: Advanced Web Development</td>
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<tr>
<td>IT 441</td>
<td>Network Servers and Infrastructures</td>
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<td>IT 445</td>
<td>Advanced Networking Principles</td>
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<td>IT 455</td>
<td>Wireless Communications and Networking</td>
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<td>IT 462</td>
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<td>IT 465</td>
<td>Peer-to-Peer Systems and Overlay Networks</td>
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<td>IT 466</td>
<td>Foundations of Cryptography and Security</td>
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<td>IT 467</td>
<td>Network Defense</td>
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<td>IT 484</td>
<td>Voice Communications Technologies</td>
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<td>IT 488</td>
<td>Fundamentals of Satellite Communications</td>
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<tr>
<td>IT 490</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT 495</td>
<td>Turning Ideas into Successful Companies</td>
<td>3</td>
</tr>
<tr>
<td>IT 496</td>
<td>Decision Making in IT Ventures</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 300</td>
<td>Accounting in a Global Economy</td>
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</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
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<tr>
<td>IT 343</td>
<td>IT Project Management</td>
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</table>

Concentration in Entrepreneurship (ENTR)

The Information Technology certificate with Entrepreneurship concentration prepares IT and engineering students for successful careers as entrepreneurs in the area of information technology. Specifically, they will acquire a unique body of knowledge related to innovation, both on the information technology/engineering/inventive side and on the entrepreneurial side, which will give them a competitive advantage in the difficult market where only very few new companies are able to survive and grow.

This certificate and concentration are designed for students who are working on or possess an undergraduate degree in information technology, computer science, engineering or a related domain and want to focus on IT innovation and entrepreneurship. The Concentration in Entrepreneurship requires a minimum of 28 credits, including 9 credits of required courses, 12 elective credits, and 7 capstone credits.

Students enrolled in this certificate and concentration must be part of an entrepreneurship team (E-Team) with the goal of creating an IT venture. The E-Teams will be mentored by faculty associated with the certificate. Students who will create, or be a core team member of, a start-up company that has cumulated revenues and funding of $10,000 during their enrollment in the certificate will graduate with a Certificate of Excellence in IT Entrepreneurship.

Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MBUS 300</td>
<td>Accounting in a Global Economy</td>
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<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
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Electives

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<td>IT 315</td>
<td>Mobile Development</td>
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<tr>
<td>IT 390</td>
<td>Rapid Development of Scalable Cloud Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 436</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT 490</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT 495</td>
<td>Turning Ideas into Successful Companies</td>
<td>3</td>
</tr>
<tr>
<td>IT 496</td>
<td>Decision Making in IT Ventures</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 304</td>
<td>Entrepreneurship: Starting and Managing a New Enterprise</td>
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Capstone Sequence Courses

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<tr>
<td>IT 492</td>
<td>Senior Design Project I (Mason Core) (p. 142)</td>
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<tr>
<td>IT 493</td>
<td>Senior Design Project II (Mason Core) (p. 142)</td>
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<td>Total Credits</td>
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<td>7</td>
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</table>

1 Section on IT Entrepreneurship.
Mechanical engineering is the broadest of the engineering disciplines, and traces its origins to antiquity. The discipline of mechanical engineering involves anything that moves or uses energy. There are two major stems in mechanical engineering: mechanical systems and thermal fluid systems. Mechanical engineers design, build, and analyze complex devices, systems, and processes that involve the conversion of energy from one form to another, the production of work, and the transport of energy and mass from one location to another.

Today, the scope of the mechanical engineering discipline is ever-expanding. Mechanical engineers work in industries that include, but are not limited to, the aerospace, bio-pharmaceutical, civil, computer and cyber, biomedical, industrial, materials and manufacturing industries. They provide innovative solutions for contemporary problems and address problems yet identified. For example, 3-D printed components are readily being used in manufactured components, as part of medical implants and devices and even in structural applications. The mechanical performance of the components will likely vary dramatically from the ideal laboratory environment in which they were produced. Mechanical engineers are needed to characterize these aggressive environments in which they may be used, design test matrices to study their performance, and determine environmentally-based mechanical properties needed for design.

The Mechanical Engineering, BS is designed to support the goal of educating leaders for the future – men and women capable of meeting the needs of society. The curriculum is designed to provide its graduates with the technical skills and competencies to analyze and design both mechanical and thermal systems, and to give them an in-depth experience in one of these two areas. With a solid foundation in these discipline-specific areas, graduates of the program will be well-prepared to enter any of the industries identified above. All students will take core courses in both content areas through their junior year. During their senior year, they will have the opportunity to focus their program of study with a design elective and three technical electives. These electives can be arranged to focus on areas such as advanced manufacturing, aerospace, bioengineering, robotics, or sustainable energy.

Adjunct Instructor
Calhoun, Danehy, Eshete, Fortner, Kathir, Wohnsigr

Programs
• Mechanical Engineering Minor
• Mechanical Engineering, BS

Mechanical Engineering, BS
Banner Code: VS-BS-ME

Academic Advising
3300 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-5383
Email: mechengr@gmu.edu
Website: mechanical.gmu.edu

Today, the role of mechanical engineer is ever expanding in order to find innovative solutions for contemporary problems, and to address problems yet to be identified. To meet the growing demands of worldwide energy needs spurred by population growth and dwindling supplies of fossil fuels, for instance, mechanical engineers seek innovations in nuclear energy, bio-fuels, wind, and tidal energies to build an energy portfolio that exploits these seemingly limitless resources. From product design, which spans from biomedical devices to turbo-machinery, to manufacturing, which develops machines and systems needed to process raw materials into these products, an awareness of the benefits of advanced materials for sensing and monitoring the health of these systems and an awareness of the stealth threats to manufacturing brought on by an ever present cyber threat are in the minds of the mechanical engineers. Now more mechanical engineers oversee the operations and management of large systems along with the fiscal and human resources needed to run them.

James Michener once said, “Scientists dream about doing great things. Engineers do them.” Mechanical engineers use science to advance technologies and to develop products for the benefit of society, in a discipline which dates back to the earliest of times in civilization. The major in mechanical engineering has three program education objectives, namely:

• Graduates have demonstrated success as a mechanical engineer or their chosen career field;
• Graduates have advanced their educational pursuits through graduate education, professional registration, or similar means;
• Graduates have advanced their careers by engaging in professional society participation and community service outreach.

The bachelor’s program in Mechanical Engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.
Admissions & Policies

Policies

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (p. 87).

Change of Major

See Change of Major (p. 1013) for more information.

Grade Requirements and Advising

Degree requirements include 121 credits distributed in three main areas: mechanical engineering, mathematics and basic science, and humanities and social sciences. Students must complete all math, science and Volgenau School of Engineering courses presented as part of the required 121 credits for the degree with a grade of C or better.

Students are required to see their faculty advisor at least once each year to plan their curriculum.

Termination from the Major

No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP.5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

Requirements

Degree Requirements

Total credits: 121

Engineering

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<th>Credits</th>
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<tr>
<td>ECE 330</td>
<td>Circuit Theory</td>
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<tr>
<td>ME 151</td>
<td>Practicum in Engineering</td>
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<tr>
<td>ME 211</td>
<td>Statics</td>
<td>3</td>
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<tr>
<td>ME 212</td>
<td>Solid Mechanics</td>
<td>3</td>
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<tr>
<td>ME 221</td>
<td>Thermodynamics</td>
<td>3</td>
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<tr>
<td>ME 231</td>
<td>Dynamics</td>
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<tr>
<td>ME 311</td>
<td>Mechanical Experimentation I</td>
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<tr>
<td>ME 313</td>
<td>Material Science</td>
<td>3</td>
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<td>ME 321</td>
<td>Mechanical Experimentation II</td>
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<tr>
<td>ME 322</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 323</td>
<td>Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 331</td>
<td>Mechatronics</td>
<td>3</td>
</tr>
<tr>
<td>ME 341</td>
<td>Design of Mechanical Elements</td>
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<tr>
<td>or ME 342</td>
<td>Design of Thermal Systems</td>
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<tr>
<td>ME 352</td>
<td>Entrepreneurship in Engineering</td>
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<td>ME 432</td>
<td>Control Engineering</td>
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<tr>
<td>ME 443</td>
<td>Mechanical Design I</td>
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<td>ME 444</td>
<td>Mechanical Design II (Mason Core) (p. 142)</td>
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<td>ME 453</td>
<td>Developing the Societal Engineer</td>
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<td>Systems Dynamics</td>
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<td>ME 454</td>
<td>Project Mgmt for Engineers</td>
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<tr>
<td>ME 471</td>
<td>Introduction to Astronautics</td>
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<td>ME 498</td>
<td>Independent Study in Mechanical Engineering 1</td>
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<td>ME 499</td>
<td>Special Topics in Mechanical Engineering 1</td>
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Total Credits 61

1 May be repeated for credit.

Mathematics and Science

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<tr>
<td>CHEM 211 &amp; CHEM 213</td>
<td>General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
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<td>CHEM 271 &amp; CHEM 272</td>
<td>General Chemistry for Engineers Lecture (Mason Core) (p. 142) and General Chemistry for Engineers Lab (Mason Core) (p. 142)</td>
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<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
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MATH 114 Analytic Geometry and Calculus II 4
MATH 213 Analytic Geometry and Calculus III 3
MATH 214 Elementary Differential Equations 3
ME 351 Analytical Methods in Engineering 3
PHYS 160 University Physics I (Mason Core) (p. 142) 3
PHYS 161 University Physics I Laboratory (Mason Core) (p. 142) 1
PHYS 260 University Physics II (Mason Core) (p. 142) 3
PHYS 261 University Physics II Laboratory (Mason Core) (p. 142) 1
Select 3 credits from the list of pre-approved mathematics/science electives 3

Total Credits 32

Mathematics and Science Electives

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<td>BIOL 309</td>
<td>Introduction to Oceanography</td>
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<td>CHEM 212 &amp; CHEM 214</td>
<td>General Chemistry II (Mason Core) (p. 142) and General Chemistry Laboratory II (Mason Core) (p. 142)</td>
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<td>CHEM 300</td>
<td>Chemistry of Semiconductor Processing</td>
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<td>CLIM 411</td>
<td>Atmospheric Dynamics</td>
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<td>CLIM 412</td>
<td>Physical Oceanography</td>
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<td>CLIM 429</td>
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<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
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<tr>
<td>GEOL 412</td>
<td>Physical Oceanography</td>
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<td>PHYS 262 &amp; PHYS 263</td>
<td>University Physics III (Mason Core) (p. 142) and University Physics III Laboratory (Mason Core) (p. 142)</td>
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<td>PHYS 331</td>
<td>Fundamentals of Renewable Energy</td>
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<td>MATH 203</td>
<td>Linear Algebra</td>
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<td>MATH 290</td>
<td>Introduction to Advanced Mathematics</td>
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<td>MATH 301</td>
<td>Number Theory</td>
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<td>Foundations of Geometry</td>
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<td>MATH 312</td>
<td>Geometry</td>
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<td>MATH 313</td>
<td>Introduction to Applied Analysis</td>
<td>3</td>
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<td>MATH 314</td>
<td>Introduction to Applied Mathematics</td>
<td>3</td>
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<td>MATH 351</td>
<td>Probability</td>
<td>3</td>
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<td>MATH 411</td>
<td>Functions of a Complex Variable</td>
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<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
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<td>Probability for Engineers</td>
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Computer Science

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<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
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Total Credits 4

Communication and Economics

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<td>COMM 100</td>
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<td>Fundamentals of Communication (Mason Core) (p. 142)</td>
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<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
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Total Credits 6

Additional Mason Core

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<td>Arts (p. 144)</td>
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<td>Global Understanding (p. 146)</td>
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<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Written Communication (p. 142)</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 18

1 Both lower and upper level requirement.

Writing Intensive Requirement

Mason’s writing-intensive requirement is satisfied by ME 444 Mechanical Design II (Mason Core) (p. 142).

Capstone Experience Requirement

Mason’s synthesis requirement for mechanical engineering majors is satisfied by ME 444 Mechanical Design II (Mason Core) (p. 142).

Accelerated Master’s

Mechanical Engineering, BS/Applied and Engineering Physics, Accelerated MS

Overview

This program allows academically strong undergraduates with a demonstrable commitment to research to obtain the Mechanical Engineering, BS (https://catalog.gmu.edu/colleges-schools/engineering/mechanical/mechanical-engineering-bs) and Applied and Engineering Physics, MS (p. 759) degrees by successfully completing 145 credits. Upon completion, students are well-prepared for entering into the professional workforce, or a PhD program in physics or a related engineering discipline.

Admitted students take selected graduate courses during their senior year and are able to use up to 6 graduate credits in partial satisfaction of requirements for the undergraduate degree. Upon completion and conferral of the bachelor’s degree and with satisfactory performance (grade of ‘B’ or better) in each of the graduate courses, students are given advanced standing in the master’s program and complete an additional 24 credits to receive the master’s degree.
For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog.

Successful applicants majoring in Mechanical Engineering will have completed at least 90 credits toward their undergraduate degree with an overall GPA of at least 3.00, and the following courses with a GPA of 3.00 or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>ME 212</td>
<td>Solid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 231</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 313</td>
<td>Material Science</td>
<td>3</td>
</tr>
<tr>
<td>ME 322</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 323</td>
<td>Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 351</td>
<td>Analytical Methods in Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

One or more recommendation letters from one or more research supervisors are also required. Interested applicants majoring in Mechanical Engineering, BS (https://catalog.gmu.edu/colleges-schools/engineering/mechanical/mechanical-engineering-bs) should submit a letter to the undergraduate Mechanical Engineering coordinator and the Physics Graduate Coordinator, respectively, requesting admission along with the aforementioned recommendation letter(s). Contact the Mechanical Engineering undergraduate and the Physics graduate coordinator for further details.

**Accelerated Option Requirements**

At the beginning of the student’s final undergraduate semester, students must submit a bachelor’s/accelerated master’s transition form (http://registrar.gmu.edu/forms) to the College of Science’s Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their master’s program in the semester immediately following conferral of the bachelor’s degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework.

**Reserve Graduate Credit**

While still in undergraduate status, a student may take a maximum of six additional graduate credits as reserve graduate credits and apply those credits to a master’s program. Reserve graduate credits are not counted toward the 120 credits required in the undergraduate degree.

**Mechanical Engineering, BS/Computational Science, Accelerated MS**

This option enables enthusiastic, highly qualified, undergraduates to obtain the Mechanical Engineering, BS (https://catalog.gmu.edu/colleges-schools/engineering/mechanical/mechanical-engineering-bs) and the Computational Science, MS (p. 677) within the accelerated time frame of five years. The program requires 144 credits total, allowing students to undertake graduate coursework during their final year in the bachelor’s degree. Upon completion of this 144 credit BS/MS combined program, students are exceptionally well prepared for undertaking doctoral studies or entering the professional workforce.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Application Requirements**

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog. Application information for this Accelerated Master’s program can be found on the Department of Computational and Data Sciences (http://cos.gmu.edu/cds/academic-programs) website. Applicants must have an overall undergraduate GPA of at least 3.00 and have completed at least 90 credits. Additionally, applicants will have completed the following courses with a GPA of 3.00 or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>ME 212</td>
<td>Solid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 231</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 313</td>
<td>Material Science</td>
<td>3</td>
</tr>
<tr>
<td>ME 322</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 323</td>
<td>Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 351</td>
<td>Analytical Methods in Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 22

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals within the modeling and simulation or data science emphases of the Computational Science, MS (p. 677).

1. GRE-general scores are waived for graduates of BS degrees from any program in the College of Science or the Volgenau School of Engineering at George Mason University.

**Reserve Graduate Credit**

While in undergraduate status, a student may take a maximum of six graduate credits as reserve graduate credits and apply those credits to a master’s program. Reserve graduate credits are not counted toward the 120 credits required in the undergraduate degree.

**Mechanical Engineering, BS/Operations Research, Accelerated MS**

Overview

Highly-qualified students in the Mechanical Engineering, BS (p. 1177) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).
Admission Requirements
Mason undergraduate students majoring in Mechanical Engineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Students must additionally complete MATH 203 Linear Algebra prior to applying for the graduate program.

Accelerated Options Requirement
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may chose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Mechanical Engineering Minor
Banner Code: ME
Academic Advising
3300 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-5383
Email: mechengr@gmu.edu
Website: mechanical.gmu.edu

Mechanical Engineering is the broadest of the engineering disciplines, concerned with anything that moves or uses energy. There are two major stems in mechanical engineering: mechanical systems and thermal fluid systems. Mechanical engineers design, build, and analyze complex devices, systems and processes that involve the conversion of energy from one form to another, the production of work, and the transport of energy and mass from one location to another. This minor provides a foundation in mechanical engineering and is most appropriate for students with a strong mathematics and science background, such as a major in another engineering or science field. The minor is administered by the Volgenau School Dean’s office.

Admissions & Policies
Admissions
To be admitted to the minor, students must have completed MATH 114 Analytic Geometry and Calculus II and PHYS 160 University Physics I (Mason Core) (p. 142)/PHYS 161 University Physics I Laboratory (Mason Core) (p. 142) with a grade of C or better.

Policies
The minor in mechanical engineering consists of a minimum of 20-21 credit hours of coursework. All students must complete 14 credit hours of core courses. They must also complete two additional elective courses. All courses must be completed with a grade of C or better.

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (p. 90).

For policies governing all undergraduate programs, see AP5 Undergraduate Policies (p. 87).
Requirements

Minor Requirements

Total credits: 20-21

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 107</td>
<td>Introduction to Engineering (Mason Core) (p. 142)</td>
<td>2</td>
</tr>
<tr>
<td>or ME 151</td>
<td>Practicum in Engineering</td>
<td></td>
</tr>
<tr>
<td>ME 211</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>ME 212</td>
<td>Solid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 221</td>
<td>Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 231</td>
<td>Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 14

Elective Requirements

Select two additional courses from the following: 6-7

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 313</td>
<td>Material Science</td>
<td></td>
</tr>
<tr>
<td>ME 322</td>
<td>Fluid Mechanics</td>
<td></td>
</tr>
<tr>
<td>ME 323</td>
<td>Heat Transfer</td>
<td></td>
</tr>
<tr>
<td>ME 341</td>
<td>Design of Mechanical Elements</td>
<td></td>
</tr>
<tr>
<td>ME 342</td>
<td>Design of Thermal Systems</td>
<td></td>
</tr>
<tr>
<td>ME 352</td>
<td>Entrepreneurship in Engineering</td>
<td></td>
</tr>
<tr>
<td>ME 431</td>
<td>Systems Dynamics</td>
<td></td>
</tr>
<tr>
<td>ME 432</td>
<td>Control Engineering</td>
<td></td>
</tr>
<tr>
<td>ME 454</td>
<td>Project Mgmt for Engineers</td>
<td></td>
</tr>
<tr>
<td>ME 471</td>
<td>Introduction to Astronautics</td>
<td></td>
</tr>
<tr>
<td>ME 499</td>
<td>Special Topics in Mechanical Engineering (must choose at least a 3 credit section)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 6-7

Department of Statistics

Phone: 703-993-3645
Email: statistics@gmu.edu
Website: statistics.gmu.edu

Statistical methods and methods for data analysis are crucial for all disciplines in which data are present. As collection of data grows in all sectors of employment, the Department of Statistics prepares students to meet the challenges of data collection, data reduction, interpretation, and analysis.

Department Offerings

Courses

The department offers a variety of introductory courses and more advanced course work in specialized statistical methodology and applications. The focus of the department’s offerings is applied, computational, and theoretical, with special emphasis on biostatistics, graphics and visualization, federal statistics, and data analytics.

Undergraduate Programs

The Department of Statistics offers an undergraduate Statistics, BS (p. 1146), as well as a Data Analysis Minor (p. 1140) and a Statistics Minor (p. 1150). A variety of advanced undergraduate courses are also available for inclusion in other degree programs.

Graduate Programs

The department also administers three master’s degree programs: Statistical Science, MS, (p. 1141) Biostatistics, MS (p. 1138) and Data Analytics Engineering, MS. (p. 1019) The Data Analytics Engineering, MS (p. 1019) is a multidisciplinary program with courses and concentrations offered by many participating departments in the Volgenau School of Engineering.

Two dual master’s degree programs, the Mathematics and Statistical Science Dual-Degree, MS (p. 1142) and the Operations Research and Statistical Science Dual-Degree, MS (p. 1142) are offered in conjunction with the Mathematical Sciences (p. 740) and Systems Engineering and Operations Research (p. 1151) departments respectively.

Finally, the Statistical Science, PhD (p. 1145) represents the highest academic attainment for a statistician and, as such, requires in-depth knowledge of modern statistical theory and practice.

Faculty

Department Faculty

Professors
Carr, Davis (associate chair), Rosenberger (chair), Vidyashankar

Associate Professors
Diao, Sutton, Tang

Assistant Professors
Bagchi, Bruce, Holmes, Hunter, Izmirli, Johnson, Qiao, Ramezani, Slawski, Strazzeri

Emeritus Faculty
Bolstein, Miller

Programs

• Applied Statistics Graduate Certificate
• Biostatistics, MS
• Data Analysis Minor
• Statistical Science, MS
• Statistical Science, PhD
• Statistics Minor
• Statistics, BS

Applied Statistics Graduate Certificate

Banner Code: VS-CERG-ASTA

Phone: 703-993-4835
Email: statistics@gmu.edu
This graduate certificate trains students in data analysis and statistical methodology. Also, it provides a clear record of additional instruction in statistics for future graduate programs or employers.

The General Concentration is intended to complement PhD and MS programs outside the Department of Statistics. It is also intended to be responsive to the needs of those who teach or work in government/industry and want to increase their knowledge of statistics. The certificate emphasizes the application of statistical tools, not theory. As such, there are no required prerequisite math courses, although one semester of calculus is strongly recommended.

The Federal Statistics Concentration is targeted at upgrading the skills of current practitioners. The federal statistical system is a complex data collection and analysis system that requires a wide variety of multidisciplinary skills for its maintenance. The federal statistics certificate is intended to respond to the need for broad training in statistics, survey methods, and data analysis, including graphics and data visualization. The program is extremely flexible and can be tailored to the needs of students within the federal statistical sector. It is also intended to be responsive to the needs of those in state and local governments, and those in the private sector involved in the collection, interpretation, or statistical analysis of federal data.

Admissions & Policies

Admissions

General Concentration
Applicants should have an undergraduate degree from an accredited institution, with a minimum overall GPA of at least 3.00 (on a 4.00 scale). No specific undergraduate degree is required. Applicants are expected to have basic computer literacy. Successful completion of an undergraduate course in statistics is required for admission. One semester of calculus is strongly recommended.

Federal Statistics Concentration
Potential candidates must hold a bachelor's degree and have taken at least two courses in calculus and one course in calculus-based probability and statistics. These minimal course requirements are normally satisfied by students who have successfully completed courses equivalent to the following Mason courses: MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142), MATH 114 Analytic Geometry and Calculus II, and STAT 344 Probability and Statistics for Engineers and Scientists I. Candidates must also be computer literate.

Certificate Requirements
Total credits: 12

This certificate may be pursued on a part-time basis only.

Requirements

Concentration in General (GEN)
Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 515</td>
<td>Applied Statistics and Visualization for Analytics</td>
<td></td>
</tr>
<tr>
<td>STAT 517</td>
<td>Experimental Design</td>
<td></td>
</tr>
<tr>
<td>STAT 522</td>
<td>Applied Multivariate Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 525</td>
<td>Nonparametric Statistics and Categorical Data Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 526</td>
<td>Applied Regression Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 532</td>
<td>Introduction to Statistical Software Packages</td>
<td></td>
</tr>
<tr>
<td>STAT 535</td>
<td>Analysis of Experimental Data ¹</td>
<td></td>
</tr>
<tr>
<td>STAT 539</td>
<td>Topics in Applied Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 560</td>
<td>Biostatistical Methods</td>
<td></td>
</tr>
<tr>
<td>STAT 574</td>
<td>Survey Sampling I</td>
<td></td>
</tr>
<tr>
<td>STAT 674</td>
<td>Survey Sampling II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

¹ STAT 535 is the prerequisite for all other courses besides STAT 574 and STAT 674. A student with sufficient background in statistics may seek a waiver of the STAT 535 prerequisite from the appropriate course instructor.

Enrollment in STAT 574 requires special permission from the course instructor.

Concentration in Federal Statistics (FSS)
Some courses may have prerequisites beyond minimal admission requirements for which students must qualify or seek a waiver from the course instructor.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td></td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td></td>
</tr>
<tr>
<td>STAT 560</td>
<td>Biostatistical Methods</td>
<td></td>
</tr>
<tr>
<td>STAT 574</td>
<td>Survey Sampling I</td>
<td></td>
</tr>
<tr>
<td>STAT 654</td>
<td>Applied Statistics II</td>
<td></td>
</tr>
<tr>
<td>STAT 657</td>
<td>Nonparametric Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 658</td>
<td>Time Series Analysis and Forecasting</td>
<td></td>
</tr>
<tr>
<td>STAT 662</td>
<td>Multivariate Statistical Methods</td>
<td></td>
</tr>
<tr>
<td>STAT 663</td>
<td>Statistical Graphics and Data Exploration I</td>
<td></td>
</tr>
<tr>
<td>STAT 665</td>
<td>Categorical Data Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 674</td>
<td>Survey Sampling II</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

¹ All of these certificate courses may be used for credit toward the Statistical Science, MS (p. 1141).

Electives
The MS in Biostatistics will allow students to specialize in the design and analysis of health-related and biological studies, while maintaining the rigor and technical training of the Statistical Science master’s program.

In this degree, students will take a statistics core and a "bio" core, involving courses in public health, biology, and clinical medicine (including ethics). It also involves a research core which allows students to solve real data problems in the biological or health area and collaborate with other scientists in an interdisciplinary team. Finally, students will choose from electives in bioinformatics, global and community health, or targeted statistics courses.

This graduate degree prepares students for analyzing difficult data specific to biology and health. The program, with its research core, will also be sufficiently rigorous for students who wish to pursue a PhD in Biostatistics.

Admissions & Policies

Admissions
In addition to satisfying general admission requirements for graduate study, all applicants are expected to have basic computer literacy. They also must hold a bachelor's degree from an accredited institution in a field that includes coursework in multivariable calculus, matrix or linear algebra, statistics, and calculus-based probability. Applicants with degrees in such fields as mathematics, statistics, and some engineering programs usually meet these requirements. For applicants with degrees in other fields, these requirements are normally satisfied if students have successfully completed courses equivalent to the listed Mason courses.

Note that coursework taken to correct deficiencies in undergraduate preparation is not counted toward the degree.

Requirements

Degree Requirements
Total credits: 30
In addition to meeting general requirements that apply to master's degrees at Mason, all students must complete the 21-credit core requirements for the degree. A grade of "B-" or better is required in all 500-level statistics core courses. Students build on these core requirements by choosing 9 credits of electives.

Core Courses
Statistics Core
The Statistics core provides the basic probability, statistical analysis techniques, and statistical modeling tools that all biostatisticians must know, and provides a basis for higher level elective coursework.

Bio Core
The Bio core is designed to provide the biological background necessary for biostatisticians. These courses offer preparation in the areas of public health and epidemiology (GCH 712 Introduction to Epidemiology), bioengineering (BENG 501 Bioengineering Research Methods, BENG 538 Medical Imaging) as well as bioinformatics (BINF 630 Bioinformatics Methods). In addition, this portion of the core curriculum ensures that students are trained in the statistical techniques required for clinical medicine, and includes material on ethics in research (STAT 560 Biostatistical Methods).

Research Core
The Research core has been designed to assist students in the development of the requisite skills for careers in consulting or research. These courses will allow students to consult directly with biologists and medical and public health scientists on real data problems and provide opportunities to write reports and give oral presentations.
Electives
The electives labeled STAT are specifically chosen from the department's master's-level electives to include techniques that are particularly important for biostatisticians.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select three electives from the following:</td>
<td>9</td>
</tr>
<tr>
<td>GCH 782</td>
<td>International Research Ethics and Methods</td>
<td></td>
</tr>
<tr>
<td>GCH 806</td>
<td>Advanced Multivariate Statistics and Data Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>for Health Care Research</td>
<td></td>
</tr>
<tr>
<td>STAT 652</td>
<td>Statistical Inference</td>
<td></td>
</tr>
<tr>
<td>STAT 657</td>
<td>Nonparametric Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 662</td>
<td>Multivariate Statistical Methods</td>
<td></td>
</tr>
<tr>
<td>STAT 663</td>
<td>Statistical Graphics and Data Exploration</td>
<td></td>
</tr>
<tr>
<td>STAT 665</td>
<td>Categorical Data Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 668</td>
<td>Survival Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 672</td>
<td>Statistical Learning and Data Analytics</td>
<td></td>
</tr>
<tr>
<td>STAT 760</td>
<td>Advanced Biostatistical Methods</td>
<td></td>
</tr>
<tr>
<td>STAT 773</td>
<td>Statistical Methods for Longitudinal Data Analysis</td>
<td></td>
</tr>
<tr>
<td>BENG 525</td>
<td>Neural Engineering</td>
<td></td>
</tr>
<tr>
<td>BENG 537</td>
<td>Medical Image Processing</td>
<td></td>
</tr>
<tr>
<td>BENG 541</td>
<td>Biomatertials</td>
<td></td>
</tr>
<tr>
<td>BENG 550</td>
<td>Advanced Biomechanics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 9

Accelerated Master’s

Bioengineering, BS/Biostatistics, Accelerated MS

Overview:
Highly-qualified students in Bioengineering, BS (p. 1032) have the option of obtaining an accelerated Biostatistics, MS (p. 1138). Students in an accelerated degree program must fulfill all university requirements for the master's degree.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

Admission Requirements:
Students enrolled in a BS degree in Bioengineering (p. 1032) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed MATH 213 Analytic Geometry and Calculus III and BENG 320 Bioengineering Signals and Systems. Criteria for admission are identical to criteria for admission to the Biostatistics, MS (p. 1138) program.

Accelerated Option Requirements:
Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students register for the following 500-level courses, which will also count towards the technical elective requirements of their undergraduate degree:

- BENG 501 Bioengineering Research Methods 3
- STAT 554 Applied Statistics I 3

Note:
Students are permitted to take additional graduate basic courses in their undergraduate programs. In such cases, those classes cannot be counted toward requirements for the MS.

Degree Conferral:
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form (https://registrar.gmu.edu/forms) that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Statistics, BS/Biostatistics, Accelerated MS

Overview:
Highly-qualified students in Statistics, BS (p. 1146) have the option of obtaining an accelerated Biostatistics, MS (p. 1138). Students in an accelerated degree program must fulfill all university requirements for the master's degree.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

Admission Requirements:
Students enrolled in a BS degree in Statistics may apply to this option if they have earned 90 undergraduate credits with an overall GPA of 3.00.

Accelerated Option Requirements:
Students must complete all requirements for the BS and MS programs, with 6 credits overlap.

Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with grades of B or better in two 500-level STAT selected from STAT 544 (https://catalog.gmu.edu/search/?P=STAT%20544) Applied Probability, STAT 554 (https://catalog.gmu.edu/search/?P=STAT%20554) Applied Statistics I, and STAT 560, Biostatistical methods.

Degree Conferral:
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at
the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master's degree is conferred.

**Data Analysis Minor**

Banner Code: DATA

Phone: 703-993-3645
Email: statistics@gmu.edu
Website: statistics.gmu.edu

The minor provides students with a background in data analysis and statistical methodology. It is intended to complement undergraduate degree programs such as computer science, economics, environmental engineering, geography, mathematics, nursing, psychology, public administration, sociology, and systems engineering.

**Admissions & Policies**

**Policies**

For policies governing all minors, see AP.5.3.4 Minors (p. 90).

**Program Requirements**

The minor requires 15 credits: a core sequence of 6 credits, plus 9 credits of electives. Grades of C or better are required in all courses. At least 3 of the 9 elective credits must be in STAT (p. 2220) or CDS (p. 1453) courses numbered above 300. At least 8 credits must be in courses not required by the student's major.

**Minor Requirements**

Total credits: 15

**Core Sequence Credits**

Select one sequence from the following: \(^1\)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 350</td>
<td>Introductory Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 354</td>
<td>Probability and Statistics for Engineers and Scientists II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Note: Mathematics majors may substitute MATH 351 and MATH 352 for the core sequence credits provided all 9 elective credits are in STAT courses.

**Electives**

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
<tr>
<td>STAT 455</td>
<td>Experimental Design</td>
<td>3</td>
</tr>
<tr>
<td>STAT 456</td>
<td>Applied Regression Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 460</td>
<td>Introduction to Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 462</td>
<td>Applied Multivariate Statistics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 463</td>
<td>Introduction to Exploratory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 465</td>
<td>Nonparametric Statistics and Categorical Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 472</td>
<td>Introduction to Statistical Learning</td>
<td>3</td>
</tr>
<tr>
<td>STAT 474</td>
<td>Introduction to Survey Sampling</td>
<td>3</td>
</tr>
<tr>
<td>STAT 499</td>
<td>Special Topics in Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BENG/IT 322</td>
<td>Health Data Challenges</td>
<td>3</td>
</tr>
<tr>
<td>BINF 401</td>
<td>Bioinformatics and Computational Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 312</td>
<td>Biostatistics for Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 314</td>
<td>Introduction to Research Design and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CDS 301</td>
<td>Scientific Information and Data Visualization</td>
<td>3</td>
</tr>
<tr>
<td>CDS 302</td>
<td>Scientific Data and Databases</td>
<td>3</td>
</tr>
<tr>
<td>CDS 303</td>
<td>Scientific Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>CS 445</td>
<td>Computational Methods for Genomics</td>
<td>3</td>
</tr>
<tr>
<td>CS 450</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CS 484</td>
<td>Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 101</td>
<td>Introduction to Cyber Security Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 325</td>
<td>Discrete Events Systems Modeling</td>
<td>3</td>
</tr>
<tr>
<td>ECON 345</td>
<td>Introduction to Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 445</td>
<td>Design and Analysis of Experiments</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 300</td>
<td>Research Methods and Analysis (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>GGS 300</td>
<td>Quantitative Methods for Geographical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 354</td>
<td>Data Analysis and Global Change Detection Techniques</td>
<td>3</td>
</tr>
<tr>
<td>OR/SYST 335</td>
<td>Discrete Systems Modeling and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>OR/MATH 441</td>
<td>Deterministic Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>OR/MATH 442</td>
<td>Stochastic Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 300</td>
<td>Statistics in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 313</td>
<td>Statistics for the Behavioral Sciences (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 405</td>
<td>Analysis of Social Data</td>
<td>3</td>
</tr>
<tr>
<td>SYST 469</td>
<td>Human Computer Interaction</td>
<td>3</td>
</tr>
<tr>
<td>SYST 473</td>
<td>Decision and Risk Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9
Statistical Science, MS

Admissions & Policies

Admissions

In addition to satisfying general admission requirements for graduate study, all applicants are expected to have basic computer literacy and some experience using statistical software (such as SAS and R). They also must hold a bachelor's degree from an accredited institution in a field that includes coursework in multivariable calculus, matrix or linear algebra, statistics, calculus-based probability, and statistical software. These requirements are normally satisfied if students have successfully completed courses equivalent to the following Mason courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td></td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 351</td>
<td>Probability</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

Coursework taken to correct deficiencies in undergraduate preparation is not counted toward the degree.

Specific application deadlines and requirements are available through the Office of Graduate Admissions.

Requirements

Degree Requirements

Total credits: 30

In addition to meeting general requirements that apply to master’s degrees at Mason, all students must complete the 15-credit core requirements for the degree. Grades of B- or better are required in three of the core courses: STAT 544 (Applied Probability), STAT 554 (Applied Statistics I), and STAT 654 Applied Statistics II. Students build on these core requirements by choosing 9 credits of methodology courses and 6 credits of electives.

Students select either the professional or research option, depending on career ambitions. The professional option provides MS degree qualifications to those seeking an expanded knowledge base in modern statistical theory and practice but do not wish to pursue a research career. The research option is for students planning to continue with a PhD degree, or begin/continue careers in statistical methodology research.

Professional Option

The professional option focuses on completing coursework in modern statistical theory and practice. 30 credits are required for the degree: 15 credits of core courses (taken by all MS students), 9 credits of methodology courses, and 6 credits of electives.

Students who select the professional option may elect to complete a master’s research project resulting in a technical report. This report is not an original research report but a scholarly essay on a topic of current interest in the statistical science discipline. The technical report is usually about 20 to 25 pages long and demonstrates the student’s ability to read and synthesize current technical literature into a scholarly essay. The report is evaluated by the student’s adviser, taking into account the comprehensiveness of the coverage of the scientific literature, the accuracy of presentation and interpretation, and the literary style. Students are notified of their evaluations, and they may be required to revise their report to further develop their skills in preparing reports on technical subjects. The report is usually written in the context of 3 credits of STAT 798 Master’s Research Project, which count as elective credits. Students opting not to complete a research project must take 30 credits of coursework.

Research Option

The research option requires 30 credits, including 6 credits that must be in independent research (thesis). Research is done under the guidance of a faculty member. Research may be carried out at Mason or, if appropriate, at nearby facilities. For example, students may pursue research at their place of employment on topics of interest to their employer, provided the research meets the standards of the university. The thesis is usually written in the context of 6 credits of STAT 799 Master’s Thesis, which count as elective credits. The remaining 24 credits include the 15 core credits and 9 methodology credits.

In addition to satisfying general university requirements for a master’s degree, candidates who select the research option must submit a thesis based on the research to the student’s thesis committee, which must give preliminary approval. The composition and appointment of this committee follows graduate program policies.

Candidates also must pass a final oral exam that concentrates on, but is not limited to, the area on which the thesis is written. The exam is administered by the student’s thesis committee, and all interested members of the graduate faculty are invited to attend and participate in the questioning. The thesis committee makes the final decision on whether the candidate passes or fails.

Core Courses

The core coursework covers the basic elements of statistics at the graduate level. STAT 544 Applied Probability covers the major
The statistical inference framework for statistical theory and practice. STAT 652 Statistical Inference provides basic statistical theory. After completing this course, students have the theoretical basis from which statistical methods are derived.

STAT 554 Applied Statistics I is a survey of statistical methods that have become the backbone of statistical practice. Focus in this course is on techniques that quantify random behavior. STAT 654 Applied Statistics II provides an overview of principles of statistical modeling.

The final core course is STAT 634 Case Studies in Data Analysis, which is a writing intensive course that serves as a capstone experience. Students synthesize methods and ideas acquired in their coursework in a statistical consulting environment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 634</td>
<td>Case Studies in Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 652</td>
<td>Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>STAT 654</td>
<td>Applied Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

**Methodology Courses**

Methodology courses may be chosen from any STAT courses numbered 540-775 (p. 2220) for 9 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 621</td>
<td>Algebra I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 675</td>
<td>Linear Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 677</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 678</td>
<td>Partial Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 685</td>
<td>Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 634</td>
<td>Case Studies in Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 652</td>
<td>Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

Select 6 credits of electives from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 500-519 (p. 2220)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>STAT 540-799 (p. 2220)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ECE 535</td>
<td>Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 630</td>
<td>Statistical Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 637</td>
<td>Econometrics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 555</td>
<td>Actuarial Modeling I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 556</td>
<td>Actuarial Modeling II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 653</td>
<td>Construction and Evaluation of Actuarial Models I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 654</td>
<td>Construction and Evaluation of Actuarial Models II</td>
<td>3</td>
</tr>
<tr>
<td>OR 531</td>
<td>Analytics and Decision Analysis</td>
<td>3</td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 645</td>
<td>Stochastic Processes</td>
<td>3</td>
</tr>
<tr>
<td>OR 647</td>
<td>Queuing Theory</td>
<td>3</td>
</tr>
<tr>
<td>OR 675</td>
<td>Reliability Analysis</td>
<td>3</td>
</tr>
<tr>
<td>or SYST 675</td>
<td>Reliability Analysis</td>
<td>3</td>
</tr>
<tr>
<td>OR 719</td>
<td>Graphical Models for Inference and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>or CSI 775</td>
<td>Graphical Models for Inference and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>MATH 675</td>
<td>Linear Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 677</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 678</td>
<td>Partial Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 685</td>
<td>Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 634</td>
<td>Case Studies in Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 652</td>
<td>Statistical Inference</td>
<td>3</td>
</tr>
</tbody>
</table>

**Notes:**

- Credit toward the MS in Statistical Science will not be given for both STAT 515 Applied Statistics and Visualization for Analytics and STAT 663 Statistical Graphics and Data Exploration I.
- Credit toward the MS in Statistical Science will not be given for both MATH 654 Construction and Evaluation of Actuarial Models II and STAT 668 Survival Analysis.
- A student concurrently enrolled in the Actuarial Sciences Graduate Certificate (p. 742) and the MS in Statistical Science may count MATH 555 Actuarial Modeling I and MATH 556 Actuarial Modeling II as elective courses and may count MATH 653 Construction and Evaluation of Actuarial Models I and MATH 654 Construction and Evaluation of Actuarial Models II as methodology courses. The Graduate Certificate in Actuarial Sciences (p. 742) must be completed prior to or concurrently with the MS in Statistical Science. Otherwise, at most two of MATH 555 Actuarial Modeling I, MATH 556 Actuarial Modeling II, MATH 653 Construction and Evaluation of Actuarial Models I, and MATH 654 Construction and Evaluation of Actuarial Models II can be counted toward the MS in Statistical Science as elective courses; none can be applied as methodology courses.

**Mathematics and Statistical Science Dual-Degree MS**

This program allows students to earn an MS in Mathematics (p. 754) and an MS in Statistical Science (p. 1141) by completing 48 credits of coursework in both areas instead of the 60 that would be required if the degrees were sought independently.

**Admission Requirements**

Applicants must satisfy admission requirements for both the MS in Mathematics (p. 754) and the MS in Statistical Science (p. 1141) programs. A joint faculty committee from the Department of Mathematical Sciences (p. 740) and the Department of Statistics (p. 1136) make final admission decisions into the dual-degree program.

**MS-MATH/STAT Dual-Degree Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 621</td>
<td>Algebra I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 675</td>
<td>Linear Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 677</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 678</td>
<td>Partial Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 685</td>
<td>Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 634</td>
<td>Case Studies in Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 652</td>
<td>Statistical Inference</td>
<td>3</td>
</tr>
</tbody>
</table>
Operations Research and Statistical Science Dual-Degree MS

This program allows students to earn an MS in Operations Research (p. 1153) and an MS in Statistical Science (p. 1141) by completing 48 credits of coursework in both areas instead of the 60 that would be required if the degrees were sought independently.

Admission Requirements

Applicants must satisfy admission requirements for the MS in Operations Research (p. 1153) Program and the MS in Statistical Science (p. 1141) Program. A joint faculty committee from the Statistics and Systems Engineering and Operations Research Departments make final admission decisions into the dual-degree program.

MS-OPRS/STAT Dual Degree Requirements

Total credits: 48

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 635</td>
<td>Discrete System Simulation</td>
<td>3</td>
</tr>
<tr>
<td>OR 699</td>
<td>Masters Project</td>
<td>3</td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 634</td>
<td>Case Studies in Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>OR 641</td>
<td>Linear Programming</td>
<td></td>
</tr>
<tr>
<td>OR 642</td>
<td>Integer Programming</td>
<td></td>
</tr>
<tr>
<td>OR 643</td>
<td>Network Modeling</td>
<td></td>
</tr>
<tr>
<td>OR 644</td>
<td>Nonlinear Programming</td>
<td></td>
</tr>
<tr>
<td>OR 645</td>
<td>Stochastic Processes</td>
<td></td>
</tr>
<tr>
<td>OR 647</td>
<td>Queuing Theory</td>
<td></td>
</tr>
<tr>
<td>OR 674</td>
<td>Dynamic Programming</td>
<td></td>
</tr>
<tr>
<td>OR 675</td>
<td>Reliability Analysis</td>
<td></td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td></td>
</tr>
</tbody>
</table>

Elective Credits in OR Courses

Select 12 elective credits in OR courses at the 600 level, including at least one deterministic methods course and at least one stochastic methods course:

Deterministic Methods Courses:
- OR 641: Linear Programming
- OR 642: Integer Programming
- OR 643: Network Modeling
- OR 644: Nonlinear Programming

Stochastic Methods Courses:
- OR 645: Stochastic Processes
- OR 647: Queuing Theory
- OR 674: Dynamic Programming
- OR 675: Reliability Analysis
- SYST 664: Bayesian Inference and Decision Theory

Total Credits: 12

Elective Credits in STAT Courses

Select 9 elective credits from any STAT courses numbered 540-775

Total Credits: 9

Notes:

- Students currently enrolled in one of the MS programs must declare pursuit of the dual MS within one year of matriculation into the first MS program.
- A maximum of 6 credits across the two disciplines may be in independent research (thesis). The requirements for independent research are the same as detailed for the associated MS program.
- Students in either the BS (selected)/Operations Research, Accelerated MS program (p. 1156) or the BS (selected)/Statistical Science, Accelerated MS program (p. 1144) cannot get a reduction of 6 credits toward this dual degree. Students who want to proceed to a PhD degree will only be able to waive the number of credits specified in the associated PhD degree requirements, even though they will have 48 credits at the MS level.
- If a student decides not to complete the required 48 credits, a single MS degree will not be granted unless the student fulfills the requirements for the MS in Operations Research (p. 1153) or the MS in Statistical Science (p. 1141).
- Once a student receives one of the MS degrees from either department, the student will no longer be eligible for the reduction in credit (i.e., will need to complete 30 credits) if the student later decides to earn the other MS degree.
Accelerated Master's

BS (selected)/Statistical Science, Accelerated MS

Overview
Highly-qualified students in BS programs have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.

For more detailed information, see AP.6 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
No specific undergraduate BS degree is required. Students enrolled in any BS degree may apply to the accelerated Statistical Science, MS (p. 1141) program if such an accelerated Statistical Science, MS pathway is allowable from the student's BS program, which will be determined by the academic advisors of both the BS and MS programs; and if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td></td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 351</td>
<td>Probability</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements
Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. (Credit may not be received for both STAT 474 and STAT 574; nor for both STAT 460 and STAT 560.) The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master's degree is conferred.

Statistics, BS/Statistical Science, Accelerated MS

Overview
Highly-qualified students in the Statistics, BS program have the option of applying to the accelerated Statistical Science, MS (p. 1141) program if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>STAT 334</td>
<td>Introduction to Probability Models and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 346</td>
<td>Probability for Engineers</td>
<td></td>
</tr>
<tr>
<td>STAT 354</td>
<td>Probability and Statistics for Engineers and Scientists II</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 360</td>
<td>Introduction to Statistical Practice II</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements
Students must complete all credits satisfying degree requirements for the BS and Ms programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree. For Statistics, BS candidates:

- STAT 560 Biostatistical Methods replaces the corresponding undergraduate version STAT 460 Introduction to Biostatistics as a Statistical Elective. Credit may not be received for both STAT 460 and STAT 560.
- STAT 574 Survey Sampling I replaces the corresponding undergraduate version STAT 474 Introduction to Survey Sampling as a Statistical Elective. Credit may not be received for both STAT 474 and STAT 574.
- STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, and STAT 554 Applied Statistics I may be counted as Technical Electives toward the BS program requirements.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the
master’s program. Reserve graduate credits do not apply to the undergraduate degree.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions and Recruitment Office. At the completion of MS requirements, a master’s degree is conferred.

Statistical Science, PhD
Banner Code: VS-PHD-STAT
Phone: 703-993-3645
Email: statistics@gmu.edu
Website: statistics.gmu.edu

The PhD in Statistical Science represents the highest academic attainment for a statistician and, as such, requires in-depth knowledge of modern statistical theory and practice. The degree program is a hybrid of mathematical theory, computation, and data analysis; and students are expected to be proficient in all three. Current research areas of key department faculty in the program include biostatistics, statistical genetics, statistical graphics, data confidentiality, networking analysis, and data analytics.

Admissions & Policies

Admissions
Students should have a master’s degree in a mathematically-intensive discipline with a minimum 3.50 GPA. Students entering with a master’s degree are expected to have completed coursework equivalent to STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 652 Statistical Inference, and STAT 654 Applied Statistics II with exceptional performance. The program also requires a course in advanced calculus, MATH 315 Advanced Calculus I or equivalent, with a B or better. In exceptional circumstances, talented students with a mathematically-intensive undergraduate degree may be admitted.

Specific application deadlines and requirements (https://admissions.gmu.edu/grad/application-deadlines-and-requirements/?academicUnit=VS&ga=1.107632321.273102085.1480697294) are available through the Office of Graduate Admissions.

Policies

Reduction of Credit
Students must complete a minimum of 72 graduate credits, which may be reduced by a maximum of 24 credits with a master’s degree in statistics, mathematics, or similar discipline, or by 30 credits with a Master’s degree from the George Mason University Department of Statistics. Reduction of credit requires the approval of the program director or designee and the dean or designee of the school. They determine whether the credits are eligible for reduction of credit and applicable to the degree program and the number of credits to be reduced.

Requirements

Degree Requirements
Total credits: 72

The 72 hours of required doctoral-level credits typically consist of 48 credits of regular coursework and 24 credits of dissertation research. The following degree plan is based on a student who receives a 24 credit reduction. Students who receive more or less than a 24 credit reduction should consult with their advisor.

Doctoral Coursework
Students are required to complete 24 credits of advanced emphasis coursework, including four core courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 778</td>
<td>Algorithms and Simulation for Statistics in C</td>
<td>3</td>
</tr>
<tr>
<td>STAT 971</td>
<td>Probability Theory</td>
<td>3</td>
</tr>
<tr>
<td>STAT 972</td>
<td>Mathematical Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 973</td>
<td>Mathematical Statistics II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The remaining four courses are selected and approved by the doctoral supervisory committee and the PhD Program Director and should be numbered 600 or above.</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits 24

Qualifying Exam
Written qualifying exams will be taken in the following areas:
- Applied Probability
- Applied Statistics
- Statistical Inference

Qualifying exams are offered in August and January. Students are required to take the qualifying exams within one year of admission. Supported students entering with a Master’s degree are required to take the qualifying exams within one semester of admission. Students who do not pass all three exams in two consecutive exam periods are terminated from the program.

Dissertation Research
In order to advance to candidacy, students must complete all coursework, pass the qualifying and comprehensive examinations, and defend a dissertation proposal.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 24 credits from the following:</td>
<td>24</td>
</tr>
<tr>
<td>STAT 990</td>
<td>Dissertation Topic Presentation (required)</td>
<td></td>
</tr>
<tr>
<td>STAT 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>STAT 999</td>
<td>Doctoral Dissertation (must complete a minimum of 12 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 24
Doctoral Committee Selection
Following successfully passing the qualifying exams, students should select a dissertation director and a doctoral studies committee. The chair of the doctoral studies committee must be a member of the graduate faculty with a regular appointment in the Department of Statistics, and will typically be the dissertation director. The doctoral studies committee consists of a chair, two members of the graduate faculty who hold regular appointments in the Department of Statistics, and an external member. The doctoral studies committee must be approved by the director of the doctoral program in statistical science.

Advancement to Candidacy
Admission to candidacy is acquired on completion of an oral comprehensive exam administered by the doctoral supervisory committee, covering the four core courses and four advanced emphasis courses, and a dissertation proposal. A student who fails the oral comprehensive exam may take it a second time, within six months. If the student fails a second time, the student is terminated from the program. A student must wait at least six weeks after passing the oral comprehensive exam before the dissertation proposal. A student who fails the dissertation proposal may take it a second time, within six months. If the student fails a second time, the student is terminated from the program.

Doctoral Defense
The dissertation defense serves as the student's final examination and is conducted by the doctoral supervisory committee. Both the comprehensive exam and final exam are scheduled on approval of a written request to the department chair.

Statistics, BS
Banner Code: VS-BS-STIC

The Bachelor of Science in Statistics is designed to provide a framework for students to develop connections between statistical concepts and theories and their applications to statistical practice. It will prepare statisticians who can use modern statistical techniques to design studies, collect data, analyze and visualize high dimensional data sets, and draw valid conclusions in an increasingly data-centric world. In this program, students will meld the time-tested concepts and theories of statistics with modern methods of analysis, in order to interpret the data that is collected in nearly every discipline and every sector of industry and government.

The BS in Statistics requires a total of 120 credit hours, including major core requirements, concentration requirements, and Mason Core requirements. The program’s major core curriculum provides students with a firm foundation in statistics, mathematics, and computing. Selection of a concentration allows a student to specialize in applied, theoretical, or computational aspects of statistical practice.

Students will select one of three concentrations: Applied Statistics, Mathematical Statistics, or Statistical Analytics. The Applied Statistics concentration focuses on developing proficiency in analytical methods applicable to a specific discipline of the student's choosing. This is accomplished through the requirement to complete a minor in a field that makes substantial use of data analysis. The Mathematical Statistics concentration is designed for students interested in mastering the theoretical underpinnings of statistics and probability; this concentration is recommended for students who intend to continue graduate studies in statistics or whose main focus is on research. The Statistical Analytics concentration blends the disciplines of computer science and statistics in a very modern way and is designed for students interested in applying concepts from statistics and computer science to the analysis of massive data sets.

Graduates of this program can look forward to careers in local, state, and federal government, and in the many industries that conduct scientific research, collect, and analyze data. They will enter the workforce with the ability to impact science, public policy, technology, and industry in a positive way through their expertise in data collection, analysis, synthesis, and interpretation, each with the highest ethical standards. Graduates will also be well prepared to continue their studies in graduate schools if they so desire.

Admissions & Policies

Policies
Advanced Placement, Credit by Exam
A score of 5 on the Advanced Placement (AP) statistics exam qualifies students for credit in STAT 260.

Change of Major
Students considering changing their major to Statistics should consult with the Volgenau School of Engineering Coordinator of Undergraduate Advising, 2500 Nguyen Engineering Building. These students must have a cumulative GPA of at least 2.75 and completed MATH 114 with a grade of C or better. See Change of Major (p. 1013) for more information.

Grades
Students must earn a C or better in Major Core requirement courses as well as in courses required to satisfy prerequisites.

Termination from the Major
No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their
department, and the Associate Dean for Undergraduate Programs. The
deadline for extension requests is the add deadline for the semester in
which the course is required.

Students who have been terminated from a Volgenau School of
Engineering major may not register for a Volgenau School course without
permission of the department offering the course. This applies to all
undergraduate courses offered by the Volgenau School except IT 104
Introduction to Computing (Mason Core) (p. 142) and STAT 250
Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of
Engineering if the student has previously met the termination criteria for
that major at any time, regardless of what the student's major was at the
time the courses were taken.

Requirements

Degree Requirements
Total credits: 120

Major Core
Statistics Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 260</td>
<td>Introduction to Statistical Practice I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 334</td>
<td>Introduction to Probability Models and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 346</td>
<td>Probability for Engineers</td>
<td></td>
</tr>
<tr>
<td>STAT 354</td>
<td>Probability and Statistics for Engineers and Scientists II</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 360</td>
<td>Introduction to Statistical Practice II</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
<tr>
<td>STAT 456</td>
<td>Applied Regression Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 463</td>
<td>Introduction to Exploratory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 489</td>
<td>Pre-Capstone Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>STAT 490</td>
<td>Capstone in Statistics (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 24

Mathematics Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 11

Computational Skills Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 105</td>
<td>Computer Ethics and Society (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>or CDS 151</td>
<td>Data Ethics in an Information Society (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 5

1 Students in the Statistical Analytics concentration must take CS 105.

Restricted Electives

Statistics

Select nine credits of STAT electives 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT courses numbered 440-499 (p. 2220)</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

1 May not be used to fulfill other degree requirements.

Technical

Select nine credits of technical electives. Specific course
selections must be pre-approved by the undergraduate
coordinator. Students may need to choose electives to
satisfy prerequisites for some of these courses. In some
cases, students will need to contact other departments for
permission to enroll.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS courses numbered between 100-399 (p. 1453)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS courses numbered above 200 (p. 1468)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH courses numbered above 200 (p. 1923)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR courses numbered above 300 (p. 2024)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENG 322</td>
<td>Health Data Challenges</td>
<td></td>
</tr>
<tr>
<td>CYSE 101</td>
<td>Introduction to Cyber Security Engineering</td>
<td></td>
</tr>
<tr>
<td>CYSE 325</td>
<td>Discrete Events Systems Modeling</td>
<td></td>
</tr>
<tr>
<td>ENGH 388</td>
<td>Professional and Technical Writing</td>
<td></td>
</tr>
<tr>
<td>IT 214</td>
<td>Database Fundamentals</td>
<td></td>
</tr>
<tr>
<td>SOCI 391</td>
<td>Big Data, Technology, and Society</td>
<td></td>
</tr>
<tr>
<td>SYST 438</td>
<td>Analytics for Financial Engineering and Econometrics</td>
<td></td>
</tr>
<tr>
<td>SYST 468</td>
<td>Applied Predictive Analytics</td>
<td></td>
</tr>
<tr>
<td>SYST 473</td>
<td>Decision and Risk Analysis</td>
<td></td>
</tr>
<tr>
<td>SYST 488</td>
<td>Financial Systems Engineering</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Concentrations

Select one concentration and complete all requirements.

Concentrations

• Concentration in Applied Statistics (ASTA) (p. 1148)
• Concentration in Mathematical Statistics (MTHS) (p. 1148)
• Concentration in Statistical Analytics (STLA) (p. 1148)
Concentration in Applied Statistics (ASTA)
Focuses on developing proficiency in analytical methods applicable to a specific discipline of the student’s choosing. This is accomplished through the requirement to complete a minor in a field that makes substantial use of data analysis.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students must complete 15 - 21 credits in a pre-approved minor, selected in consultation with the undergraduate coordinator. Courses taken to fulfill the minor requirements that are not used to fulfill Major Core or Restricted Electives requirements are considered unique to the minor. At least 15 credits of the minor coursework, technical electives, general electives, and additional Mason Core courses must be at or above the 300 level.</td>
<td>15-21</td>
</tr>
</tbody>
</table>

Concentration in Mathematical Statistics (MTHS)
Designed for students interested in mastering the theoretical underpinnings of statistics and probability; this concentration is recommended for students who intend to continue graduate studies in statistics or whose main focus is on research.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 356</td>
<td>Statistical Theory</td>
<td>3</td>
</tr>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 290</td>
<td>Introduction to Advanced Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 315</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>15</td>
</tr>
</tbody>
</table>

1 MATH 215 may be taken in place of MATH 213 if student qualifies.

Concentration in Statistical Analytics (STLA)
Blends the disciplines of computer science and statistics in a very modern way and is designed for students interested in applying concepts from statistics and computer science to the analysis of massive data sets.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 472</td>
<td>Introduction to Statistical Learning</td>
<td>3</td>
</tr>
<tr>
<td>CS 211</td>
<td>Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 450</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>or CDS 302</td>
<td>Scientific Data and Databases</td>
<td>3</td>
</tr>
<tr>
<td>CS 484</td>
<td>Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>or CDS 303</td>
<td>Scientific Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>OR 481</td>
<td>Numerical Methods in Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>24</td>
</tr>
</tbody>
</table>

Additional Mason Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students must complete 15 - 21 credits in a pre-approved minor, selected in consultation with the undergraduate coordinator. Courses taken to fulfill the minor requirements that are not used to fulfill Major Core or Restricted Electives requirements are considered unique to the minor. At least 15 credits of the minor coursework, technical electives, general electives, and additional Mason Core courses must be at or above the 300 level.</td>
<td>15-21</td>
</tr>
</tbody>
</table>

Concentration in Statistical Analytics (STLA)
Blends the disciplines of computer science and statistics in a very modern way and is designed for students interested in applying concepts from statistics and computer science to the analysis of massive data sets.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 472</td>
<td>Introduction to Statistical Learning</td>
<td>3</td>
</tr>
<tr>
<td>CS 211</td>
<td>Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 450</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>or CDS 302</td>
<td>Scientific Data and Databases</td>
<td>3</td>
</tr>
<tr>
<td>CS 484</td>
<td>Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>or CDS 303</td>
<td>Scientific Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Discrete Mathematics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>OR 481</td>
<td>Numerical Methods in Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>24</td>
</tr>
</tbody>
</table>

Statistics, BS/Biostatistics, Accelerated MS

Overview:
Highly-qualified students in Statistics, BS (p. 1146) have the option of obtaining an accelerated Biostatistics, MS (p. 1138). Students in an accelerated degree program must fulfill all university requirements for the master’s degree.
For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies).

Admission Requirements:
Students enrolled in a BS degree in Statistics may apply to this option if they have earned 90 undergraduate credits with an overall GPA of 3.00.

Accelerated Option Requirements:
Students must complete all requirements for the BS and MS programs, with 6 credits overlap.
Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlapping with grades of B or better in two 500-level STAT selected from STAT 544 (https://catalog.gmu.edu/search/?P=STAT%20544) Applied Probability, STAT 554 (https://catalog.gmu.edu/search/?P=STAT%20554) Applied Statistics I, and STAT 560, Biostatistical methods.

Degree Conferral:
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at
the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master’s degree is conferred.

Statistics, BS/Data Analytics Engineering, Accelerated MS

Overview

Highly-qualified students in the Statistics, BS (p. 1146) program have the option of applying to the accelerated Data Analytics Engineering, MS (p. 1019) program.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Students in the Statistics, BS (p. 1146) program may apply to the accelerated Data Analytics Engineering, MS (p. 1019) program if they have earned 90 undergraduate credits with an overall GPA of at least 3.30.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BS and MS programs, with six credits overlap chosen from the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
<td>3</td>
</tr>
<tr>
<td>or CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models (Credit may not be received for both OR 441 and OR 541.)</td>
<td>3</td>
</tr>
<tr>
<td>or OR 531</td>
<td>Analytics and Decision Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 515</td>
<td>Applied Statistics and Visualization for Analytics</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 554</td>
<td>Applied Statistics I</td>
<td></td>
</tr>
</tbody>
</table>

All graduate course prerequisites must be completed prior to enrollment. Each 500-level course must be completed with a grade of B or better to apply toward the MS program. The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. The graduate courses may be counted as Technical Electives toward the Statistics, BS (p. 1146) program requirements, with approval of Statistics Department undergraduate coordinator.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form (https://registrar.gmu.edu/forms) that is submitted to the Office of the University Registrar and the VSE Graduate Admissions and Recruitment office. At the completion of MS requirements, a master’s degree is conferred.

Statistics, BS/Operations Research, Accelerated MS

Overview

Highly-qualified students in the Statistics, BS (p. 1146) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in Statistics, BS (p. 1146) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credit hours) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such electives to replace the corresponding undergraduate courses.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Statistics, BS/Systems Engineering, Accelerated MS

Overview

Highly-qualified students in the Statistics, BS (p. 1146) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in Statistics, BS (p. 1146) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credit hours) of approved master’s level courses taken as part of the undergraduate
degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such electives to replace the corresponding undergraduate courses.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Statistics, BS/Statistical Science, Accelerated MS**

**Overview**

Highly-qualified students in the Statistics, BS program have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Statistics, BS program may apply to the accelerated Statistical Science, MS (p. 1141) program if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>STAT 334</td>
<td>Introduction to Probability Models and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 346</td>
<td>Probability for Engineers</td>
<td></td>
</tr>
<tr>
<td>STAT 354</td>
<td>Probability and Statistics for Engineers and Scientists II</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 360</td>
<td>Introduction to Statistical Practice II</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

**Accelerated Option Requirements**

Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560 Biostatistical Methods, and STAT 574 Survey Sampling I. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree. For Statistics, BS candidates:

- STAT 560 Biostatistical Methods replaces the corresponding undergraduate version STAT 460 Introduction to Biostatistics as a Statistical Elective. Credit may not be received for both STAT 460 and STAT 560.
- STAT 574 Survey Sampling I replaces the corresponding undergraduate version STAT 474 Introduction to Survey Sampling as a Statistical Elective. Credit may not be received for both STAT 474 and STAT 574.
- STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, and STAT 554 Applied Statistics I may be counted as Technical Electives toward the BS program requirements.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master’s program. Reserve graduate credits do not apply to the undergraduate degree.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions and Recruitment Office. At the completion of MS requirements, a master’s degree is conferred.

**Statistics Minor**

Banner Code: STIC

Phone: 703-993-3645
Email: statistics@gmu.edu
Website: statistics.gmu.edu

The minor in Statistics provides students with a background in the theory and application of statistical methodology. It is intended to complement undergraduate degree programs in the Volgenau School and the College of Science, especially those programs that require MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142), MATH 114 Analytic Geometry and Calculus II, and STAT 344 Probability and Statistics for Engineers and Scientists I as a part of the major requirements.

**Admissions & Policies**

**Admissions**

To be admitted to the minor, students must have completed MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142) and MATH 114 Analytic Geometry and Calculus II with a grade of C or better.

**Policies**

The minor in Statistics requires 15 credit hours of coursework. Grades of C or better are required in all courses. At least 8 credits must be in courses not required by the student’s major. For policies governing all minors, see AP5.3.4 Minors (p. 90).

**Requirements**

**Minor Requirements**

Total credits: 15
The Systems Engineering and Operations Research (SEOR) Department offers a bachelor's degree in systems engineering, a minor in systems engineering, a minor in aviation flight training and management, a master's degree in systems engineering, a master's degree in operations research, and a doctoral degree in systems engineering and operations research. The department also offers a concentration in predictive analytics and a concentration in financial engineering within the school-wide master's degree in data analytics engineering. In addition, the department offers four systems engineering certificates at the master's level: architecture-based systems integration, C4I and cyber (command, control, communications, computing, intelligence, and cyber), engineering resilient enterprise systems, and financial systems; the department offers three operations research certificates: computational modeling, military operations research, and predictive data analytics. The department also offers a dual master's degree in operations research and master's degree in statistical science jointly with the Statistics Department.

There is much overlap between systems engineering and operations research. The department encourages students of either discipline to elect courses in the other. For more information, go to the department's website (http://seor.gmu.edu).

### Systems Engineering

Systems engineers determine the most effective ways to use all of a system's components: people, machines, materials, information, and energy. The engineers plan, design, implement, and manage integrated systems, working to ensure performance, safety, reliability, and maintainability. They also work to ensure that systems are delivered on time at a reasonable cost. Examples of systems include the national air transportation system, computer networks, autonomous vehicles, intelligent robots, the electric power grid, healthcare systems, and financial trading systems. Whereas other engineering disciplines concentrate on individual aspects of a system, such as electronics, ergonomics, or software, systems engineers focus on the system as a whole and the interaction of the underlying parts. Systems engineering, perhaps more than any other engineering discipline, is involved with the human and organizational aspects of developing the desired system. Systems engineering is the people-oriented engineering profession.

### Operations Research

Operations research is the professional field that uses analytical and data-based methods in engineering to support management decision making, often focusing on how best to allocate limited resources. Operations researchers do for organizations what physicists do for the physical world: they try to find order in apparent chaos by identifying the structure in complex situations and understanding how the components of organizations interact. The goal is to explain and predict the effects of actions taken on these systems and to use the information to make informed management decisions. Much of this work is developing and manipulating mathematical and computer models of organizational systems, frequently making use of big data to build and run the models.
Emeritus Faculty
Donohue, Palmer

Programs

- Aviation Flight Training and Management Minor
- Operations Research and Engineering Graduate Certificate
- Operations Research, MS
- Systems Engineering Graduate Certificate (SEOR)
- Systems Engineering Minor
- Systems Engineering and Operations Research, PhD
- Systems Engineering, BS
- Systems Engineering, MS

Aviation Flight Training and Management Minor
Banner Code: AVIM

Academic Advising
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu
Website: http://seor.gmu.edu/bsse/aviationminor.html

Students completing the minor will take classes for Pilot Ground School and Flight Training leading up to a solo flight. In addition, students will study aspects of aviation from systems engineering of air traffic control, design of airports, human factors and psychology, and financial planning and management. Students will be trained for required government licensing exams such as the Federal Aviation Administration (FAA) Knowledge Test and FAA Flight tests. Special fees to cover flight training costs will apply. Students are responsible for meeting all eligibility requirements.

Admissions & Policies

Policies
For policies governing all minors, see AP.5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15

Required SEOR Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 460</td>
<td>Introduction to Air Traffic Control</td>
<td>3</td>
</tr>
<tr>
<td>SYST 462</td>
<td>Flight Training Lab I (Lab fees to cover flight training costs apply)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Two Additional Courses

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 371</td>
<td>Systems Engineering Management</td>
<td>3</td>
</tr>
<tr>
<td>SYST 461</td>
<td>Air Transportation System Engineering</td>
<td></td>
</tr>
<tr>
<td>MIS 303</td>
<td>Introduction to Business Information Systems (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 305</td>
<td>Introduction to International Business (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 471</td>
<td>Airline Economics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Prerequisites
Some of the courses listed above have additional prerequisites. Students should pay careful attention to prerequisites when selecting courses.

Operations Research and Engineering Graduate Certificate
Banner Code: VS-CERG-OR

Systems Engineering and Operations Research
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu
Website: https://seor.gmu.edu/

Admissions & Policies

Admissions
Computational Modeling Concentration
For admission to the certificate with a Computational Modeling concentration, applicants must meet minimum entrance requirements for the MS in operations research (p. 1153), the MS in statistical science (p. 1141), or the PhD in computational sciences and informatics (p. 679).
Military Operations Research Concentration
Admissions requirements for the certificate with a Military Operations Research concentration are identical to those for the Operations Research, MS (p. 1153).

Predictive Data Analytics Concentration
The certificate with Predictive Analytics concentration will be open to all students who hold a BS degree in scientific and engineering disciplines from an accredited university program, with a GPA minimum established by VSE for all MS programs. Students who are already enrolled in a master’s program must submit an application form to enroll in this certificate with concentration program; all others must apply for graduate admission to this certificate with concentration program.

Policies
For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Courses taken for the Computational Modeling certificate can count toward a master’s degree in operations research or statistics or a PhD in computational sciences and informatics (p. 679). One must be concurrently enrolled in the program for courses to count toward the certificate and the other degree.

Requirements
Total credits: 12-15
This certificate may be pursued on a part-time basis only.

Certificate Requirements
Students must complete all requirements within a concentration.

Concentration in Computational Modeling (CCM)
Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 635</td>
<td>Discrete System Simulation</td>
<td>3</td>
</tr>
<tr>
<td>OR 682</td>
<td>Computational Methods in Engineering and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 685</td>
<td>Numerical Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>
Select one from the following Electives: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 744</td>
<td>Linear and Nonlinear Modeling in the Natural Sciences</td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
</tr>
<tr>
<td>SYST 611</td>
<td>System Methodology and Modeling</td>
</tr>
<tr>
<td>SYST 683</td>
<td>Modeling, Simulation, and Gaming</td>
</tr>
<tr>
<td>ECE 521</td>
<td>Linear Systems and Control</td>
</tr>
<tr>
<td>MATH 673</td>
<td>Dynamical Systems</td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Military Operations Research (MOR)
Certificate candidates must complete five courses, with an average grade of B or better, for a total of 15 graduate credits.

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 635</td>
<td>Discrete System Simulation</td>
<td>3</td>
</tr>
<tr>
<td>OR 651</td>
<td>Military Operations Research I: Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>OR 652</td>
<td>Military Operations Research Modeling II: Effectiveness Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SYST 683</td>
<td>Modeling, Simulation, and Gaming</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 15

Concentration in Predictive Data Analytics (PDA)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 568</td>
<td>Applied Predictive Analytics</td>
<td>3</td>
</tr>
</tbody>
</table>
One from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
</tr>
<tr>
<td>OR 604</td>
<td>Practical Optimization</td>
</tr>
<tr>
<td>OR 635</td>
<td>Discrete System Simulation</td>
</tr>
</tbody>
</table>
One from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
</tr>
</tbody>
</table>

Total Credits 12

Operations Research, MS
Banner Code: VS-MS-OPRS

Academic Advising
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu
Website: seor.gmu.edu/grad.html

The MS prepares students for research and professional practice associated with the formulation and analysis of mathematical models for decision making and their computer implementation. Major components include optimization, queuing and network modeling, computer simulation and modeling, applied and computational probability, and application of these components to realistic and relevant operational analysis problems. Students are expected to become proficient in these areas, as well as in supporting areas of information technology necessary to implement operations research methods.

The program includes core courses and electives selected by the student with the aid of a faculty advisor. To obtain the MS degree, students complete an approved plan of study that contains a minimum of 30 graduate credits. Students may take courses through the Commonwealth Graduate Engineering Program. Appropriate courses may be transferred, with advisor approval, into this Mason degree program.
Admissions & Policies

Admissions
To be admitted to the program, students must hold a baccalaureate degree from an accredited institution in engineering, mathematics, computer science, physical sciences, economics, or a related field. They also must have completed courses in:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
</tbody>
</table>

Matrix Algebra
MATH 203 Linear Algebra 3

Differential Equations
MATH 214 Elementary Differential Equations 3

Applied Probability and Statistics
STAT 346 Probability for Engineers 3

Scientific Programming Language
CS 112 Introduction to Computer Programming (Mason Core) (p. 142) 4

Specific application deadlines and requirements (https://admissions.gmu.edu/grad/application-deadlines-and-requirements/?academicUnit=VS&_ga=1.107632321.273102085.1480697294) are available through the Office of Graduate Admissions.

Requirements

Degree Requirements
Total credits: 30

Students must complete four core courses and the project (15 credits). The remaining 15 credits are electives subject to the requirements below, and can be taken in one of five concentration areas or in an individual plan approved by the student’s advisor.

Required Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 658</td>
<td>Applied Predictive Analytics</td>
<td>3</td>
</tr>
<tr>
<td>OR 635</td>
<td>Discrete System Simulation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Project

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 699</td>
<td>Masters Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

Methods Courses

Code Title Credits
Select at least one deterministic methods and one stochastic methods course: 6

| Deterministic Methods Courses: |
| Code | Title | |
| OR 641 | Linear Programming | |
| OR 642 | Integer Programming | |
| OR 643 | Network Modeling | |
| OR 644 | Nonlinear Programming | |
| OR 670 | Metaheuristics for Optimization | |

| Stochastic Methods Courses: |
| Code | Title | |
| OR 645 | Stochastic Processes | |
| OR 647 | Queuing Theory | |
| OR 674 | Dynamic Programming | |
| OR 675 | Reliability Analysis | |
| SYST 664 | Bayesian Inference and Decision Theory | |

Total Credits 6

Additional Electives

Code Title Credits
Select up to three additional electives from the list of allowable electives with written concurrence of the advisor 9

| Additional Electives: |
| Code | Title | |
| | | |

Total Credits 9

1 At least two of these electives must be taken from SEOR course offerings, and one of these must be OR 600-level or higher. The remaining course should be taken in an area appropriate to the student’s interests, such as operations research, systems engineering, computer science, information systems, statistics, data analytics, electrical and computer engineering, economics, mathematics or supply chain management. The allowable elective for MS students includes:

A. Within VSE:
- Any OR course ≥600 (p. 2024)
- Any SYST course > 500 (p. 2232)
- Any STAT course ≥ 554 (p. 2220)
- Any CS course ≥ 500 (p. 1468)
- Any ECE course> 500 but not 528 (p. 1611)
- Any CEIE course > 500 but not 601 (p. 1383)

B. External to VSE (subject to approval by the Department Chair):
- Any MATH course > 601 and permitted for Math majors (p. 1923);
- Any CSI course > 610 (p. 1436)
- Any ECON course ≥ 611 (p. 1564)

Concentrations

Students may construct concentration areas by choosing electives from among special groupings. The six concentrations available are data analytics, decision analysis, financial engineering, military operations research, optimization, and stochastic modeling. In addition to the required core courses (12 credits) and project course (3 credits), the remaining 15 credit hours consist of methods and elective courses associated with the concentration areas as outlined below. Students can also devise their own grouping of electives subject to prior approval of their advisor.
**Available Concentrations**

- Concentration in Data Analytics (DNIC) (p. 1155)
- Concentration in Decision Analysis (DA) (p. 1155)
- Concentration in Financial Engineering (FNNE) (p. 1155)
- Concentration in Military Operations Research (MOR) (p. 1155)
- Concentration in Optimization (OPT) (p. 1155)
- Concentration in Stochastic Models (STM) (p. 1155)

**Concentration in Data Analytics (DNIC)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
<td>3</td>
</tr>
<tr>
<td>One deterministic methods course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>One stochastics methods course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>and two courses from the following list:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>OR 604</td>
<td>Practical Optimization</td>
<td></td>
</tr>
<tr>
<td>OR 670</td>
<td>Metaheuristics for Optimization</td>
<td></td>
</tr>
<tr>
<td>STAT 663</td>
<td>Statistical Graphics and Data Exploration I</td>
<td></td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

**Concentration in Decision Analysis (DA)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 671</td>
<td>Judgment and Choice Processing and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>OR 681</td>
<td>Decision and Risk Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td>3</td>
</tr>
<tr>
<td>Select one deterministic methods course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select one stochastics methods course</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

**Concentration in Financial Engineering (FNNE)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 588</td>
<td>Financial Systems Engineering I: Introduction to Options, Futures, and Derivatives</td>
<td>3</td>
</tr>
<tr>
<td>OR 688</td>
<td>Financial Systems Engineering II: Derivative Products and Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OR 538</td>
<td>Analytics for Financial Engineering and Econometrics</td>
<td></td>
</tr>
<tr>
<td>OR 645</td>
<td>Stochastic Processes</td>
<td></td>
</tr>
<tr>
<td>OR 671</td>
<td>Judgment and Choice Processing and Decision Making</td>
<td></td>
</tr>
<tr>
<td>OR 681</td>
<td>Decision and Risk Analysis</td>
<td></td>
</tr>
<tr>
<td>OR 682</td>
<td>Computational Methods in Engineering and Statistics</td>
<td></td>
</tr>
<tr>
<td>Students must also complete:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>One deterministic methods course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One stochastics methods course</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

**Concentration in Military Operations Research (MOR)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 651</td>
<td>Military Operations Research I: Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>OR 652</td>
<td>Military Operations Research Modeling II: Effectiveness Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SYST 683</td>
<td>Modeling, Simulation, and Gaming</td>
<td>3</td>
</tr>
<tr>
<td>One deterministic methods course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>One stochastics methods course</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

**Concentration in Optimization (OPT)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three courses from the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>OR 604</td>
<td>Practical Optimization</td>
<td></td>
</tr>
<tr>
<td>OR 641</td>
<td>Linear Programming</td>
<td></td>
</tr>
<tr>
<td>OR 642</td>
<td>Integer Programming</td>
<td></td>
</tr>
<tr>
<td>OR 643</td>
<td>Network Modeling</td>
<td></td>
</tr>
<tr>
<td>OR 644</td>
<td>Nonlinear Programming</td>
<td></td>
</tr>
<tr>
<td>OR 646</td>
<td>Stochastic Optimization</td>
<td></td>
</tr>
<tr>
<td>OR 670</td>
<td>Metaheuristics for Optimization</td>
<td></td>
</tr>
<tr>
<td>OR 682</td>
<td>Computational Methods in Engineering and Statistics</td>
<td></td>
</tr>
<tr>
<td>Students must also complete:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>One stochastic methods course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One elective course with written concurrence of the student’s advisor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

**Concentration in Stochastic Models (STM)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three courses from the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>OR 645</td>
<td>Stochastic Processes</td>
<td></td>
</tr>
<tr>
<td>OR 647</td>
<td>Queuing Theory</td>
<td></td>
</tr>
<tr>
<td>OR 674</td>
<td>Dynamic Programming</td>
<td></td>
</tr>
<tr>
<td>OR 719</td>
<td>Graphical Models for Inference and Decision Making</td>
<td></td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td></td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td></td>
</tr>
<tr>
<td>or STAT 663</td>
<td>Statistical Graphics and Data Exploration I</td>
<td></td>
</tr>
<tr>
<td>Select must also complete:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>One deterministic methods course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One elective course with written concurrence of the student’s advisor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15

1 If the student has already taken OR 645 Stochastic Processes this can be substituted for an elective course with written concurrence of the student’s advisor.
Dual Degree Options

Operations Research and Statistical Science Dual-Degree MS

This program allows students to earn an MS in Operations Research (p. 1153) and an MS in Statistical Science (p. 1141) by completing 48 credits of coursework in both areas instead of the 60 that would be required if the degrees were sought independently.

Admission Requirements

Applicants must satisfy admission requirements for the MS in Operations Research (p. 1153) Program and the MS in Statistical Science (p. 1141) Program. A joint faculty committee from the Statistics and Systems Engineering and Operations Research Departments make final admission decisions into the dual-degree program.

MS-OPRS/STAT Dual Degree Requirements

Total credits: 48

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td>3</td>
</tr>
<tr>
<td>OR 635</td>
<td>Discrete System Simulation</td>
<td>3</td>
</tr>
<tr>
<td>OR 699</td>
<td>Masters Project</td>
<td>3</td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 634</td>
<td>Case Studies in Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 652</td>
<td>Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>STAT 654</td>
<td>Applied Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>27</td>
</tr>
</tbody>
</table>

Elective Credits in OR Courses

Select 12 elective credits in OR courses at the 600 level, including at least one deterministic methods course and at least one stochastic methods course:

Deterministic Methods Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 641</td>
<td>Linear Programming</td>
</tr>
<tr>
<td>OR 642</td>
<td>Integer Programming</td>
</tr>
<tr>
<td>OR 643</td>
<td>Network Modeling</td>
</tr>
<tr>
<td>OR 644</td>
<td>Nonlinear Programming</td>
</tr>
</tbody>
</table>

Stochastic Methods Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 645</td>
<td>Stochastic Processes</td>
</tr>
<tr>
<td>OR 647</td>
<td>Queuing Theory</td>
</tr>
<tr>
<td>OR 674</td>
<td>Dynamic Programming</td>
</tr>
<tr>
<td>OR 675</td>
<td>Reliability Analysis</td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
</tr>
</tbody>
</table>

Total Credits: 12

Elective Credits in STAT Courses

Select 9 elective credits from any STAT courses numbered 540-775

Total Credits: 9

Notes

- Students currently enrolled in one of the MS programs must declare pursuit of the dual MS within one year of matriculation into the first MS program.
- A maximum of 6 credits across the two disciplines may be in independent research (thesis). The requirements for independent research are the same as detailed for the associated MS program.
- Students in either the BS (selected)/Operations Research, Accelerated MS program (p. 1156) or the BS (selected)/Statistical Science, Accelerated MS program (p. 1144) cannot get a reduction of 6 credits toward this dual degree. Students who want to proceed to a PhD degree will only be able to waive the number of credits specified in the associated PhD degree requirements, even though they will have 48 credits at the MS level.
- If a student decides not to complete the required 48 credits, a single MS degree will not be granted unless the student fulfills the requirements for the MS in Operations Research (p. 1153) or the MS in Statistical Science (p. 1141).
- Once a student receives one of the MS degrees from either department, the student will no longer be eligible for the reduction in credit (i.e., will need to complete 30 credits) if the student later decides to earn the other MS degree.

Accelerated Master’s

Bioengineering, BS/Operations Research, Accelerated MS

Overview

Highly-qualified students in the Bioengineering, BS (p. 1032) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in Bioengineering, BS (p. 1032) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may chose the graduate version
of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Civil and Infrastructure Engineering, BS/Operations Research, Accelerated MS
Overview
Highly-qualified students in the Civil and Infrastructure Engineering, BS (p. 1177) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Civil and Infrastructure Engineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Students must additionally complete MATH 203 Linear Algebra prior to applying for the graduate program.

Accelerated Options Requirement
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credit hours) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such electives to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Cyber Security Engineering, BS/Operations Research, Accelerated MS
Overview
Highly-qualified students in the Cyber Security Engineering, BS (p. 1016) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Cyber Security Engineering, BS (p. 1016) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Accelerated Options Requirement
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credit hours) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such electives to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Mechanical Engineering, BS/Operations Research, Accelerated MS
Overview
Highly-qualified students in the Mechanical Engineering, BS (p. 1177) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Mechanical Engineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.
Students must additionally complete MATH 203 Linear Algebra prior to applying for the graduate program.

**Accelerated Options Requirement**

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Statistics, BS/Operations Research, Accelerated MS**

**Overview**

Highly-qualified students in the Statistics, BS (p. 1146) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**

Mason undergraduate students majoring in Statistics, BS (p. 1146) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS program (p. 1153).

**Accelerated Options Requirement**

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credit hours) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such electives to replace the corresponding undergraduate courses.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Systems Engineering BS/Operations Research, Accelerated MS**

**Overview**

Qualified undergraduate students may apply for a five-year accelerated BS/MS program leading to a Bachelor of Science in Systems Engineering (p. 1164) and an MS degree in Operations Research (p. 1153).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Mason undergraduate students majoring in systems engineering may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS program (p. 1153).

**Accelerated Option Requirements**

Up to two courses (six credit hours) of master’s level courses may be applied to both the undergraduate and the graduate degrees. These two courses may be chosen from the list of graduate courses in the following table. For Systems Engineering, BS students, these graduate courses replace the corresponding undergraduate courses listed in the table. The undergraduate version of these courses may not be applied toward the Operations Research, MS.

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Credit may not be received for both courses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 420</td>
<td>SYST 521/OR 643</td>
<td></td>
</tr>
<tr>
<td>SYST 473</td>
<td>SYST 573</td>
<td></td>
</tr>
<tr>
<td>OR 441</td>
<td>OR 541</td>
<td></td>
</tr>
<tr>
<td>OR 442</td>
<td>OR 542</td>
<td></td>
</tr>
<tr>
<td>SYST 438</td>
<td>SYST 538</td>
<td></td>
</tr>
<tr>
<td>SYST 468</td>
<td>SYST 568</td>
<td>These courses apply only to certain concentrations in the graduate program; credit may not be received for both courses.</td>
</tr>
</tbody>
</table>

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).
SYST 488 SYST 588 These courses apply only to certain concentrations in the graduate program; credit may not be received for both courses.

Any other 500-level course may be applied to both the undergraduate and graduate degrees with approval of the advisor and SEOR department chair.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master's degree is conferred.

BS (selected)/Operations Research, Accelerated MS

Overview

Highly-qualified students in BS programs have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in both engineering and non-engineering disciplines may apply to this option if 1) such an accelerated Operations Research, MS (p. 1153) pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs and by the SEOR department chair, 2) they have earned 90 undergraduate credits with an overall GPA of at least 3.30, and 3) they have completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Students must additionally complete MATH 203 prior to applying for the graduate program.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair.

For the BS programs that allow undergraduate electives from the department of systems engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

Systems Engineering Graduate Certificate (SEOR)

Banner Code: VS-CERG-SYST

Architecture-Based Systems Integration
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu

C4I & Cyber
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu

Communications and Networking
3100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1569
Email: ece@gmu.edu

Engineering Resilient Enterprise Systems
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu

Financial Systems Engineering
2100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu

Tactical Computer Operations
3100 Nguyen Engineering Building
Fairfax Campus
Phone: 703-993-1569
Email: ece@gmu.edu

Admissions & Policies

Admissions

Architecture-Based Systems Integration Concentration
A bachelor's degree is required for admission to a certificate program.

C4I & Cyber Concentration
The certificate with this concentration is available to students who hold bachelor's degrees in engineering and scientific disciplines or are in graduate status in such programs. Admission requirements are identical to those for the Systems Engineering, MS (p. 1170).
Communications and Networking Concentration
The certificate with this concentration in communications and networking is open to all students who hold BS degrees in scientific and engineering disciplines from accredited universities.

Engineering Resilient Enterprise Systems Concentration
The certificate with this concentration is available to any student who holds a bachelor's degree in an engineering or scientific discipline or has graduate status in such a program. Admission requirements are identical to those for the Systems Engineering, MS (p. 1170), except that the math requirements include only MATH 113 Analytic Geometry and Calculus I (Mason Core) (p. 142), MATH 114 Analytic Geometry and Calculus II, and a probability and statistics course.

Financial Systems Concentration
The certificate with this concentration will be open to all students who hold a BS degree in scientific and engineering disciplines from an accredited university program, with a GPA minimum established by VSE for all MS programs. Students who are already enrolled in a master's program must submit an application form to enroll in this certificate with concentration program; all others must apply for graduate admission to this certificate with concentration program.

Tactical Computer Operations Concentration
Students applying to the certificate with this concentration must hold a bachelor's degree in either computer science or computer engineering. Prospective students without these specific degrees will need to have a technical bachelor's degree and show academic competence in the areas of: C (C++, C#, Objective C), Assembler, discrete mathematics, and computer networking. An undergraduate grade point average (GPA) of 3.0 or better (4.0 scale) is required. The Graduate Record Exam (GRE) is not required.

Policies
The Systems Engineering Graduate Certificate may be pursued on a part-time basis only.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates (p. 94).

Requirements
Certificate Requirements
Total credits: 12-15
This certificate may be pursued on a part-time basis only.

Concentration in Architecture-Based Systems Integration (ABSI)
Administered by the Department of Systems Engineering and Operations Research (https://seor.gmu.edu)

Coursework
The following four courses must be completed with a grade of B or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 520</td>
<td>System Engineering Design</td>
<td>3</td>
</tr>
<tr>
<td>SYST 618</td>
<td>Model-based Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 620</td>
<td>Discrete Event Systems</td>
<td>3</td>
</tr>
<tr>
<td>SYST 621</td>
<td>Systems Architecture Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Certificate coursework within the Systems Engineering MS
In addition to the ABSI concentration courses, students must take the following six courses within the Systems Engineering, MS (p. 1170):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 505</td>
<td>Systems Engineering Principles</td>
<td>3</td>
</tr>
<tr>
<td>SYST 510</td>
<td>Systems Definition and Cost Modeling</td>
<td>3</td>
</tr>
<tr>
<td>SYST 530</td>
<td>Systems Engineering Management I</td>
<td>3</td>
</tr>
<tr>
<td>SYST 611</td>
<td>System Methodology and Modeling</td>
<td>3</td>
</tr>
<tr>
<td>SYST 699</td>
<td>Masters Project</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one approved elective from the ABSI concentration</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 18

1 Students who have work experience in systems engineering should consult with their advisor on replacing SYST 505 Systems Engineering Principles with a higher-level SYST course.

Concentration in C4I & Cyber (C4IC)
Administered by the Department of Systems Engineering and Operations Research (https://seor.gmu.edu)

This certificate with concentration may be pursued on a part-time basis only.

The certificate with concentration requires 12 credits (4 courses). Students must complete the following with an average grade of B or better:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 680</td>
<td>Principles of Command, Control, Communications, Computing, and Intelligence (C4I)</td>
<td>3</td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td>3</td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td></td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>ECE 642</td>
<td>Design and Analysis of Computer Communication Networks</td>
<td></td>
</tr>
<tr>
<td>OR 635</td>
<td>Discrete System Simulation</td>
<td></td>
</tr>
<tr>
<td>SYST 584</td>
<td>Heterogeneous Data Fusion</td>
<td></td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td></td>
</tr>
<tr>
<td>SYST 683</td>
<td>Modeling, Simulation, and Gaming</td>
<td></td>
</tr>
</tbody>
</table>

Select two from the following:

Total Credits 12

Completing the certificate with the C4I concentration within the Systems Engineering Master's Program
In addition to the four courses above, students must complete the following six courses:
Concentration in Communications and Networking (CONE)

Administered by the Department of Electrical and Computer Engineering (https://ece.gmu.edu/welcome-gmu-ece-department).

The certificate with a concentration in Communications and Networking is awarded on completion of five graduate courses (15 credits) in communications and networking. A cumulative GPA of 3.00 is required and one course with a grade of C at most may be applied toward the certificate. The certificate courses comprise two required foundation courses and three electives.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

**Electives**

After completing the foundation courses, students choose electives by taking three courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 535</td>
<td>Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 565</td>
<td>Introduction to Optical Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 567</td>
<td>Optical Fiber Communications</td>
<td>3</td>
</tr>
<tr>
<td>ECE 630</td>
<td>Statistical Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 633</td>
<td>Error Control Coding</td>
<td>3</td>
</tr>
<tr>
<td>ECE 635</td>
<td>Adaptive Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 642</td>
<td>Design and Analysis of Computer Communication Networks</td>
<td>3</td>
</tr>
<tr>
<td>ECE 643</td>
<td>Network Switching and Routing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 646</td>
<td>Applied Cryptography</td>
<td>3</td>
</tr>
<tr>
<td>ECE 731</td>
<td>Digital Communications</td>
<td>3</td>
</tr>
<tr>
<td>ECE 732</td>
<td>Mobile Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 734</td>
<td>Detection and Estimation Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 738</td>
<td>Advanced Digital Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 741</td>
<td>Wireless Networks</td>
<td>3</td>
</tr>
<tr>
<td>ECE 742</td>
<td>High-Speed Networks</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>INFS 612</td>
<td>Principles and Practices of Communication Networks</td>
<td>3</td>
</tr>
<tr>
<td>OR 647</td>
<td>Queuing Theory</td>
<td>9</td>
</tr>
</tbody>
</table>

Total Credits 18

Concentration in Engineering Resilient Enterprise Systems (ERES)

Administered by the Department of Systems Engineering and Operations Research (https://seor.gmu.edu).

To be eligible for a certificate with concentration in Engineering Resilient Enterprise Systems, students must complete two required courses (6 credits) plus two electives (6 credits) with an average grade of B or better.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 523</td>
<td>Engineering Resilient and Agile Enterprise Systems</td>
<td>3</td>
</tr>
<tr>
<td>SYST 618</td>
<td>Model-based Systems Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

**Electives**

The remaining two electives must be taken from the list below with the approval of the advisor. Courses designated as basic methods courses may also be used as an elective. Some certificate electives may require stronger math requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 514</td>
<td>Systems Thinking</td>
<td>3</td>
</tr>
<tr>
<td>INFS 622</td>
<td>Information Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td>3</td>
</tr>
<tr>
<td>SYST 542</td>
<td>Decision Support Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 584</td>
<td>Heterogeneous Data Fusion</td>
<td>3</td>
</tr>
<tr>
<td>SYST 630</td>
<td>Systems Engineering Management II</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>ECE 542</td>
<td>Computer Network Architectures and Protocols</td>
<td>3</td>
</tr>
<tr>
<td>INFS 612</td>
<td>Principles and Practices of Communication Networks</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Concentration in Financial Systems (FNSY)

Administered by the Department of Systems Engineering and Operations Research (https://seor.gmu.edu).

To be eligible for the certificate with concentration in Financial Systems Engineering, students must complete three required courses (9 credits) plus one elective (3 credits) with an average grade of B or better.

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST/OR 538</td>
<td>Analytics for Financial Engineering and Econometrics</td>
<td>3</td>
</tr>
</tbody>
</table>
This doctoral program offers a unique integration of systems engineering and operations research. This integration gives students a strong analytical and computational capability on the one hand and an overarching systems perspective that is well-grounded in application on the other. No other department in the nation offers a PhD degree program that covers systems engineering and operations research in this integrated manner. The program prepares students for leadership positions in research and development in government, industry, research organization, and academia.

### Admissions & Policies

#### Admissions

All general Mason and specific Volgenau School admissions requirements apply. Candidates for the PhD program typically must hold an MS degree from an accredited institution of higher education in systems engineering, operations research or related areas in engineering, mathematics, and computer science with a minimum graduate GPA of 3.50 and a minimum undergraduate GPA of 3.00. In addition, well-qualified candidates holding a BS degree in these areas may apply directly to the PhD program.

All applicants should have a strong background in engineering mathematics, which includes three semesters of calculus, differential equations, linear algebra, and probability. In addition, students entering the doctoral program must have a sound working knowledge in computing.

The admission process involves submitting the application for admission, undergraduate and graduate transcripts from previous colleges and universities attended, GRE test results, three letters of reference, a résumé and a statement of career goals and aspirations, and a self-assessment of past background. Translations of international credentials must be provided, if they are not in English; in some cases, applicants will be required to have documents evaluated by an external agency. A satisfactory score on the TOEFL examination is required for non-native English speakers. All of an applicant’s background is examined before an admission decision is made.

#### Policies

**Program Requirements**

The program includes: course requirements; a qualifying exam that tests fundamental concepts in systems engineering and operations research; a comprehensive exam that tests the research competency of the student; dissertation proposal defense; dissertation research; and dissertation predefense and defense. All general Mason and specific Volgenau School requirements apply to this program.

PhD dissertations are extremely time intensive, and successful completion requires full time focus. It is expected that students who have reached candidacy (that is, successfully presented their dissertation proposal) will spend full time on their research for at least one academic year.
year and will attend the majority of the SEOR departmental seminars throughout that period.

Reduction of Credit
The doctoral program is a 72 credit hour program; however, students entering with a Master’s degree in a related discipline will be given a reduction of credit up to 24 hours. Reduction of credit requires the approval of the program director or designee and the dean or designee of the school. They determine whether the credits are eligible for reduction of credit and applicable to the degree program and the number of credits to be reduced.

The 72 hours of required doctoral-level credits typically consist of 48 credits of coursework and 24 credits of dissertation research. Students who receive a reduction of credit will complete a minimum of 48 credits as outlined in Degree Requirements; students entering without an MS will need at least 24 additional credits of coursework.

All decisions concerning the student's course requirements and plan of study must be approved by the dissertation committee chair, as well as by the department's doctoral coordinator.

Requirements

Degree Requirements
Total credits: 72

Doctoral Coursework
A GPA of 3.50 is required, and no grade of C is allowed in these 24 credits. Students lacking prerequisites for their courses or lacking the coursework to complete the qualifying exams or their dissertation may be required to take additional courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 568</td>
<td>Applied Predictive Analytics</td>
<td>3</td>
</tr>
<tr>
<td>SYST 763</td>
<td>Research Methods in Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 2248)</td>
<td></td>
</tr>
<tr>
<td>Select 12 credits of 700-level SEOR approved courses</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Select 6 credits in SYST or OR courses numbered 600 or higher</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>SYST Courses (p. 2232)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR Courses (p. 2024)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

1 A list of approved courses is available from the department
2 No more than 3 credits are allowed for a directed reading course. All courses and course substitutions must be approved by the student’s dissertation committee chair and the SEOR doctoral coordinator.
3 Excluding SYST 699 Masters Project and OR 699 Masters Project

Additional Coursework Requirements
Students entering without a Master’s degree are required to complete an additional 24 credits of Master’s level courses, including the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 505</td>
<td>Systems Engineering Principles</td>
<td>3</td>
</tr>
<tr>
<td>SYST 520</td>
<td>System Engineering Design</td>
<td>3</td>
</tr>
</tbody>
</table>

OR 541 Operations Research: Deterministic Models 3
OR 542 Operations Research: Stochastic Models 3
Select 12 additional credits from one of two alternatives (systems engineering or operations research) 12

Total Credits 24

1 Consult the SEOR Department for the list of allowable courses.

Note
With appropriate selection of courses, students may obtain the MS degree in systems engineering or operations research by completing 6 additional credits, including 3 approved credits from the advanced emphasis courses (which may also apply towards the PhD degree advanced emphasis requirements) and 3 credits of either SYST 699 Masters Project or OR 699 Masters Project. Consult the SEOR Department for further detail. Credits taken in the courses SYST 699 Masters Project or OR 699 Masters Project may not be applied towards the PhD degree program requirements.

Qualifying Exams
The exams are primarily for testing the students’ familiarity with fundamental concepts. Each student must take the following four exams within two years of enrolling in the program:

• Systems Engineering Principles
• Systems Engineering Design
• Deterministic Models
• Stochastic Models

A student who passes three of the four exams in the first attempt must retake and pass the failed exam within one year. A student who passes fewer than three exams in the first attempt must retake and pass an entire set of four exams within one year. After two unsuccessful attempts, a student is dismissed from the PhD program.

Dissertation Research
Choose 24 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 24 credits from the following:</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>SEOR 998</td>
<td>Doctoral Dissertation Proposal</td>
<td></td>
</tr>
<tr>
<td>SEOR 999</td>
<td>Doctoral Dissertation (must complete a minimum of 12 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 24

Doctoral Supervisory Committee
Students should select a dissertation director and a doctoral supervisory committee as soon as possible. It is recommended that the committee be formed by the end of the second or third semester of study. The dissertation director must be a member of the SEOR graduate faculty or a member of the Mason graduate faculty with approval from the SEOR department chair. The doctoral supervisory committee must include at least three members from the SEOR department-approved graduate faculty, and at least one non-SEOR member from the Mason graduate faculty. The composition of the doctoral supervisory committee is to be approved by the doctoral coordinator. At least four members of the committee must be members of the Mason graduate faculty.
Comprehensive Exam
The comprehensive exam is taken after the student has satisfactorily completed all the advanced emphasis course work requirements in the approved plan of study filed by the student. The examiners will include the supervisory committee plus any outside examiners considered appropriate. However, the supervisory committee determines whether the student passes or not. The comprehensive exam consists of a written examination of 8 hours in length and an oral examination. The committee will determine if the student has a mastery of the advanced emphasis coursework. If a student fails the comprehensive exam, the student may request a re-examination within 60 days of receiving notice of the exam result. The request should be made in writing to the doctoral coordinator. If the student fails the re-examination or does not request a re-examination within 60 days, the student will be dismissed from the PhD program. In such a case, with recommendation of the supervisory committee and approval of the SEOR Chair, the student may apply his/her coursework towards a Master’s degree.

Dissertation Proposal
After passing the comprehensive exam, each doctoral student prepares a written dissertation proposal, which is presented to the doctoral supervisory committee. After successfully completing this requirement, the student is formally admitted as a candidate for the PhD degree.

Dissertation Defense
When the central portions of the research have been completed to the point where the student is able to describe the original contributions of the dissertation effort, a candidate submits the written dissertation to the supervisory committee and schedules an oral predefense with the committee. The predefense is attended by the supervisory committee. The supervisory committee must approve the work or the student must schedule a second predefense.

Once the committee believes the student is ready, a final public oral defense may be scheduled no sooner than one month after the conclusion of the predefense, with an announcement posted for at least two weeks. The defense must be attended by the supervisory committee and the department’s doctoral coordinator, unless an exception has been approved in advance by the doctoral coordinator. Following a satisfactory evaluation of the oral defense of the dissertation by the supervisory committee, the student must prepare, with supervision from the dissertation director, a final publishable dissertation that represents a definitive contribution to knowledge in systems engineering and operations research. This document must meet format guidelines specified by the Guide for Preparing Graduate Theses, Dissertations, and Projects. If the student fails to successfully defend the dissertation, the student may request a second defense, following the same procedures as for the initial defense. There is no time limit for this request, other than the general time limits for the doctoral degree. An additional predefense is not required, but the student is strongly advised to consult with the committee before scheduling a second defense. If the student fails on the second attempt to defend the dissertation, the student will be dismissed from the PhD program.

Systems Engineering, BS
Banner Code: VS-BS-SYST
Academic Advising
2100 Nguyen Engineering Building

Fairfax Campus
Phone: 703-993-1670
Email: seor@gmu.edu
Website: http://seor.gmu.edu/undergrad.html

The program leading to the BS in Systems Engineering prepares students for a professional career in systems engineering. The program reflects the systems engineer’s unique perspective, which considers all aspects of a system throughout its lifetime. Mason’s systems engineering program is interdisciplinary, drawing from engineering, computer science, operations research, psychology, and economics. The core systems engineering courses tie these diverse threads to provide a global understanding of how individual engineering disciplines fit into the development of complex, large-scale systems. Students gain depth in a technical area by selecting a sequence of technical electives that constitute an emphasis. Students choose their own emphasis with the help of their advisor. A year-long senior design project provides hands-on experience in applying various systems engineering methods and tools. In the first two years, students obtain a basic foundation in mathematics, natural sciences, computing, writing, humanities, arts, and social sciences. The systems engineering program builds on this foundation, teaching theoretical knowledge, practical skills, and the ability to apply systems thinking to problems. Teamwork, collaborative learning, analytical skills, practical problem solving, and oral and written communication are strongly stressed.

Mission
The mission of the undergraduate program is to equip students with the ability to participate productively in the many professional activities associated with engineering a trustworthy system that satisfies client needs. The term “system” is interpreted broadly to include information, telecommunication, defense, health delivery, transportation, energy or manufacturing systems, as well as corporate processes.

Objectives
The program educational objectives of the Systems Engineering program are what we expect our students to attain within three to five years of graduation. Graduates earning the Bachelor of Science degree in Systems Engineering at George Mason University will:

- Use critical thinking, quantitative methods, and systems thinking to contribute to solutions for global societal challenges.
- Apply systems engineering methods, processes, models and tools to the engineering of complex systems.
- Advance the objectives of their organizations, profession, and society in a rapidly changing world.

Accreditation
The bachelor’s program in Systems Engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. The requirements for the degree may be satisfied through part-time enrollment.

Admissions & Policies

Policies
Change of Major
See Change of Major (p. 1013) for more information.
Grade Requirements

Students in the Systems Engineering, BS program must complete all mathematics, science, and VSE courses with a grade of C or better.

Termination from the Major

No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP.5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

Requirements

Degree Requirements

Total credits: 123

Mathematics and Statistics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td>3</td>
</tr>
</tbody>
</table>

Natural Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160 &amp; PHYS 161</td>
<td>University Physics I (Mason Core) (p. 142) and University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 260 &amp; PHYS 261</td>
<td>University Physics II (Mason Core) (p. 142) and University Physics II Laboratory (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>Select 4 credits from the following:</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>PHYS 262 &amp; PHYS 263</td>
<td>University Physics III (Mason Core) (p. 142) and University Physics III Laboratory (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 211 &amp; CHEM 213</td>
<td>General Chemistry I (Mason Core) (p. 142) and General Chemistry Laboratory I (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 271 &amp; CHEM 272</td>
<td>General Chemistry for Engineers Lecture (Mason Core) (p. 142) and General Chemistry for Engineers Lab (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 12

Computing

Select from options below:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>or CS 112</td>
<td>Introduction to Computer Programming (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>and</td>
<td>SYST 230 Object-oriented Modeling and Design (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>or CS 211</td>
<td>Object-Oriented Programming</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 7
### Communication and Economics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 6

### Systems Engineering

Students must complete each of these courses with a grade of C or better.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 101</td>
<td>Understanding Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 210</td>
<td>Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>SYST 220</td>
<td>Dynamical Systems I</td>
<td>3</td>
</tr>
<tr>
<td>SYST 221</td>
<td>Systems Modeling Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>SYST 320</td>
<td>Dynamical Systems II</td>
<td>3</td>
</tr>
<tr>
<td>SYST 330</td>
<td>Systems Methods</td>
<td>3</td>
</tr>
<tr>
<td>SYST 335</td>
<td>Discrete Systems Modeling and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>SYST 371</td>
<td>Systems Engineering Management</td>
<td>3</td>
</tr>
<tr>
<td>SYST 395</td>
<td>Applied Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 470</td>
<td>Human Factors Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 473</td>
<td>Decision and Risk Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SYST 489</td>
<td>Senior Seminar</td>
<td>3</td>
</tr>
<tr>
<td>SYST 490</td>
<td>Senior Design Project I</td>
<td>3</td>
</tr>
<tr>
<td>SYST 495</td>
<td>Senior Design Project II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>OR 441</td>
<td>Deterministic Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>OR 442</td>
<td>Stochastic Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>Select 3 approved technical electives selected from one of the Technical Emphasis Areas below</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 55

### Additional Mason Core

Students must complete all Mason Core (p. 142) requirements not fulfilled by major requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 100</td>
<td>Composition for Multilingual Writers (Mason Core) (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td>or ENGH 101</td>
<td>Composition (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>ENGH 302</td>
<td>Advanced Composition (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>Literature (p. 147)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts (p. 144)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 9

### Technical Emphasis Areas

The systems engineering program requires 9 credits of technical electives. Students must select one of the following technical emphases, each containing three courses. Students must complete each of these courses with a grade of C or better.

#### Aviation Systems

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 420</td>
<td>Network Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SYST 460</td>
<td>Introduction to Air Traffic Control</td>
<td>3</td>
</tr>
<tr>
<td>SYST 461</td>
<td>Air Transportation System Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 9

#### Bioengineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENG 313</td>
<td>Physiology for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>Select two from the following:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>BENG 304</td>
<td>Modeling and Control of Physiological Systems</td>
<td></td>
</tr>
<tr>
<td>BENG 406</td>
<td>Introduction to Biomechanics</td>
<td></td>
</tr>
<tr>
<td>BENG 420</td>
<td>Biomedical Data Analytics</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 9

#### Control Systems

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 201</td>
<td>Introduction to Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 220</td>
<td>Continuous-Time Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>SYST 421</td>
<td>Classical Systems and Control Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 9

#### Computer Network Systems

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 420</td>
<td>Network Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECE 465</td>
<td>Computer Networking Protocols</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 9

#### Data Analytics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 468</td>
<td>Applied Predictive Analytics</td>
<td>3</td>
</tr>
<tr>
<td>IT 214</td>
<td>Database Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>STAT 463</td>
<td>Introduction to Exploratory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>or SYST 438</td>
<td>Analytics for Financial Engineering and Econometrics</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 9

#### Environmental Engineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 240</td>
<td>Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 355</td>
<td>Environmental Engineering and Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 9
CEIE 450  Environmental Engineering Systems 3
or CEIE 453  Water and Wastewater Treatment Processes 3

Total Credits 9

Financial Engineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 438</td>
<td>Analytics for Financial Engineering and Econometrics</td>
<td>3</td>
</tr>
</tbody>
</table>

SYST 488  Financial Systems Engineering 3
And choose one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 463</td>
<td>Introduction to Exploratory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 455</td>
<td>Experimental Design</td>
<td></td>
</tr>
<tr>
<td>SYST 468</td>
<td>Applied Predictive Analytics</td>
<td></td>
</tr>
<tr>
<td>MBUS 304</td>
<td>Entrepreneurship: Starting and Managing a New Enterprise</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Mechanical Engineering

Select one of the following options:

Option 1: Mechanical Design

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 211</td>
<td>Statics</td>
<td></td>
</tr>
<tr>
<td>or CEIE 210</td>
<td>Statics</td>
<td></td>
</tr>
<tr>
<td>ME 212</td>
<td>Solid Mechanics</td>
<td></td>
</tr>
<tr>
<td>or CEIE 310</td>
<td>Mechanics of Materials</td>
<td></td>
</tr>
<tr>
<td>ME 341</td>
<td>Design of Mechanical Elements</td>
<td></td>
</tr>
<tr>
<td>or ME 231</td>
<td>Dynamics</td>
<td></td>
</tr>
</tbody>
</table>

Option 2: Thermal Fluids

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 221</td>
<td>Thermodynamics</td>
<td></td>
</tr>
<tr>
<td>ME 322</td>
<td>Fluid Mechanics</td>
<td></td>
</tr>
<tr>
<td>ME 323</td>
<td>Heat Transfer</td>
<td></td>
</tr>
<tr>
<td>or ME 342</td>
<td>Design of Thermal Systems</td>
<td></td>
</tr>
</tbody>
</table>

Some of the courses listed above have additional prerequisites. Students should pay careful attention to prerequisites when selecting courses.

Total Credits 9

Operations Research

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 481</td>
<td>Numerical Methods in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 420</td>
<td>Network Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SYST 468</td>
<td>Applied Predictive Analytics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Software-Intensive Systems

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 321</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CS 332</td>
<td>Object-Oriented Software Design and Implementation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9

Synthesis Requirement

Mason’s synthesis requirement for systems engineering majors is satisfied by successful completion of SYST 495 Senior Design Project II (Mason Core) (p. 142). Students who do not pass SYST 495 Senior Design Project II (Mason Core) (p. 142) with a C or better must retake both SYST 490 Senior Design Project I and SYST 495 Senior Design Project II (Mason Core) (p. 142).

Writing-Intensive Requirement

Mason’s writing-intensive requirement for systems engineering majors is satisfied by successful completion of SYST 489 Senior Seminar.

Advising and Plan of Study

All systems engineering students are assigned a faculty advisor. With the advisor’s help and approval, each student is required to complete a plan of study. This plan of study, which is available from the SEOR office, constitutes a learning plan for the degree program and must be signed by the student’s advisor and the Department Chair. The plan of study must be updated and signed by the advisor at least once per year.

Accelerated Master’s

BS (selected)/Statistical Science, Accelerated MS

Overview

Highly-qualified students in BS programs have the option of applying to the accelerated Statistical Science, MS (p. 1141) program.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

No specific undergraduate BS degree is required. Students enrolled in any BS degree may apply to the accelerated Statistical Science, MS (p. 1141) program if such an accelerated Statistical Science, MS pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs; and if they have earned 90 undergraduate credits with an overall GPA of 3.00. Students must have successfully completed the following Mason courses each with a grade of C or better prior to admission to the accelerated program:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 321</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td></td>
</tr>
<tr>
<td>STAT 346</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 351</td>
<td>Probability</td>
<td></td>
</tr>
<tr>
<td>STAT 362</td>
<td>Introduction to Computer Statistical Packages</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements

Students must complete all credits satisfying degree requirements for the BS and MS programs, with 6 credits overlap chosen from the following courses: STAT 515 Applied Statistics and Visualization for Analytics, STAT 544 Applied Probability, STAT 554 Applied Statistics I, STAT 560
Biostatistical Methods, and STAT 574 Survey Sampling I. (Credit may not be received for both STAT 474 and STAT 574; nor for both STAT 460 and STAT 560.) The graduate courses selected for overlap must be approved by the academic advisors of both the BS and MS programs. All graduate course prerequisites must be completed prior to enrollment. Each graduate course must be completed with a grade of B or better to apply toward the MS degree.

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree.

**Degree Conferral**
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master's degree is conferred.

**Systems Engineering, BS/Data Analytics Engineering, Accelerated MS**
Overview
Qualified undergraduate students in the Systems Engineering, BS (p. 1164) have the option of obtaining an accelerated Data Analytics Engineering, MS (p. 1019).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**
Mason undergraduate students majoring in systems engineering may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30.

For the predictive analytics concentration, students must submit evidence of:
- Satisfactory completion of courses in calculus, applied probability and statistics, and a scientific programming language.
- Familiarity with analytical modeling software, such as spreadsheets or math packages.

**Accelerated Option Requirements**
Students must complete all credits that satisfy requirements for the BS and MS programs, with six credits overlap chosen from the courses in the following table. For BS candidates, these graduate courses replace the corresponding undergraduate courses listed. The undergraduate version of these courses may not be applied toward the MS degree.

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Credit may not be received for both courses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 473</td>
<td>SYST 573</td>
<td></td>
</tr>
<tr>
<td>OR 441</td>
<td>OR 541</td>
<td></td>
</tr>
</tbody>
</table>

For the predictive analytics and financial engineering concentration, any other 500-level course may be applied to both the undergraduate and graduate degrees with approval of the advisor and SEOR department chair.

OR 541 Operations Research: Deterministic Models will substitute for the OR 531 Analytics and Decision Analysis core requirement in the MS DAE program. Students are not permitted to take OR 531 Analytics and Decision Analysis.

**Degree Conferral**
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

**Systems Engineering BS/Operations Research, Accelerated MS**
Overview
Qualified undergraduate students may apply for a five-year accelerated BS/MS program leading to a Bachelor of Science in Systems Engineering (p. 1164) and an MS degree in Operations Research (p. 1153).

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

**Admission Requirements**
Mason undergraduate students majoring in systems engineering may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS program (p. 1153).

**Accelerated Option Requirements**
Up to two courses (six credit hours) of master’s level courses may be applied to both the undergraduate and the graduate degrees. These two courses may be chosen from the list of graduate courses in the following table. For Systems Engineering, BS students, these graduate courses replace the corresponding undergraduate courses listed in the table. The
undergraduate version of these courses may not be applied toward the Operations Research, MS.

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Credit may not be received for both courses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 420</td>
<td>SYST 521/OR 643</td>
<td></td>
</tr>
<tr>
<td>SYST 473</td>
<td>SYST 573</td>
<td></td>
</tr>
<tr>
<td>OR 441</td>
<td>OR 541</td>
<td></td>
</tr>
<tr>
<td>OR 442</td>
<td>OR 542</td>
<td></td>
</tr>
<tr>
<td>SYST 438</td>
<td>SYST 538</td>
<td>These courses apply only to certain concentrations in the graduate program; credit may not be received for both courses.</td>
</tr>
<tr>
<td>SYST 468</td>
<td>SYST 568</td>
<td>These courses apply only to certain concentrations in the graduate program; credit may not be received for both courses.</td>
</tr>
<tr>
<td>SYST 488</td>
<td>SYST 588</td>
<td>These courses apply only to certain concentrations in the graduate program; credit may not be received for both courses.</td>
</tr>
</tbody>
</table>

Any other 500-level course may be applied to both the undergraduate and graduate degrees with approval of the advisor and SEOR department chair.

**Degree Conferral**

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master's degree is conferred.

**Systems Engineering BS/Systems Engineering, Accelerated MS**

**Overview**

Qualified undergraduate students may apply for a five-year accelerated BS/MS program leading to a Bachelor of Science in Systems Engineering (p. 1164) and an MS degree in Systems Engineering (p. 1170).

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Mason undergraduate students majoring in systems engineering may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS program.

**Accelerated Option Requirements**

Up to two courses (six credit hours) of master’s level courses may be applied to both the undergraduate and the graduate degrees. These two courses may be chosen from the list of graduate courses in the following table. For Systems Engineering, BS students, these graduate courses replace the corresponding undergraduate courses listed in the table. The undergraduate version of these courses may not be applied toward the Systems Engineering, MS.

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Credit may not be received for both courses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 420</td>
<td>SYST 521/OR 643</td>
<td></td>
</tr>
<tr>
<td>SYST 473</td>
<td>SYST 573</td>
<td></td>
</tr>
<tr>
<td>OR 441</td>
<td>OR 541</td>
<td></td>
</tr>
<tr>
<td>OR 442</td>
<td>OR 542</td>
<td></td>
</tr>
<tr>
<td>SYST 438</td>
<td>SYST 538</td>
<td>These courses apply only to certain concentrations in the graduate program; credit may not be received for both courses.</td>
</tr>
<tr>
<td>SYST 468</td>
<td>SYST 568</td>
<td>These courses apply only to certain concentrations in the graduate program; credit may not be received for both courses.</td>
</tr>
<tr>
<td>SYST 488</td>
<td>SYST 588</td>
<td>These courses apply only to certain concentrations in the graduate program; credit may not be received for both courses.</td>
</tr>
</tbody>
</table>

Any other 500-level course may be applied to both the undergraduate and graduate degrees with approval of the advisor and SEOR department chair.
Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master’s degree is conferred.

Systems Engineering, BS/Telecommunications, Accelerated MS
Overview
Highly-qualified students in the Systems Engineering, BS (p. 1164) have the option of obtaining an accelerated Telecommunications, MS (p. 1111).

For more detailed information, see AP 6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP 6 Graduate Policies (p. 90).

Admission Requirements
Students in the Systems Engineering, BS (p. 1164) program who preferably have chosen to take the systems engineering of telecommunications elective sequence may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Other students will be considered on their individual merit. Criteria for admission are identical to criteria for admission to the Telecommunications, MS (p. 1111) program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for the BS and MS programs, with 6 credits overlap selected from the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCOM 500</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>TCOM 530</td>
<td>Data Communications Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td>3</td>
</tr>
<tr>
<td>SYST 530</td>
<td>Systems Engineering Management I</td>
<td>3</td>
</tr>
<tr>
<td>SYST 573</td>
<td>Decision and Risk Analysis (if taken, replaces TCOM 521 in the telecommunications core requirements)</td>
<td>3</td>
</tr>
</tbody>
</table>

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Systems Engineering Minor
Banner Code: SYST

Academic Advising
2100 Nguyen Engineering Building

Admissions & Policies

Policies
For policies governing all minors, see AP 5.3.4 Minors (p. 90).

Requirements

Minor Requirements
Total credits: 15

Required SEOR Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 101</td>
<td>Understanding Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>or SYST 210</td>
<td>Systems Design</td>
<td></td>
</tr>
<tr>
<td>SYST 473</td>
<td>Decision and Risk Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

Three Additional Courses
Select three additional courses from the following: 9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 210</td>
<td>Systems Design</td>
<td></td>
</tr>
</tbody>
</table>
| SYST 220 & SYST 221 | Dynamical Systems I  
& Systems Modeling Laboratory                         |         |
| SYST 320 | Dynamical Systems II                                    |         |
| SYST 330 | Systems Methods                                          |         |
| SYST 371 | Systems Engineering Management                          |         |
| SYST 460 | Introduction to Air Traffic Control                      |         |
| SYST 461 | Air Transportation System Engineering                    |         |
| SYST 468 | Applied Predictive Analytics                            |         |
| SYST 469 | Human Computer Interaction                              |         |
| or SYST 470 | Human Factors Engineering                               |         |
| OR 335 | Discrete Systems Modeling and Simulation                |         |
| OR/MATH 441 | Deterministic Operations Research                      |         |
| OR/MATH 442 | Stochastic Operations Research                         |         |
| OR 481 & MATH 446 | Numerical Methods in Engineering  
or Numerical Analysis I                      |         |

Total Credits 9

Prerequisites
Some of the courses listed above have additional prerequisites. Students should pay careful attention to prerequisites when selecting courses.

Systems Engineering, MS
Banner Code: VS-MS-SYST

Academic Advising
Admissions & Policies

Admissions

Foundation and Admission Requirements

Each applicant for the MS program should meet the following entrance requirements:

1. Have a baccalaureate degree from an accredited institution in engineering, mathematics, computer science, physical sciences, economics, or a related field.
2. Have completed courses in multivariate calculus, matrix algebra, differential equations, applied probability and statistics, and a computer language.
3. Provide evidence of satisfactory educational achievement in at least one of the following forms: a GPA of at least 3.00 as an undergraduate or an acceptable GPA in graduate courses. International students must also achieve satisfactory scores on the Graduate Record Examination (GRE).
4. Have achieved a satisfactory score on the TOEFL examination for non-native English speakers.
5. Have two letters of recommendation submitted by former professors or supervisors.

Policies

Advising & Plan of Study

All entering systems engineering students must attend an orientation meeting. Each student is assigned a faculty advisor upon acceptance. Students must meet with their advisors during their first semester and design an approved plan of study. Students are encouraged to seek out their advisor when questions arise and when their plan of study needs to be revised. Any changes to the plan of study must be approved by the faculty advisor. A copy of the plan of study must remain on file with the department.

Requirements

Degree Requirements

Total credits: 30-33

To obtain the Master of Science degree, students must complete a minimum of 30 semester hours of graduate level courses that consists of five core courses, three concentration courses, an elective, and a systems engineering project.

Students must have a working background in engineering mathematics and computer systems. A student lacking these foundations may be required to take one or more foundation courses. The department offers SYST 500 Quantitative Foundations for Systems Engineering as an intensive review of undergraduate engineering mathematics, including matrix algebra, calculus, differential equations, probability and statistics. Students who have not completed a two-semester calculus sequence and matrix algebra will be required to complete these courses prior to taking SYST 500 Quantitative Foundations for Systems Engineering.

Approved basic methods and concentration courses for the eight concentration areas are listed below. Students are expected to select a set of concentration courses that constitute a clearly defined focus. These courses must be approved by the student’s advisor. Each student is required to have a current plan of study on file with the Systems Engineering and Operations Research Department.

Candidates for the MS must have a minimum GPA of 3.00 in course work applied to the degree, which may include no more than 6 credits of C. The GPA calculation excludes all transfer courses and Mason nondegree studies credits not formally approved for the degree.

Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 500</td>
<td>Systems Engineering Principles</td>
<td>15</td>
</tr>
<tr>
<td>SYST 510</td>
<td>Systems Definition and Cost Modeling</td>
<td></td>
</tr>
<tr>
<td>SYST 520</td>
<td>System Engineering Design</td>
<td></td>
</tr>
<tr>
<td>SYST 530</td>
<td>Systems Engineering Management I</td>
<td></td>
</tr>
<tr>
<td>SYST 611</td>
<td>System Methodology and Modeling</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 15
SYST 505 Systems Engineering Principles may be replaced by an approved elective for students who have work experience in systems engineering or who have been enrolled in the undergraduate BSSE program at Mason. SYST 505, if taken, must be taken in the first semester of enrollment in the MSSE program.

**Basic Methods Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one course from the following: 1</td>
<td></td>
</tr>
<tr>
<td>OR 531</td>
<td>Analytics and Decision Analysis</td>
<td>3</td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td></td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td></td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>SYST 563</td>
<td>Evidence-Based Systems Engineering</td>
<td></td>
</tr>
<tr>
<td>SYST 568</td>
<td>Applied Predictive Analytics</td>
<td></td>
</tr>
<tr>
<td>or OR 568</td>
<td>Applied Predictive Analytics</td>
<td></td>
</tr>
<tr>
<td>SYST 573</td>
<td>Decision and Risk Analysis</td>
<td></td>
</tr>
<tr>
<td>SYST 620</td>
<td>Discrete Event Systems</td>
<td></td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits**: 3

1 Students must complete one basic methods course. The choice of basic methods course may depend on the student’s concentration and must be selected from the list above.

**Concentrations**

Students must complete 3 courses (9 credits) from their area of emphasis. Students may select one of the following eight areas of concentration, or may create their own emphasis area with the approval of their advisor and the Department Chair.

- Advanced Transportation Systems (ATS) (p. 1172)
- Architecture-Based Systems Integration (ABSI) (p. 1172)
- Command, Control, Communications, Computing, and Intelligence (C4I) (p. 1173)
- Energy Systems (NRGS) (p. 1173)
- Financial Systems Engineering (FNSE) (p. 1173)
- Systems Engineering and Data Analytics (SEDA) (p. 1173)
- Systems Engineering of Software-Intensive Systems (SESI) (p. 1173)
- Systems Management (SMG) (p. 1174)

**Concentration in Advanced Transportation Systems (ATS)**

The air transportation system is among the most complex networked systems. This concentration is designed to provide students with the skills to address the next generation of challenges of the air transportation system. Topics addressed include congestion and safety of the national air space, economic and human factors, impact of technology innovation, and public policy. The program emphasizes design, modeling, and analysis to support decision making for government and the aviation industry.

**Required Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 560</td>
<td>Introduction to Air Traffic Control</td>
<td>3</td>
</tr>
<tr>
<td>SYST 660</td>
<td>Air Transportation Systems Modeling</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>OR 531</td>
<td>Analytics and Decision Analysis</td>
<td></td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td></td>
</tr>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td></td>
</tr>
<tr>
<td>OR 568</td>
<td>Applied Predictive Analytics</td>
<td></td>
</tr>
<tr>
<td>or SYST 568</td>
<td>Applied Predictive Analytics</td>
<td></td>
</tr>
<tr>
<td>SYST 563</td>
<td>Evidence-Based Systems Engineering</td>
<td></td>
</tr>
<tr>
<td>SYST 573</td>
<td>Decision and Risk Analysis</td>
<td></td>
</tr>
<tr>
<td>SYST 620</td>
<td>Discrete Event Systems</td>
<td></td>
</tr>
<tr>
<td>SYST 664</td>
<td>Bayesian Inference and Decision Theory</td>
<td></td>
</tr>
</tbody>
</table>

One free elective, chosen under advisement: 3

**Total Credits**: 12

**Concentration in Architecture-Based Systems Integration (ABSI)**

There is much interest today in the engineering of systems that comprise other component systems, where each of the component systems serves organizational and human purposes. These systems families are often categorized as systems of systems, federations of systems, or coalitions of systems. The design of architectures is a major ingredient in the design of systems families. Furthermore, it provides the conceptual basis for achieving system integration. This concentration covers the formulation of the system integration problem, definition of architecture frameworks, use of structured analysis and object-oriented methodologies for the design of architectures, modeling and simulation for the evaluation of architectures, and approaches to integration. Both defense and industrial applications are considered.

**Required Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 618</td>
<td>Model-based Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 621</td>
<td>Systems Architecture Design</td>
<td>3</td>
</tr>
</tbody>
</table>

One free elective, chosen under advisement: 3

**Total Credits**: 12
Concentration in Command, Control, Communications, Computing, and Intelligence (C4I)

C4I systems are concerned with gathering, retrieving, analyzing, and disseminating time-sensitive information to achieve mission-critical objectives. These systems support military operations across the spectrum of conflict, intelligence operations, transportation monitoring, emergency response, drug interdiction, and law enforcement, among others. C4I systems include the equipment, people, and procedures necessary to accomplish the mission. The equipment may include a variety of sensors, communications systems, and information processing and decision-support systems.

The program focuses on the analysis, design, development, and management of C4I systems. Topics addressed include C4I architectures and software, communications, decision support, modeling and simulation, and sensor data fusion.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 542</td>
<td>Operations Research: Stochastic Models</td>
<td>3</td>
</tr>
<tr>
<td>or ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
</tbody>
</table>

Required Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 680</td>
<td>Principles of Command, Control, Communications, Computing, and Intelligence (C4I)</td>
<td>3</td>
</tr>
<tr>
<td>or SYST 670</td>
<td>Principles of Command, Control, Communications, Computing, and Intelligence (C4I)</td>
<td></td>
</tr>
<tr>
<td>SYST 584</td>
<td>Heterogeneous Data Fusion</td>
<td>3</td>
</tr>
<tr>
<td>One free elective, chosen under advisement:</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Energy Systems (NRGS)

With the rising economic and environmental costs to power homes, businesses and the transportation systems that move people and goods from place to place, innovative solutions are required to meet the world's expanding energy needs. Students completing the energy systems concentration will build upon a foundation in systems engineering design by incorporating physical principles of thermal fluid energy transfer into system models. Students will develop the tools to model and analyze generation, transmission, and utilization systems in steady and dynamic operation. Students will optimize these systems by considering physical principles, economics, local policy and security concerns. Graduates will be able to apply their expertise to work with: traditional power generation facilities; renewable energy integration; national, local, and smart grids; mechanical and electrical energy storage systems; utilization of energy in building and transportation systems.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 521</td>
<td>Energy Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 531</td>
<td>Energy Transmission</td>
<td>3</td>
</tr>
<tr>
<td>ME 541</td>
<td>Power Generation</td>
<td>3</td>
</tr>
<tr>
<td>One free elective, chosen under advisement:</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Financial Systems Engineering (FNSE)

Financial engineering is a cross-disciplinary field which relies on mathematical finance, numerical methods, and computer simulations to make trading, hedging, and investment decisions, as well as facilitating the risk management of those decisions. While mathematics is indispensable in financial engineering, the concentration will try best to focus on the concepts and ideas of finance, while limiting the math within a scope acceptable to most students in engineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 538</td>
<td>Analytics for Financial Engineering and Econometrics</td>
<td>3</td>
</tr>
</tbody>
</table>

Required Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 588</td>
<td>Introduction to Options, Futures, and Derivatives</td>
<td>3</td>
</tr>
<tr>
<td>SYST 688</td>
<td>Financial Systems Engineering II: Derivative Products and Risk Management</td>
<td></td>
</tr>
<tr>
<td>One free elective, chosen under advisement:</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Systems Engineering and Data Analytics (SEDA)

Systems engineers must address a broad range of issues relevant to the design, implementation, analysis, and management of systems. This concentration provides methodological tools that can be applied to the systems engineering process. Areas of focus include decision support systems, distributed intelligent systems, knowledge-based planning systems, network systems, probabilistic reasoning systems, sensor fusion systems, and optimization methods.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 531</td>
<td>Analytics and Decision Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SYST 568</td>
<td>Applied Predictive Analytics</td>
<td>3</td>
</tr>
<tr>
<td>SYST 573</td>
<td>Decision and Risk Analysis</td>
<td>3</td>
</tr>
<tr>
<td>One free elective, chosen under advisement:</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 12

Concentration in Systems Engineering of Software-Intensive Systems (SESI)

This concentration addresses the software component of the systems engineering life cycle. It specifically covers the allocation of system requirements to software. Practitioners are concerned with the theoretical and practical aspects of technology, cost, and the social effect of computer systems that are reliable, maintainable, secure, efficient, and cost effective. The program emphasizes the integration of hardware, software, and firmware, and the management of these complex computer systems over their life cycle through systems engineering methods, tools, and processes.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR 531</td>
<td>Analytics and Decision Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Required Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 542</td>
<td>Decision Support Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 618</td>
<td>Model-based Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>One from the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ECE 528</td>
<td>Introduction to Random Processes in Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>OR 531</td>
<td>Analytics and Decision Analysis</td>
<td></td>
</tr>
<tr>
<td>OR 541</td>
<td>Operations Research: Deterministic Models</td>
<td></td>
</tr>
</tbody>
</table>
Concentration in Systems Management (SMG)
The management aspect of systems engineering involves tracking and control of system development through the major phases of the system lifecycle, identifying and resolving problems to minimize their effect on cost, schedule, or performance, and iteratively improving product and process. This concentration emphasizes the theory and practice of systems management and prepares students for careers in management.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 514</td>
<td>Systems Thinking</td>
<td>3</td>
</tr>
<tr>
<td>SYST 618</td>
<td>Model-based Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYST 630</td>
<td>Systems Engineering Management II</td>
<td>3</td>
</tr>
<tr>
<td>One free elective, chosen under advisement:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Project or Thesis
Students must complete three credit hours of SYST 699 Masters Project. Students in this course work in teams on an approved applied project. A project report is submitted at the end of the semester, and a final project presentation is made to the entire faculty of the SEOR Department.

Online MS in Systems Engineering
The graduate program leading to the Master of Science in Systems Engineering can be completed entirely online. The delivery mode for the online program is asynchronous, but many courses are also offered in synchronous mode. Students may also plan a program with some courses taken online and some in the classroom. The following courses are offered online at least once a year:

- SYST 510 Systems Definition and Cost Modeling
- SYST 520 System Engineering Design
- SYST 530 Systems Engineering Management I
- SYST 542 Decision Support Systems Engineering
- SYST 573 Decision and Risk Analysis
- SYST 611 System Methodology and Modeling
- SYST 618 Model-based Systems Engineering
- SYST 620 Discrete Event Systems
- SYST 621 Systems Architecture Design
- SYST 630 Systems Engineering Management II
- SYST 699 Masters Project
- OR 531 Analytics and Decision Analysis
- OR 541 Operations Research: Deterministic Models
- OR 542 Operations Research: Stochastic Models
- OR 568 Applied Predictive Analytics
- OR 569 Applied Predictive Analytics
- OR 588 Applied Predictive Analytics
- OR 598 Applied Predictive Analytics
- OR 600 Bayesian Inference and Decision Theory
- OR 610 Systems Thinking
- OR 620 Discrete Event Systems
- OR 630 Systems Engineering Management II
- OR 640 Systems Definition and Cost Modeling
- OR 650 System Engineering Design
- OR 664 Bayesian Inference and Decision Theory

One free elective, chosen under advisement: 3
Total Credits 12

Accelerated Master’s

Bioengineering, BS/Systems Engineering, Accelerated MS
Overview
Highly-qualified students in the Bioengineering, BS (p. 1032) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Bioengineering, BS (p. 1032) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Options Requirement
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may chose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Civil and Infrastructure Engineering, BS/Systems Engineering, Accelerated MS
Overview
Highly-qualified students in the Civil and Infrastructure Engineering, BS (p. 1177) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Civil and Infrastructure Engineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.
Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Cyber Security Engineering, BS/Systems Engineering, Accelerated MS

Overview

Highly-qualified students in the Cyber Security Engineering, BS (p. 1016) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in Cyber Security Engineering, BS (p. 1016) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credit hours) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Mechanical Engineering, BS/Systems Engineering, Accelerated MS

Overview

Highly-qualified students in the Mechanical Engineering, BS (p. 1177) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in Mechanical Engineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Statistics, BS/Systems Engineering, Accelerated MS

Overview

Highly-qualified students in the Statistics, BS (p. 1146) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Mason undergraduate students majoring in Statistics, BS (p. 1146) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credit hours) of
approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such electives to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Systems Engineering BS/Systems Engineering, Accelerated MS
Overview
Qualified undergraduate students may apply for a five-year accelerated BS/MS program leading to a Bachelor of Science in Systems Engineering (p. 1164) and an MS degree in Systems Engineering (p. 1170).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in systems engineering may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS program.

Accelerated Option Requirements
Up to two courses (six credit hours) of master’s level courses may be applied to both the undergraduate and the graduate degrees. These two courses may be chosen from the list of graduate courses in the following table. For Systems Engineering, BS students, these graduate courses replace the corresponding undergraduate courses listed in the table. The undergraduate version of these courses may not be applied toward the Systems Engineering, MS program.

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYST 420</td>
<td>SYST 521/OR 643</td>
<td>Credit may not be received for both courses.</td>
</tr>
<tr>
<td>SYST 473</td>
<td>SYST 573</td>
<td>Credit may not be received for both courses.</td>
</tr>
<tr>
<td>OR 441</td>
<td>OR 541</td>
<td>Credit may not be received for both courses.</td>
</tr>
<tr>
<td>OR 442</td>
<td>OR 542</td>
<td>Credit may not be received for both courses.</td>
</tr>
</tbody>
</table>

Any other 500-level course may be applied to both the undergraduate and graduate degrees with approval of the advisor and SEOR department chair.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and Graduate Recruitment and Enrollment Services. At the completion of MS requirements, a master’s degree is conferred.

BS (selected)/Systems Engineering, Accelerated MS
Overview
Highly-qualified students in BS programs have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP.6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in both engineering and non-engineering disciplines may apply to this option if 1) such an accelerated Systems Engineering, MS (p. 1170) pathway is allowable from the student’s BS program, which will be determined by the academic advisors of both the BS and MS programs and by the SEOR department chair, 2) they have earned 90 undergraduate credits with an overall GPA of at least 3.30, and 3) they have completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Option Requirements
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied
to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair.

For the BS programs that allow undergraduate electives from the department of systems engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Sid and Reva Dewberry Department of Civil, Environmental, and Infrastructure Engineering

Sam Salem, Chair

Phone: 703-993-1675
Website: civil.gmu.edu

The Sid and Reva Dewberry Department of Civil, Environmental, and Infrastructure Engineering (CEIE) offers BS, MS, MEng, and PhD degrees. These degree programs focus on the physical and organizational infrastructure essential to the functioning of society.

Civil and infrastructure engineering is the study of land, transportation, water resources, environment, structures, geotechnology, and construction from a civil engineering perspective and within a complex technological, social, political, economic, and environmental context. The focus is on how these systems are successfully conceived, developed, designed, built, operated, maintained, and renewed in the built environment. This applies to major metropolitan areas in developed countries, such as Washington, D.C. and its integrated suburbs, and extends to infrastructure issues in developing nations which often involve very different issues.

An urban society thrives and prospers when adequate, appropriate, reliable, robust, secure, and cost-effective infrastructure systems are provided. The investment in existing infrastructure and other urban systems in the United States and abroad is enormous. The investment required to maintain, operate, renew, and manage the evolution of these infrastructure systems in the future is even greater. The need for highly educated and creative professionals to confront and solve these continuing vital problems is pressing. Examples of infrastructure systems include water supply and distribution; streets, roads, and highways; wastewater management; transit; storm water management; public utilities; energy supply and distribution; telecommunications; buildings, facilities and structures; and solid waste management.

Faculty

Professors
Houck, Miller-Hooks, Salem (chair)

Associate Professors
Ferreira, Kosoglu, Tanyu, Urgessa, Venigalla, Zhu

Assistant Professors
Bonkok, Esmaeili, Ji, Lattanzi, Maggioni, Tian

Instructors
Binning

Adjunct Faculty

Emeritus Faculty
Arciszewski, Bronzini

Programs

• Civil and Infrastructure Engineering, BS
• Civil and Infrastructure Engineering, MS
• Civil and Infrastructure Engineering, PhD
• Environmental Engineering Minor
• Geotechnical, Construction, and Structural Engineering, MEng

Civil and Infrastructure Engineering, BS

Banner Code: VS-BS-CEIE

Lisa Nolder, Associate Director for Undergraduate Programs

Phone: 703-993-1675
Email: snolder@gmu.edu
Website: http://civil.gmu.edu/undergraduate

The bachelor’s degree program provides essential underpinnings in the theory and design methods of civil and infrastructure engineering for engineering practice. Students benefit from exposure to practical civil, environmental, and infrastructure engineering problems and their solutions in the classroom, lab, and field. The educational objectives of the Civil and Infrastructure Engineering program describe expectations for graduates approximately three to five years after obtaining their degree. Graduates of the program will be professionals who:

• Engage in the engineering practice of planning, designing, constructing, operating and maintaining sustainable infrastructure;
• Participate in public discussions concerning infrastructure in the urban, suburban, and exurban setting by providing professional guidance;
• Stay current through continuing education opportunities, professional conferences, graduate school, and other self-learning experiences; have the ability to obtain and maintain professional licensing.

Civil engineering students can look forward to a career in local, state, and federal government organizations, and in architectural and engineering firms that specialize in land development, transportation, water resources, environment, structures, geotechnical, construction, and other related fields. The program also prepares students for continuing graduate studies for sophisticated practice, research, and teaching.

The bachelor’s program in civil and infrastructure engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

This is a Green Leaf program (p. 107).

Admissions & Policies

Policies

For policies governing all undergraduate degrees, see AP 5 Undergraduate Policies (p. 87).

Change of Major

See Change of Major (p. 1013) for more information.

Program Requirements

Degree requirements include 120 credits distributed in three major areas: mathematics and basic science, humanities and social sciences, and civil engineering analysis and design. Students must complete all math, science and Volgenau School of Engineering courses presented as part of the required 120 credits for the degree with a grade of C or better.

The prerequisite structure for these courses is extensive. Sample schedules, available from the department, provide a comprehensive listing of major and Mason Core requirements and serve as a guide to the progression of the courses to satisfy all prerequisites.

Students are required to see their faculty advisor at least once each year to plan their curriculum, and to develop an approved plan of study, which constitutes a learning plan for the degree program.

Termination from the Major

No math, science, or Volgenau School of Engineering course that is required for the major may be attempted more than three times. Those students who do not successfully complete such a course within three attempts will be terminated from the major. Undeclared students in the Volgenau School who do not successfully complete a course required for a Volgenau School major within three attempts will also be terminated.

In addition, students in the Volgenau School with evidence of continued failure to make adequate progress toward declaring or completing a Volgenau School major will also be terminated. Adequate progress is determined by the major program. For more information, see AP 5.2.4 Termination from the Major (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-2-4).

Once a student has attempted one of these courses twice unsuccessfully, the third attempt must be no later than the next semester of enrollment, excluding summers. Failure to take the course at that time will result in termination from the major. A third attempt of a Volgenau School of Engineering course requires support by the student’s major department as well as permission by the department offering the course. This permission is not guaranteed. If the student is unable to take the course when required, the student may request an extension to a future semester; extensions require approval of the student’s advisor, their department, and the Associate Dean for Undergraduate Programs. The deadline for extension requests is the add deadline for the semester in which the course is required.

Students who have been terminated from a Volgenau School of Engineering major may not register for a Volgenau School course without permission of the department offering the course. This applies to all undergraduate courses offered by the Volgenau School except IT 104 Introduction to Computing (Mason Core) (p. 142) and STAT 250 Introductory Statistics I (Mason Core) (p. 142).

A student may not declare any major in the Volgenau School of Engineering if the student has previously met the termination criteria for that major at any time, regardless of what the student’s major was at the time the courses were taken.

Requirements

Degree Requirements

Total credits: 120

This is a Green Leaf program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 101</td>
<td>Introduction to Civil Engineering</td>
<td>2</td>
</tr>
<tr>
<td>or ENGR 107</td>
<td>Introduction to Engineering (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Civil Engineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 203</td>
<td>Geomantics and Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 210</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 240</td>
<td>Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 301</td>
<td>Engineering and Economic Models in Civil Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 304</td>
<td>Jr Engineering Competency Exam</td>
<td>0</td>
</tr>
<tr>
<td>CEIE 310</td>
<td>Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 311</td>
<td>Structural Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 331</td>
<td>Soil Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 340</td>
<td>Water Resource Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 355</td>
<td>Environmental Engineering and Science</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 360</td>
<td>Introduction to Transportation Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 370</td>
<td>Construction Systems</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 409</td>
<td>Professional Practice and Management in Engineering (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 490</td>
<td>Senior Design Project (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 37
### Computing

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 130</td>
<td>Computing for Scientists (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

### Technical Electives

Select 12 credits of CEIE Technical Electives from four different specialty areas from among the following six Civil Engineering specialty areas:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 471/571</td>
<td>Construction Administration</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 476/576</td>
<td>Construction Cost Estimating</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 478/578</td>
<td>Construction Planning and Scheduling</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 450/550</td>
<td>Environmental Engineering Systems</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 453/553</td>
<td>Water and Wastewater Treatment Processes</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 432/532</td>
<td>Foundation Design</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 435/535</td>
<td>Engineering Geology</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 412/512</td>
<td>Structural Steel Design</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 413/513</td>
<td>Reinforced Concrete Design</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 414</td>
<td>Structural Modeling for Engineers</td>
<td></td>
</tr>
<tr>
<td>CEIE 461/561</td>
<td>Traffic Engineering</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 462/562</td>
<td>Urban Transportation Planning</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 440/540</td>
<td>Water Supply and Distribution</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 442/542</td>
<td>Open Channel Flow</td>
<td>1</td>
</tr>
</tbody>
</table>

Select 12 credits of CEIE Technical Elective courses from any CEIE 4XX course (p. 1383) 2

Total Credits 24

1. Taking a 500-level course requires prior approval by the department’s undergraduate program director.

2. One 3 credit course of those remaining credits may be from related advanced science or engineering course offerings. Approval from the student’s academic advisor is required before a non-CEIE course is taken to meet senior technical elective requirements for the degree.

### Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 214</td>
<td>Elementary Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 14

### Physics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>University Physics I Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 260</td>
<td>University Physics II (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261</td>
<td>University Physics II Laboratory (Mason Core) (p. 142)</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 266</td>
<td>Introduction to Thermodynamics</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 9

### Chemistry

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 271 &amp; CHEM 272</td>
<td>General Chemistry for Engineers Lecture (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>or CHEM 211 &amp; CHEM 213</td>
<td>General Chemistry I (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 4

### Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 107</td>
<td>Intro Biology II Lecture (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 177</td>
<td>Ecological Applications</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

### Statistics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 344</td>
<td>Probability and Statistics for Engineers and Scientists I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 3

### Communication and Economics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Public Speaking (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 101</td>
<td>Fundamentals of Communication (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 103</td>
<td>Contemporary Microeconomic Principles</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 6

### Writing-Intensive Requirement

The university’s writing-intensive requirement for civil and infrastructure engineering majors is satisfied by the successful completion of CEIE 301 Engineering and Economic Models in Civil Engineering.

### Additional Mason Core

Students must complete all Mason Core (p. 142) requirements not fulfilled by major requirements with one modification. CIE students are required to take 6 credits of written communication, 3 credits of literature, and courses in two of the following three areas: arts, global understanding, and western civilization/world history. This exemption...
Civil and Infrastructure Engineering, BS

means that CIE students meet the Volgenau School of Engineering’s requirement for humanities and social science courses by taking 21 credits rather than 24. The two additional Mason Core (p. 142) areas to be satisfied must be approved by the CEIE faculty advisor with the goal of best meeting the Mason Core (p. 142) needs of the student. All other Mason Core (p. 142) requirements must be met.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Written Communication (p. 142)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Literature (p. 147)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select courses from two of the following areas:</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Arts (p. 144)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History (p. 151)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global Understanding (p. 146)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>15</td>
</tr>
</tbody>
</table>

Honors

Honors in the Major

The Sid and Reva Dewberry Department of Civil, Environmental and Infrastructure Engineering offers an Honors Program in Civil and Infrastructure Engineering that creates a community of outstanding scholars in civil engineering who share a commitment to learning, service, and leadership. The Program is crafted around the civil and infrastructure curriculum, and is distinct from the University Honors Curriculum. Entry to the Honors Program is by invitation, extended to students with a minimum high school GPA of 3.80.

Requirements

The Honors Program is challenging, designed for the highly motivated student, and consists of 120 credits. Honors students must satisfy requirements in addition to those of the normal BS CIE degree, including:

- An advanced communication course, COMM 320 Business and Professional Communication or COMM 637 Risk Communication, which may serve as a substitute for one CEIE (4xx) level senior technical elective.
- A minimum of 6 credits of CEIE graduate (5xx/6xx) level courses (these courses may substitute for CEIE (4xx) level senior technical electives by approval of the Department Chair). Students must submit a Graduate Course for Undergraduate Credit Form for approval to the course instructor and Department Chair.

Once admitted to the Honors Program, students must remain in good standing and maintain a minimum cumulative GPA of 3.50 and a minimum GPA of 3.20 in each semester for all courses counting toward the BS CIE degree, maintain continuous enrollment working toward the BS CIE degree, and abide by the Mason Honor Code.

Accelerated Master’s

Civil and Infrastructure Engineering, BS/Civil and Infrastructure Engineering, Accelerated MS

Overview

Highly-qualified students in the Civil and Infrastructure Engineering, BS (p. 1177) have the option of obtaining an accelerated Civil and Infrastructure Engineering, MS (p. 1182).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements

Students in the Civil and Infrastructure Engineering, BS (p. 1177) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. All other criteria for admission are identical to criteria for admission into the Civil and Infrastructure Engineering, MS (p. 1182) program.

Accelerated Option Requirements

Students must complete all credits that satisfy requirements for both the BS and MS programs. Students register for 6 credits of overlapping graduate level courses in place of undergraduate technical elective courses. The courses selected for this purpose must be approved by the academic advisor.

Degree Requirements

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Bachelor’s Degree (selected)/Environmental Science and Policy, Accelerated MS

Overview

This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy, MS (p. 696) in less time than if they had first graduated with an environmentally-focused Green Leaf-designated (p. 107) BA or BS degree and then applied to the MS program sequentially.

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate programs, see AP6 Graduate Policies (p. 90).

Admission Requirements

Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated (p. 107) major or minor may apply for provisional acceptance into this accelerated master’s program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) (p. 142) and CHEM 212 General Chemistry II (Mason Core)
By the beginning of the undergraduate’s senior year, they should first submit a Graduate Application for Accelerated Master's Program form (obtained from the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us)). Secondly, in their senior year accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application with a minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. Upon completion and conferral of the undergraduate degree in a Green Leaf-designated (p. 107) program, in the semester indicated in the application, they must additionally submit the Bachelor’s/Accelerated Master’s Transition form (found on the Office of the University Registrar website (http://registrar.gmu.edu/forms)) and will subsequently be admitted into graduate status.

By at least the beginning of their senior year, they should seek out a faculty member in the Department of Environmental Science and Policy (p. 688) who is willing to serve as their advisor. This advisor will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies. Admission into a research-oriented master’s concentration is dependent upon securing the agreement of a faculty advisor. Faculty from a variety of departments and colleges at George Mason (called “program faculty”) can serve as master’s advisors. Potential students are encouraged to speak with the graduate program coordinator in the department to obtain guidance on this issue.

### Application Requirements

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (p. 68) section of this catalog, excluding the GRE exam requirement (which is not required for those enrolled in the accelerated program). This includes three letters of recommendation (at least one from a former professor or someone with a PhD), a recent resume, a statement of interest/research goals and interests (including information on the candidate’s proposed MS research), and a letter from their advisor stating that the advisor agrees to take on the candidate as an MS student, how the candidate would be a good fit for them and why candidate’s research topic would be suitable.

For information specific to the accelerated Environmental Science and Policy, MS (p. 696), see Graduate Admissions on the department’s website (http://esp.gmu.edu/academic-programs/graduate/admissions).

### Reserve Graduate Credits

Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate environmentally-focused graduate coursework may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master’s program and must then complete an additional 27 credits to receive the master’s degree.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master’s Transition form found on the Office of the University Registrar website (http://registrar.gmu.edu/forms) (as noted above).

Students may take up to 6 additional environmentally-focused graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, an MS could be completed with 21 post-bachelor’s credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department.

### Civil and Infrastructure Engineering, BS/Operations Research, Accelerated MS Overview

Highly-qualified students in the Civil and Infrastructure Engineering, BS (p. 1177) have the option of obtaining an accelerated Operations Research, MS (p. 1153).

For more detailed information, see AP6.7 Bachelor's/Accelerated Master’s Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

### Admission Requirements

Mason undergraduate students majoring in Civil and Infrastructure Engineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Operations Research, MS (p. 1153) program.

Students must additionally complete MATH 203 Linear Algebra prior to applying for the graduate program.

### Accelerated Options Requirement

Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow

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### Table: Possible Options for Accelerated Master's Program

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 213</td>
<td>Cell Structure and Function (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 214</td>
<td>Biostatistics for Biology Majors</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 308</td>
<td>Foundations of Ecology and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 210</td>
<td>Environmental Biology: Molecules and Cells</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 301</td>
<td>Environmental Science: Biological Diversity and Ecosystems</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 302</td>
<td>Environmental Science: Biomes and Human Dimensions</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 305</td>
<td>Environmental Microbiology Essentials</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 306</td>
<td>Environmental Microbiology Essentials Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>CONS 401</td>
<td>Conservation Theory</td>
<td>3</td>
</tr>
<tr>
<td>CONS 402</td>
<td>Applied Conservation</td>
<td>3</td>
</tr>
</tbody>
</table>

6 credits of BIOL or CONS electives
undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor's/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Civil and Infrastructure Engineering, BS/Systems Engineering, Accelerated MS
Overview
Highly-qualified students in the Civil and Infrastructure Engineering, BS (p. 1177) have the option of obtaining an accelerated Systems Engineering, MS (p. 1170).

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees (p. 90). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

Admission Requirements
Mason undergraduate students majoring in Civil and Infrastructure Engineering, BS (p. 1177) may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30 and completed all MATH and PHYS requirements. Criteria for admission are identical to criteria for admission to the Systems Engineering, MS (p. 1170) program.

Accelerated Options Requirement
Students must complete all credits that satisfy requirements for both the BS and MS programs. Up to two courses (6 credits) of approved master’s level courses taken as part of the undergraduate degree may be applied to the graduate degree. The courses selected for this purpose must be approved by the academic advisors of both the BS and MS programs and by the SEOR department chair. For the BS programs that allow undergraduate electives from the department of system engineering and operations research, the students may choose the graduate version of such elective courses to replace the corresponding undergraduate courses.

Degree Conferral
Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor's/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Civil and Infrastructure Engineering, MS
Banner Code: VS-MS-CEIE

Academic Advising

This MS is designed for students who have completed a bachelor's degree in civil engineering, although students with related undergraduate degrees may be considered for provisional admission. The MS educates students in the theory and practice of civil engineering science and design, with a technical concentration. The master's degree is increasingly expected for high level practice in civil engineering, and prepares graduates to practice in civil engineering for federal, state, or local government; engineering design firms; construction firms; public utilities; non-governmental organizations; and local and regional planning firms, among others. The MS degree serves as a foundation for subsequent study in a doctoral program in civil engineering, as well as for graduate studies in architecture, law, business, economics, finance, and public policy and administration.

Both part-time and full-time study is available. Full-time students typically complete the degree in one and a half, to two years.

Admissions & Policies

Admissions
To be considered for admission to the program, a candidate must:

• Satisfy general University and Volgenau School requirements for admission to a graduate program,
• Have earned a baccalaureate degree in engineering or a related science,
• Provide two letters of reference, submitted by former professors or supervisors,
• Provide a goals statement and professional résumé.

Acceptance to the degree program is based on an assessment of the applicant’s capacity to pursue graduate studies successfully. Consideration is given to the undergraduate record, any previous graduate work, professional work experience, and reference letters.

Requirements

Degree Requirements
Total credits: 30

All MS students must develop a faculty-approved plan of study with a minimum of 30 graduate credits. These credits include two core courses (CEIE 601 Infrastructure Modeling and CEIE 605 Risk and Uncertainty in Civil Engineering), specific requirements of a concentration declared by the student, and seminar requirement (CEIE 795 Civil and Infrastructure Engineering Seminar).

Plan of Study
Students are responsible for developing and receiving advisor approval on a plan of study no later than the end of their second semester of study. Courses taken without prior approval by the faculty advisor may not be accepted for credit toward the degree. No more than three courses used for credit toward the MS may be cross-listed as undergraduate courses.
None may repeat material completed as part of the student’s previous studies. Most MS courses are offered on a three-semester rotation.

**Core Courses**

All MS students must complete the following two core courses within the first 12 credit hours of their MS studies. These courses provide a common background for understanding the breadth and complexity of civil and infrastructure engineering and for analyzing and solving engineering problems.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 601</td>
<td>Infrastructure Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 605</td>
<td>Risk and Uncertainty in Civil Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>6</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Concentration in Construction Engineering and Management (CEM)**

Select at least three from the following five construction engineering and management core courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 571</td>
<td>Construction Administration</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 572</td>
<td>Building Information Modeling</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 573</td>
<td>Legal Aspects of the Construction Process</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 575</td>
<td>Design for Constructability</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 576</td>
<td>Construction Cost Estimating</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

1 Cross-lists with an undergraduate course

**Electives**

The remaining elective credits depend on whether the student is pursuing research credits or not.

Select one from the following options (also outlined in the Notes section below):

<table>
<thead>
<tr>
<th>Option 1: Thesis:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 799</td>
</tr>
<tr>
<td>At least 9 credits of electives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 2: Project:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 798</td>
</tr>
<tr>
<td>At least 12 credits of electives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 3: All Coursework:</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 15 credits of electives</td>
</tr>
</tbody>
</table>

**Concentration in Environmental and Water Resources Engineering (EWRE)**

Select at least three from the following five environmental and water resources engineering core courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 557</td>
<td>Remote Monitoring Techniques for Civil Engineering Applications</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 641</td>
<td>Water Resources Engineering I: Principles and Practice</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 642</td>
<td>Flood Hazards Engineering</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 658</td>
<td>Water Quality</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 742</td>
<td>Water Resources Engineering II: Water Resource Systems</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

**Electives**

The remaining elective credits depend on whether the student is pursuing research credits or not.

Select one from the following options (also outlined in the Notes section below):

<table>
<thead>
<tr>
<th>Option 1: Thesis:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 799</td>
</tr>
<tr>
<td>At least 9 credits of electives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 2: Project:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 798</td>
</tr>
<tr>
<td>At least 12 credits of electives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 3: All Coursework:</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 15 credits of electives</td>
</tr>
</tbody>
</table>

**A list of approved electives for the construction engineering and management concentration is provided below. Note that the remaining construction engineering and management core courses can also be selected as electives.**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 501</td>
<td>Sustainable Development</td>
<td>1</td>
</tr>
<tr>
<td>CEIE 607</td>
<td>Public Infrastructure Management and Finance</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 679</td>
<td>Special Topics in Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 510</td>
<td>Sources of Geotechnical Data</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 526</td>
<td>Infrastructure Asset Management</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Cross-lists with an undergraduate course

**A list of approved electives for the environmental and water resources engineering concentration is provided below. Note that the remaining environmental and water resources engineering core courses can also be selected as electives.**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 524</td>
<td>Introduction to Bridge Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 525</td>
<td>Structural Evaluation and Rehabilitation</td>
<td>3</td>
</tr>
</tbody>
</table>
### Concentration in Geotechnical Engineering (GEOE)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 531</td>
<td>Earth Retaining Structures and Slope Stability</td>
<td></td>
</tr>
<tr>
<td>CEIE 634</td>
<td>Groundwater and Geoenvironmental Design</td>
<td></td>
</tr>
<tr>
<td>CEIE 635</td>
<td>Advanced Soil Mechanics</td>
<td></td>
</tr>
<tr>
<td>CEIE 636</td>
<td>Sources of Geotechnical Data</td>
<td></td>
</tr>
<tr>
<td>CEIE 638</td>
<td>Advanced Foundation Design</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

**Electives**

The remaining elective credits depend on whether the student is pursuing research credits or not.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 526</td>
<td>Advanced Steel Design</td>
<td></td>
</tr>
<tr>
<td>CEIE 527</td>
<td>Pre-stressed Concrete</td>
<td></td>
</tr>
<tr>
<td>CEIE 611</td>
<td>Advanced Structural Analysis</td>
<td></td>
</tr>
<tr>
<td>CEIE 612</td>
<td>Structural Mechanics</td>
<td></td>
</tr>
<tr>
<td>CEIE 613</td>
<td>Structural Dynamics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

### Concentration in Structural Engineering (STRE)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 524</td>
<td>Introduction to Bridge Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 532</td>
<td>Foundation Design</td>
<td>1-3</td>
</tr>
<tr>
<td>CEIE 535</td>
<td>Engineering Geology</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 573</td>
<td>Legal Aspects of the Construction Process</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 575</td>
<td>Design for Constructability</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 607</td>
<td>Public Infrastructure Management and Finance</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 639</td>
<td>Special Topics in Geotechnical Engineering</td>
<td>1-3</td>
</tr>
<tr>
<td>CEIE 659</td>
<td>Hazardous Waste</td>
<td>3</td>
</tr>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Cross-lists with an undergraduate course

### Concentration in Infrastructure Engineering (MS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 540</td>
<td>Water Supply and Distribution</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 542</td>
<td>Open Channel Flow</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 550</td>
<td>Environmental Engineering Systems</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 553</td>
<td>Water and Wastewater Treatment Processes</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 607</td>
<td>Public Infrastructure Management and Finance</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 634</td>
<td>Groundwater and Geoenvironmental Design</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 643</td>
<td>Coastal Flood Hazards</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 649</td>
<td>Special Topics in Water Resources Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 657</td>
<td>Environmental Engineering Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 659</td>
<td>Hazardous Waste</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 664</td>
<td>Transportation Engineering and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 683</td>
<td>Water and Wastewater Systems Security</td>
<td>3</td>
</tr>
<tr>
<td>COMM 637</td>
<td>Risk Communication</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 627</td>
<td>Aquatic Environmental Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 651</td>
<td>Environmental Chemistry of Organic Substances</td>
<td>3</td>
</tr>
<tr>
<td>CSI 501</td>
<td>Introduction to Scientific Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSI 690</td>
<td>Numerical Methods</td>
<td>3</td>
</tr>
<tr>
<td>CSI 720</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CSI 721</td>
<td>Computational Fluid Dynamics I</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 524</td>
<td>Introduction to Environmental and Resource Economics</td>
<td>3</td>
</tr>
<tr>
<td>EVPP 670</td>
<td>Environmental Law</td>
<td>3</td>
</tr>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GGS 566</td>
<td>The Hydrosphere</td>
<td>3</td>
</tr>
<tr>
<td>GGS 671</td>
<td>Algorithms and Modeling in GIS</td>
<td>3</td>
</tr>
<tr>
<td>GGS 787</td>
<td>Scientific Data Mining for Geoinformatics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following options (also outlined in the Notes section below):

- **Option 1:** Thesis:
  - CEIE 799 Master's Thesis (6 credits)

- **At least 9 credits of electives**

- **Option 2:** Project:
  - CEIE 798 Research Project in Civil Engineering (3 credits)

- **At least 12 credits of electives**

- **Option 3:** All Coursework:
  - At least 15 credits of electives

Total Credits 15

**Electives**

The remaining elective credits depend on whether the student is pursuing research credits or not.

Select one from the following options (also outlined in the Notes section below):

- **Option 1:** Thesis:
  - CEIE 799 Master's Thesis (6 credits)

- **At least 9 credits of electives**
Option 2: Project:

- CEIE 798 Research Project in Civil Engineering (3 credits)

At least 12 credits of electives

Option 3: All Coursework:

- At least 15 credits of electives

Total Credits 15

A list of approved electives for the structural engineering concentration is provided below. Note that the remaining structural engineering core courses can also be selected as electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 512</td>
<td>Structural Steel Design ¹</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 513</td>
<td>Reinforced Concrete Design ¹</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 524</td>
<td>Introduction to Bridge Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 525</td>
<td>Structural Evaluation and Rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 532</td>
<td>Foundation Design ¹</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 575</td>
<td>Design for Constructability</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 607</td>
<td>Public Infrastructure Management and Finance</td>
<td>3</td>
</tr>
<tr>
<td>or GBUS 510</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEIE 619</td>
<td>Special Topics in Structural Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 620</td>
<td>Intelligent Systems in Civil Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 623</td>
<td>Advanced Reinforced Concrete Design</td>
<td>3</td>
</tr>
<tr>
<td>CSI 690</td>
<td>Numerical Methods</td>
<td>3</td>
</tr>
<tr>
<td>CSI 742</td>
<td>The Mathematics of the Finite Element Method</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Cross-lists with an undergraduate course

Concentration in Transportation Engineering (TRNE)

Select at least three of the following five transportation engineering core courses:

- CEIE 662 Travel Demand Modeling
- CEIE 663 Intelligent Transportation Systems
- CEIE 664 Transportation Engineering and the Environment
- CEIE 767 Traffic Engineering Modeling and Analysis
- STAT 554 Applied Statistics I

Total Credits 9

Electives

The remaining elective credits depend on whether the student is pursuing research credits or not.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 799</td>
<td>Master’s Thesis (6 credits)</td>
<td></td>
</tr>
<tr>
<td>or GBUS 510</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEIE 798</td>
<td>Research Project in Civil Engineering (3 credits)</td>
<td></td>
</tr>
</tbody>
</table>

At least 12 credits of electives

Option 3: All Coursework:

- At least 15 credits of electives

Total Credits 15

A list of approved electives for the transportation engineering concentration is provided below. Note that the remaining transportation engineering core courses can also be selected as electives.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 560</td>
<td>Public Transportation Systems</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 561</td>
<td>Traffic Engineering ¹</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 562</td>
<td>Urban Transportation Planning ¹</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 607</td>
<td>Public Infrastructure Management and Finance</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 665</td>
<td>Travel Survey Methods and Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 667</td>
<td>Multi-modal Transportation Systems</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 668</td>
<td>Transportation Economics</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 669</td>
<td>Special Topics in Transportation Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 762</td>
<td>Network Models for Transportation Planning</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 763</td>
<td>Discrete Choice Analysis in Transportation</td>
<td>3</td>
</tr>
<tr>
<td>CS 504</td>
<td>Principles of Data Management and Mining</td>
<td>3</td>
</tr>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Cross-lists with an undergraduate course

Note:

Electives outside of the chosen concentration can only be taken or substituted with the approval of the faculty advisor.

Project or Thesis Option

As part of the plan of study, students may elect to pursue research credits.

Research Project

Students complete CEIE 798 Research Project in Civil Engineering, during which they prepare and present a scholarly paper. The scholarly paper is a technical report on an independent study, laboratory or computer experimentation, or literature search on a current civil and infrastructure engineering topic selected under the guidance of a faculty advisor. CEIE 798 Research Project in Civil Engineering credits count toward the 30 credit hours required for the MS degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 798</td>
<td>Research Project in Civil Engineering (3 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 3

Master’s Thesis

Students complete CEIE 799 Master’s Thesis which counts toward the 30 credit hours required for the MS degree. The MS thesis should reflect a significant, independent research effort that advances engineering science, and is worthy of publication. The work is conducted under the guidance of a faculty thesis advisor, and the final written thesis and oral defense are defended before a three-member faculty committee.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 799</td>
<td>Master’s Thesis (6 credits)</td>
<td></td>
</tr>
</tbody>
</table>

At least 9 credits of electives

Option 2: Project:

- CEIE 798 Research Project in Civil Engineering (3 credits)

Total Credits 3
In addition, students must make a satisfactory presentation of the thesis in the CEIE graduate seminar. The thesis is recommended for those students who wish to develop and document their research skills, or contemplate subsequent enrollment in a PhD program. Students are advised of the university’s continuous registration requirement for thesis and dissertation research credits. Upon first enrolling in CEIE 799 Master’s Thesis, the student must continue registration for each fall and spring semester until the thesis is successfully completed. CEIE 799 Master’s Thesis credits count toward the 30 credit hours required for the MS degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 799</td>
<td>Master’s Thesis (must complete 6 credits)</td>
<td>1-6</td>
</tr>
</tbody>
</table>

**Total Credits** 1-6

### Seminar Requirement

All degree candidates must attend a minimum of five graduate seminars approved by the CEIE Department for the degree program. Students must enroll in CEIE 795 Civil and Infrastructure Engineering Seminar and receive a satisfactory (S) grade by their final semester. This course is used to verify the seminar attendance requirement and is repeatable. Continuous enrollment every semester is encouraged for attendance tracking and for dissemination of seminar information but is not required.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 795</td>
<td>Civil and Infrastructure Engineering Seminar</td>
<td>0</td>
</tr>
</tbody>
</table>

**Total Credits** 0

### Accelerated Master’s

#### Civil and Infrastructure Engineering, BS/ Civil and Infrastructure Engineering, Accelerated MS

**Overview**

Highly qualified students in the Civil and Infrastructure Engineering, BS (p. 1177) have the option of obtaining an accelerated Civil and Infrastructure Engineering, MS (p. 1182).

For more detailed information, see AP6.7 Bachelor’s/Accelerated Master’s Degrees (p. 93). For policies governing all graduate degrees, see AP6 Graduate Policies (p. 90).

**Admission Requirements**

Students in the Civil and Infrastructure Engineering, BS (p. 1177) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. All other criteria for admission are identical to criteria for admission into the Civil and Infrastructure Engineering, MS (p. 1182) program.

**Accelerated Option Requirements**

Students must complete all credits that satisfy requirements for both the BS and MS programs. Students register for 6 credits of overlapping graduate level courses in place of undergraduate technical elective courses. The courses selected for this purpose must be approved by the academic advisor.

### Degree Requirements

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

#### Civil and Infrastructure Engineering, PhD

**Banner Code:** VS-PHD-CEIE

**Academic Advising**

Phone: 703-993-1675  
Email: ceiegrad@gmu.edu  
Website: civil.gmu.edu/graduate/doctor-of-philosophy

The Doctor of Philosophy in Civil and Infrastructure Engineering was created to prepare students for advanced leadership positions in research and development in the public or private sector, academics, or government. Students may elect to study in the areas of: construction engineering and management, environmental and water resources engineering, geotechnical engineering, structural engineering, or transportation engineering. Admitted students will complete both required and applicable course work in their technical interest area based on a plan of study prepared with a doctoral advisor. They will take qualifying exams that assess student’s breadth of knowledge at the graduate level and competency to conduct research. They will form a doctoral committee and prepare and defend a dissertation proposal leading to PhD candidacy. Finally, they will conduct original scholarly research and prepare, then defend a doctoral dissertation. Both part-time and full-time study is available.

### Admissions & Policies

**Admissions Requirements**

All general George Mason University and specific Volgenau School admission requirements (including deadlines) apply. In addition, all applicants, including Mason undergraduates, must submit the following:

- Official transcript of undergraduate and graduate course work,
- For applicants whose official language is not English, official TOEFL scores which meet the minimum requirements set by the Volgenau School,
- Three letters of recommendation from individuals knowledgeable about the applicant’s professional or academic work (at least two of the letters should be from individuals with doctorates),
- Recent professional résumé,
- Substantial statement of interest that includes a description of the specific area of proposed dissertation research, contacts the student has made with potential faculty advisors, and an explanation of career and research goals.

Admission decisions will be based on the student’s qualifications and the availability of a faculty advisor in their proposed area of research.
The application materials will be reviewed by the department doctoral committee and decisions made with input from appropriate faculty members.

Financial support for outstanding applicants is available in the form of fellowships as well as research and teaching assistantships. For best consideration, applicants are encouraged to apply early and to contact potential faculty advisors to express interest in support.

**Policies**

**Reduction of Credit**

Students must complete a minimum of 72 graduate credits, which may be reduced by a maximum of 30 credits from a completed master’s degree in civil engineering or other related fields. Reduction of credit requires the approval of the program director or designee and the dean or designee of the school. They determine whether the credits are eligible for reduction of credit and applicable to the degree program and the number of credits to be reduced.

**Program Requirements**

The PhD in Civil and Infrastructure Engineering requires 72 graduate credits. Admitted students are expected to hold a Bachelor of Science in Civil Engineering or a degree in a closely-related engineering or science field.

The degree plan outlined in Degree Requirements is based on a student who receives a full 30 credit reduction. Students who do not receive a full credit reduction should choose additional credits in consultation with their advisor.

**Requirements**

**Degree Requirements**

Total credits: 72

**Doctoral Coursework**

A minimum GPA of 3.50 is required and no C grades are allowed for the coursework earned beyond the MS. A detailed plan of study will be prepared for each student upon acceptance into the program and in consultation with the faculty advisor, which outlines all course requirements to include:

**Required Courses**

The following must be completed while in residence in the program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 800</td>
<td>Civil, Environmental, and Infrastructure Engineering Colloquium (must be taken at least twice)</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 990</td>
<td>Civil and Infrastructure Dissertation Topic Presentation</td>
<td></td>
</tr>
</tbody>
</table>

Select one from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 603</td>
<td>Research Methods in Civil Engineering</td>
</tr>
<tr>
<td>CEIE 796</td>
<td>Directed Reading</td>
</tr>
</tbody>
</table>

**Courses Chosen with Advisor**

Courses, especially in the student’s technical interest area, chosen in consultation with his or her advisor (minimum) 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 998 Doctoral Dissertation Proposal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12  

1 No more than three courses used for credit toward the PhD may be cross-listed as undergraduate courses. None may repeat material completed as part of the student’s previous studies.

**Qualifying Exam**

The PhD qualifying exam is offered twice a year prior to the start of the fall and spring semesters. The qualifying exam is intended to test students’ breadth of knowledge at the MS level in their research area and to evaluate readiness for research. Students entering with a MS degree are required to attempt the qualifying exam within 18 months of admission to the program. Students entering without a MS degree must attempt the qualifying exam within two years of admission to the program.

The qualifying exam consists of one written exam and one oral exam in the student’s primary research area. The available examination areas include:

- Area A: Construction Engineering and Management
- Area B: Environmental Engineering
- Area C: Geotechnical Engineering
- Area D: Structural Engineering
- Area E: Transportation Engineering
- Area F: Water Resources Engineering

The requirements of the written exam (deadlines for exam request, list of topics, allowed aid sheets, calculator policy etc.) are posted on the department’s website. The oral exam is conducted by an examining committee of three CEIE graduate faculty, of whom two must be in the student’s research area. Students give a five minute research presentation, and answer questions from the examination committee about the written exam, the research presentation and other related topics.

Students who receive an overall passing grade form a dissertation committee and register for CEIE 998 Doctoral Dissertation Proposal. Students who receive an overall failing grade may petition to repeat the exam. If granted, the second attempt, which includes both the written and the oral exam, must be completed within one calendar year. The petition to repeat the exam must be received within one month of the first exam attempt. No more than two exam attempts are permitted. Students who do not receive an overall passing grade are terminated from the program.

**Dissertation Research**

Students become eligible for CEIE 998 Doctoral Dissertation Proposal upon passing the qualifying exam (preceding section). Upon admission to candidacy, which requires satisfactory preparation and defense of a dissertation proposal, students may register for CEIE 999 Doctoral Dissertation.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 998</td>
<td>Doctoral Dissertation Proposal</td>
<td>12-24</td>
</tr>
</tbody>
</table>

Select 12-24 credits from the following: 1
Dissertation Research and Defense

On successful completion of the dissertation proposal, students are to conduct original research under the guidance of their dissertation director and dissertation committee members. Students are not to schedule their dissertation defense sooner than two semesters after a successful proposal defense. The dissertation must represent achievement in research, must be a significant contribution to the field of civil engineering, and should be deemed publishable in refereed journals. When the majority of the research has been completed, the candidate is to submit a written draft of the dissertation to the doctoral dissertation committee and schedule an oral defense to be attended by the doctoral dissertation committee. The CEIE department and the CEIE Graduate Coordinator must be notified of the defense at least two weeks prior to the defense to allow time to advertise it broadly.

On successful completion of the oral defense, students must submit a final dissertation that meets the guidelines specified by the Guide for Preparing Graduate Theses, Dissertations, and Projects. If the student fails to defend the dissertation successfully, the student may request a second defense following the same procedures as the initial defense. This request has no time limit, other than the general time limits for the doctoral degree as per Mason policy. The student is strongly advised to consult with the committee before scheduling the second defense. If the student fails on the second attempt to defend the dissertation, the student may be dismissed from the PhD program. Following a successful public defense and completion of the final form of the dissertation, the dissertation committee recommends the candidate for the degree of Doctor of Philosophy.

Teaching Opportunities

All PhD students are encouraged to participate in teaching activities in consultation with their major advisors. Teaching opportunities include presenting lectures, conducting recitation sessions, serving as a teaching assistant, working as a laboratory assistant, participating in teaching workshops, preparing course materials, and other related activities approved by the student’s advisor.

Environmental Engineering Minor

Banner Code: EENG

Lisa Nolder, Associate Director for Undergraduate Programs

Phone: 703-993-1675
Email: snolder@gmu.edu
Website: civil.gmu.edu/undergraduate/minors

Students with engineering majors in CEIE (p. 1177), BIOE (p. 1032), SEOR (p. 1164), and non-engineering majors in Biology (p. 643), Chemistry (p. 662), Environmental Science and Policy (p. 688), Geography and Geoinformation Science (p. 717), and Geology (p. 634) are especially encouraged to consider this offering. The minor prepares students through additional coursework for subsequent graduate studies in water and environmental engineering at Mason or elsewhere, and for employment in environmental engineering, although the minor by itself does not constitute an engineering qualification.
**Minor Requirements**

Total credits: 19

**Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 240</td>
<td>Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 355</td>
<td>Environmental Engineering and Science</td>
<td>3</td>
</tr>
<tr>
<td>CEIE 450</td>
<td>Environmental Engineering Systems</td>
<td>3</td>
</tr>
<tr>
<td>or CEIE 453</td>
<td>Water and Wastewater Treatment Processes</td>
<td></td>
</tr>
<tr>
<td>EVPP 355</td>
<td>Ecological Engineering and Ecosystem Restoration</td>
<td>4</td>
</tr>
<tr>
<td>or EVPP 378</td>
<td>RS: Ecological Sustainability (Mason Core) (p. 142)</td>
<td></td>
</tr>
<tr>
<td>or EVPP 442</td>
<td>Urban Ecosystems and Processes</td>
<td></td>
</tr>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
<td>3</td>
</tr>
<tr>
<td>or GGS 319</td>
<td>Air Pollution</td>
<td></td>
</tr>
<tr>
<td>PHYS 331</td>
<td>Fundamentals of Renewable Energy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 19

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**Admissions & Policies**

This program is no longer accepting applications for new students.

The Master of Engineering (MEng) program in combined Geotechnical, Construction, and Structural Engineering (GeoConStruct) was designed in collaboration with leading engineers in practice to develop a course of study that recognizes that geotechnical engineering, construction engineering, and structural engineering are practiced together and should be taught together in an integrated manner. Its purpose is to educate engineers for practice, for excellence in design and execution now, laying the groundwork for practice demands 25 years from now. It is a program that balances theory and practice, building on the foundation of an undergraduate degree in civil engineering.

The MEng is practice-focused and entirely course-based. Students who wish to undertake a degree requiring a project or a research thesis should consider the MS in Civil and Infrastructure Engineering (p. 1182) with concentration in geotechnical or construction or structural engineering. All courses offered for the MEng program are open to MS students.

---

**Admissions Requirements**

To be considered for admission to the MEng program, a candidate must:

- Satisfy general University and Volgenau School requirements for admission to a graduate program,
- Have earned a baccalaureate degree in engineering or a related science,
- Provide two letters of recommendation from individuals knowledgeable about the applicant’s academic or professional work,
- Provide a goals statement and professional résumé.

Acceptance to the degree program is based on an assessment of the applicant’s capacity to pursue graduate study successfully. Students are assumed to have completed an undergraduate degree in civil engineering. Consideration is given to the undergraduate record, any previous graduate work, professional work experience, and reference letters. Students with minor admission deficiencies or with undergraduate degrees in related fields, such as geology or another branch of engineering, may be provisionally admitted subject to completing an articulation program of civil engineering undergraduate courses. Courses required for articulation are not creditable towards the MEng degree.

**Research Assistantships & Fellowships**

Research Assistantships and Fellowships are typically not awarded to students pursuing the MEng Program because it is entirely a course-based degree, rather than a research degree. Students interested in Teaching Assistantships (usually reserved for full-time graduate study) should indicate their interest on their application and also contact the department after an admissions decision is made.

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**Requirements**

**Degree Requirements**

This program is no longer accepting applications for new students.

Total credits: 30

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIE 524</td>
<td>Introduction to Bridge Engineering</td>
<td>9</td>
</tr>
<tr>
<td>CEIE 525</td>
<td>Structural Evaluation and Rehabilitation</td>
<td></td>
</tr>
<tr>
<td>CEIE 531</td>
<td>Earth Retaining Structures and Slope Stability</td>
<td></td>
</tr>
</tbody>
</table>
Interdisciplinary Programs and Courses

College Code: UN

Programs

- Applied Science, BAS
- Design Thinking Minor

Applied Science, BAS

Banner Code: UN-BAS-APLS

Administration

- Janette Kenner Muir, Academic Director and Associate Provost for Academic Initiatives and Services
- Marcy R. L. Glover, Curriculum Coordinator
- Krystal Dains, Coordinator, Volgenau School of Engineering concentrations
- Jane Walker, Coordinator, School of Conflict Analysis and Resolution concentration

The Bachelor of Applied Science (BAS) is an undergraduate liberal arts degree program for adult learners. It is designed primarily to deepen student knowledge in an academic area and foster critical thinking, analytic reasoning, and an ability to synthesize information.

The BAS articulates well with specialized Applied Associate Science (AAS) degree programs, providing a streamlined path to completion of traditional academic requirements leading to the baccalaureate degree. It meets students' professional and personal goals while developing a depth of knowledge and proficiency of skill that translates well to the workplace. However, it is not organized in the same way as a traditional baccalaureate degree. Students planning graduate study should consult with an academic advisor prior to undertaking this degree program.

Admissions & Policies

Admissions

As a prerequisite to enrollment in the BAS, students must have received an Associate of Applied Science (AAS) degree from an accredited two-year institution in an approved area of specialization. Students should review specific Admissions details on the program's website. (http://bas.gmu.edu)

Policies

For policies governing all undergraduate degrees, see AP .5 Undergraduate Policies (p. 87).

Program Requirements

BAS students must fulfill all requirements for bachelor’s degrees including Mason Core (p. 142) requirements, to include 45 credits of upper-level coursework. All Mason Core (p. 142) requirements must be met with either George Mason courses or transferrable equivalents.

The minimum credit requirement for a bachelor’s degree is 120 credits; however, while there is some variation between concentration areas, fulfilling all Mason Core (p. 142) requirements and an academic concentration is likely to require most BAS students to complete at least 63-66 credits at George Mason, which may lead to over 120 credits of coursework in order to receive the degree.

Admitted BAS students will be academically advised by the appropriate BAS Program concentration Advisor to plan their course of study including completion of the Mason Core (p. 142), the BAS concentration, and any remaining requirements. See t (http://bas.gmu.edu)he website (http://bas.gmu.edu) for more information.

The degree plan outlined is based on a student who transfers in a minimum of 30 credits from a completed AAS degree. Some of these...
Credits may count only towards the elective requirement within the BAS degree.

Specific concentrations may have additional policies indicated below.

**Requirements**

**Degree Requirements**

Total credits: 120-126

Concentrations are intended to provide focus for the BAS curriculum in an area relevant to the student’s AAS degree while allowing for the breadth of study associated with a liberal arts baccalaureate degree. Please note that determination of current transfer work for these concentrations may impact course requirements.

In addition to satisfying all Mason Core (p. 142) requirements, students must satisfy the requirements for one of the seven concentrations.

**Concentrations**

- Concentration in Applied Conflict Analysis and Resolution (ACAR) (p. 1191)
- Concentration in Conservation Studies (CNST) (p. 1191)
- Concentration in Cyber Security (CYBS) (p. 1192)
- Concentration in Defense Information Systems Technology (DIST) (p. 1192)
- Concentration in Health, Wellness and Social Services (HWSS) (p. 1193)
- Concentration in Human Development and Family Science (HDFS) (p. 1194)
- Concentration in Legal Studies (LGLS) (p. 1194)
- Concentration in Managerial Leadership (MGL) (p. 1194)
- Concentration in Technology and Innovation (TCNV) (p. 1195)

**Concentration in Applied Conflict Analysis and Resolution (ACAR)**

This concentration is in collaboration with the School for Conflict Analysis and Resolution (p. 936).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAS 300</td>
<td>Building Professional Competencies</td>
<td>3</td>
</tr>
<tr>
<td>CONF 101</td>
<td>Conflict and Our World (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>CONF 301</td>
<td>Research and Inquiry in Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>CONF 302</td>
<td>Culture, Identity, and Conflict</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CONF 320</td>
<td>Interpersonal Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 330</td>
<td>Community, Group, and Organizational Conflict Analysis and Resolution</td>
<td></td>
</tr>
<tr>
<td>CONF 340</td>
<td>Global Conflict Analysis and Resolution (Mason Core) (p. 142)</td>
<td></td>
</tr>
</tbody>
</table>

**Applied Coursework**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose three credits of Skills Coursework from:

- CONF 325 Dialogue and Difference
- CONF 370 Internship Field Experience
- CONF 385 International Field Experience
- CONF 398 Special Topics in Advanced Techniques and Practices
- CONF 425 Mediating Conflict
- or foreign language completed at the 202 level.
- CONF 490 RS: Integration (Mason Core) (p. 142) 3

**Electives**

In consultation with their advisor, students are required to take 18 credits of concentration coursework; at least 9 credits must be from the CONF department. The concentration list can be found in the catalog or on our website.

Total Credits 42

**Electives (variable)**

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

**Concentration in Conservation Studies (CNST)**

This concentration is in collaboration with the School of Integrative Studies and the Smithsonian-Mason School of Conservation. This degree is ideal for students who have earned an AAS in Veterinary Technology. One semester of study at the Smithsonian-Mason School of Conservation is required for completion of degree requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BAS 300</td>
<td>Building Professional Competencies</td>
<td>3</td>
</tr>
<tr>
<td>BAS 490</td>
<td>Introduction to Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>BAS 491</td>
<td>Applied Sciences Capstone (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the Smithsonian Semesters listed below. 16

**Smithsonian Semester: Conservation, Biodiversity and Society:**

- CONS 320 Conservation in Practice
- CONS 401 Conservation Theory
- CONS 402 Applied Conservation
- CONS 410 Human Dimensions in Conservation (Mason Core) (p. 142)
- CONS 490 RS: Integrated Conservation Strategies (Mason Core) (p. 142)

**Smithsonian Semester: Wildlife Ecology and Conservation:**

- CONS 400 Conservation Seminar
- CONS 404 Biodiversity Monitoring
- CONS 405 Landscape and Macrosystems Ecology
- CONS 496 Research in Conservation (Mason Core) (p. 142)

**Smithsonian Semester: Endangered Species and Conservation:**

- CONS 400 Conservation Seminar
- CONS 406 Small Population Management
Conservation Management Planning (Mason Core) (p. 142)
Research in Conservation (Mason Core) (p. 142)

Electives
Select a minimum of 15 required elective credit hours from the following: 1
- INTS 318 Exploring Virginia’s Watersheds
- INTS 331 The Nonprofit Sector (Mason Core) (p. 142)
- INTS 334 Environmental Justice (Mason Core) (p. 142)
- INTS 336 Poverty, Wealth and Inequality in the US (Mason Core) (p. 142)
- INTS 338 Animal Rights and Humane Education
- INTS 395 Field-Based Work
- INTS 402 Plants and People - Sustenance, Ceremony, and Sustainability
- INTS 435 Leadership in a Changing Environment

Total Credits 40

1 Please note: All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

Concentration in Cyber Security (CYBS)
This concentration is in collaboration with the Volgenau School of Engineering and is only available to students who graduate with an AAS degree in Cyber Security from the Virginia Community College System.

Students must have a C or better in any course that satisfies a prerequisite for an IT course. To graduate with the BAS with a Cyber Security concentration, students must have a C or better in their core, concentration, and technical focus courses.

<table>
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<tr>
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<tr>
<td>BAS 490</td>
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<tr>
<td>BAS 491</td>
<td>Applied Sciences Capstone (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration Requirements
- IT 104 Introduction to Computing (Mason Core) (p. 142) 3
- IT 105 IT Architecture Fundamentals 3
- IT 223 Information Security Fundamentals 3
- IT 304 IT in the Global Economy (Mason Core) (p. 142) 3
- IT 343 IT Project Management (Fulfills writing intensive requirement) 3
- IT 357 Computer Crime, Forensics, and Auditing 3
- IT 429 Security Accreditation of Information Systems 3

Total Credits 78

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

Concentration in Defense Information Systems Technology (DIST)
This concentration is in collaboration with the Volgenau School of Engineering and is only available to students who graduate with an AAS degree in Applied Science. All courses in this concentration have sections offered via distance learning.
Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
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</tr>
<tr>
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<td>3</td>
</tr>
<tr>
<td>BAS 491</td>
<td>Applied Sciences Capstone (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 108</td>
<td>Introductory Calculus with Business Applications (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>IT 104</td>
<td>Introduction to Computing (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>IT 105</td>
<td>IT Architecture Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 102</td>
<td>Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>IT 106</td>
<td>Introduction to IT Problem Solving Using Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT 206</td>
<td>Object Oriented Techniques for IT Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>IT 223</td>
<td>Information Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 300</td>
<td>Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>IT 341</td>
<td>Data Communications and Network Principles</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following options: 15

Networking and Telecommunications:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IT 366</td>
<td>Network Security</td>
<td></td>
</tr>
<tr>
<td>IT 441</td>
<td>Network Servers and Infrastructures</td>
<td></td>
</tr>
<tr>
<td>IT 445</td>
<td>Advanced Networking Principles</td>
<td></td>
</tr>
<tr>
<td>IT 455</td>
<td>Wireless Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>IT 499</td>
<td>Special Topics in Information Technology</td>
<td></td>
</tr>
</tbody>
</table>

Information Systems Security:

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 366</td>
<td>Network Security</td>
<td></td>
</tr>
<tr>
<td>IT 441</td>
<td>Network Servers and Infrastructures</td>
<td></td>
</tr>
<tr>
<td>IT 462</td>
<td>Applied Cyber Threat Analysis</td>
<td></td>
</tr>
<tr>
<td>IT 466</td>
<td>Foundations of Cryptography and Security</td>
<td></td>
</tr>
<tr>
<td>IT 499</td>
<td>Special Topics in Information Technology</td>
<td></td>
</tr>
</tbody>
</table>

Electives

Select 12-15 hours of required 300/400 level elective coursework, in consultation with the advisor as need to complete the required 45 hours

Total Credits 63-66

Electives

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

Concentration in Health, Wellness and Social Services (HWSS)

This concentration is in collaboration with the College of Health and Human Services (p. 244).

To enroll in this concentration, students must have an AAS in one of the following areas:

- Health Information Management
- Hospitality Management, Nutrition Management specialization
- Nursing
- Physical Therapist Assistant
- Respiratory Therapy

Additional Concentration Requirements

To complete the Health, Wellness and Social Services concentration, students must complete one of the two following areas:

- Health Care Administration
- Physical and Mental Health Care Delivery

Health Care Administration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HAP 360</td>
<td>Introduction to Health Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>HAP 442</td>
<td>Introduction to Health Care Politics and Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 380</td>
<td>Changing Social Policies and Systems</td>
<td>3</td>
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</table>

Total Credits 12

Physical and Mental Health Care Delivery

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP 301</td>
<td>Health Care Delivery in the United States</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 295</td>
<td>Introduction to Nutrition (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 375</td>
<td>Human Behavior and the Family Life Course (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>SOCW 435</td>
<td>Introduction to Gerontology</td>
<td></td>
</tr>
<tr>
<td>SOCW 483</td>
<td>Selected Topics in Social Work Intervention</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.
### Concentration in Human Development and Family Science (HDFS)

This concentration is in collaboration with College of Humanities and Social Sciences and College of Education and Human Development.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BAS 300</td>
<td>Building Professional Competencies</td>
<td>3</td>
</tr>
<tr>
<td>HDFS 200</td>
<td>Individual and Family Development (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 211</td>
<td>Developmental Psychology (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>INTS 317</td>
<td>Issues in Family Relationships (Mason Core) (p. 142)</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 301</td>
<td>Research Methods in Psychology (Fulfills writing intensive requirement) or SOCi 303 Methods and Logic of Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>HDFS 300</td>
<td>Individual and Family Services Delivery</td>
<td>3</td>
</tr>
<tr>
<td>HDFS 400</td>
<td>Advanced Family Processes (Mason Core) (p. 142) (Fulfills synthesis requirement)</td>
<td>3</td>
</tr>
<tr>
<td>HDFS 401</td>
<td>Family Law and Public Policy (Fulfills writing intensive requirement)</td>
<td>3</td>
</tr>
<tr>
<td>HDFS 498</td>
<td>Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
<tr>
<td>HDFS 499</td>
<td>Advanced Internship and Analysis in Human Development and Family Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 31

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

### Concentration in Legal Studies (LGLS)

This concentration is in collaboration with School of Integrative Studies and College of Humanities and Social Sciences.

<table>
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<tr>
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<td>BAS 490</td>
<td>Introduction to Research Methods</td>
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<td>BAS 491</td>
<td>Applied Sciences Capstone (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 300</td>
<td>Accounting in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 302</td>
<td>Managing Information in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 306</td>
<td>Managing Projects and Operations</td>
<td>3</td>
</tr>
<tr>
<td>INTS 404</td>
<td>Ethics and Leadership (fulfills writing-intensive requirement)</td>
<td>4</td>
</tr>
<tr>
<td>INTS 435</td>
<td>Leadership in a Changing Environment</td>
<td>4</td>
</tr>
<tr>
<td>CONF 300</td>
<td>Conflict Resolution Techniques and Practice</td>
<td>3</td>
</tr>
<tr>
<td>CONF 320</td>
<td>Interpersonal Conflict Analysis and Resolution</td>
<td>3</td>
</tr>
<tr>
<td>COMM 320</td>
<td>Business and Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 401</td>
<td>Interpersonal Communication in the Workplace</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 41

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that
a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

**Concentration in Technology and Innovation (TCNV)**

This concentration is in collaboration with School of Business and Volgenau School of Engineering.

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<td>BAS 491</td>
<td>Applied Sciences Capstone (Mason Core) (p. 142)</td>
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**Concentration Requirements**

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<thead>
<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>IT 105</td>
<td>IT Architecture Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 213</td>
<td>Multimedia and Web Design</td>
<td>3</td>
</tr>
<tr>
<td>IT 214</td>
<td>Database Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 223</td>
<td>Information Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 304</td>
<td>IT in the Global Economy (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
<tr>
<td>IT 343</td>
<td>IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 300</td>
<td>Accounting in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 301</td>
<td>Managing People and Organizations in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 302</td>
<td>Managing Information in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 303</td>
<td>Marketing in a Global Economy</td>
<td>3</td>
</tr>
<tr>
<td>MBUS 305</td>
<td>Introduction to International Business (Mason Core) (p. 142)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**

42

1. All courses for this concentration are available in an online format with most offered as asynchronous delivery.

2. The Information Sciences and Technology department offers 1-credit, self-paced, online review courses; ending with an in-class final exam. Students who register for a 1-credit course and successfully pass will receive credit (not a waiver) for the corresponding 3-credit course. Students who are not successful must take the respective course at Mason to meet their degree requirements.

Review courses are available as follows:

- for IT 213 Multimedia and Web Design: IT 193 Review of Multimedia and Web Design
- for IT 214 Database Fundamentals: IT 194 Review of Database Fundamentals

**Electives (variable)**

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.
A-Z COURSES

For more detailed information on courses, see please go to AP 2 Course Information (p. 82).

See Courses at Mason (http://catalog.gmu.edu/course-search) for additional schedule details.

Course information accurate at time of publication in April 2019. For the most updated version, view course details on Patriot Web prior to registering.

Academic English (AE)

000 Level Courses

AE 000: AE Pre-Registration. 0 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the Not Gradeable (NG) scale. (p. 84)

AE 002: Core Foundations. 10 credits.
Focuses on reading and writing in daily life. Develops basic writing (forming accurate simple sentences) and basic reading (identifying main ideas and explicit details in very short functional texts) on familiar, personally relevant topics. Introduces vocabulary and grammar at the CEFR A1+ level. Designed for non-native English speakers at a mid-beginning level in written skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 20 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

AE 003: Oral Communication Skills Foundations. 6-8 credits.
Focuses on listening and speaking skills in everyday settings. Develops functions, vocabulary, grammar, and pronunciation at the CEFR A1+ level. Designed for non-native English speakers at a mid-beginning level in listening and speaking. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

AE 010: Level 1 Core. 10 credits.
Focuses on reading and writing in daily life. Develops basic writing (transitioning from sentence-level to paragraph-level) and basic reading (identifying main ideas and explicit details in short expository and functional texts) on familiar, personally relevant topics. Introduces vocabulary and grammar at the CEFR A2 level. Designed for non-native English speakers at a high-beginning level in written skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 20 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

AE 011: Level 1 Oral Comm Skills. 6-8 credits.
Focuses on listening and speaking skills in everyday settings. Develops functions, vocabulary, grammar, and pronunciation at the CEFR A2 level. Designed for non-native English speakers at a high-beginning level in listening and speaking. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 16 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

AE 012: Level 1-2 Special Topics. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

AE 013: Vocabulary in Daily Life. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

AE 014: Listening in Daily Life. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

AE 015: Writing Daily Life. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.
**AE 017: Listening and Speaking.** 6 credits. Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 020: Level 2 Core.** 10 credits.
Focuses on reading and writing in general and academic settings. Further develops paragraph writing and identifying main ideas and explicit details in readings on familiar topics. Introduces vocabulary and grammar at the CEFR B1 level. Designed for non-native English speakers at a low-intermediate level in written skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 20 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 021: Level 2 Oral Comm Skills.** 6-8 credits.
Focuses on listening and speaking skills in social and academic settings. Introduces short presentations and develops functions, vocabulary, grammar, and pronunciation at the CEFR A2+ level. Designed for non-native English speakers at a low-intermediate level in listening and speaking. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 18 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 022: Level 2-3 Special Topics.** 2-4 credits.
Offered by INTO Mason (p. 130). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 023: Basic Spelling Skills.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 024: Basic Pronunciation Skills.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 030: Level 3 Core.** 10 credits.
Focuses on reading and writing in academic and general settings. Transitions from paragraphs to short essay writing and introduces inferencing and identifying text connections. Develops vocabulary and grammar at the CEFR B1 level. Designed for non-native English speakers at a mid-intermediate level in written skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 20 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 031: Level 3 Oral Comm Skills.** 6-8 credits.
Focuses on listening and speaking skills in academic and social settings. Introduces note-taking and develops short presentations, functions, vocabulary, grammar, and pronunciation at the CEFR B1 level. Designed for non-native English speakers at a mid-intermediate level in oral skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 16 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 032: Level 3-4 Special Topics.** 2-4 credits.
Offered by INTO Mason (p. 130). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the English Language scale. (p. 84)

**AE 033: Reading Plus.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to English Language level students.
Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 034: Dictionary Skills. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 035: Developing Vocabulary. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 036: American Culture. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 040: Level 4 Core. 10 credits.
Focuses on reading and writing in academic settings. Develops comprehension and retention of modified academic and informational texts and writing a variety of academic essays on concrete and abstract topics. Covers vocabulary and grammar at the CEFR B1+ level. Designed for non-native English speakers at a high-intermediate level in written skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 20 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 041: Level 4 Oral Comm Skills. 6-8 credits.
Focuses on listening and speaking skills in academic and social settings. Introduces note-taking and develops short formal presentations, conversation management, functions, vocabulary, grammar, and pronunciation at the CEFR B1+ level. Designed for non-native English speakers at a high-intermediate level in oral skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 16 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 042: Level 4-5 Special Topics. 2-4 credits.
Offered by INTO Mason (p. 130). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 044: Intro to IELTS Academic. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 045: Developing Spelling Skills. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 046: Developing Pronunciation Skill. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 047: Intro to TOEFL iBT. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

AE 048: Present Yourself. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.
Grading:
This course is graded on the English Language scale. (p. 84)

**AE 050: Level 5 Core.** 10 credits.
Focuses on reading and writing in academic settings. Focuses on comprehension and retention of modified academic and informational texts and writing a variety of academic essays. Introduces summary writing and APA citation. Develops vocabulary and grammar at the CEFR B2 level. Designed for non-native English speakers at a low-advanced level in written skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 20 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 051: Level 5 Oral Comm Skills.** 6-8 credits.
Focuses on listening and speaking skills in academic settings. Develops note-taking, formal presentations, conversation management, functions, vocabulary, grammar, and pronunciation at the CEFR B2 level. Designed for non-native English speakers at a low-advanced level in oral skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 16 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 052: Level 5-6 Special Topics.** 2-4 credits.
Offered by INTO Mason (p. 130). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 053: Newspaper Production.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 054: TED Talks.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 055: Let's Talk Math.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 056: Business English.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 060: Level 6 Core.** 10 credits.
Focuses on reading and writing in academic settings. Develops comprehension and retention of modified academic and informational texts and writing longer academic essays and a short research paper. Covers vocabulary and grammar at the CEFR B2+ level. Designed for non-native English speakers at a mid-advanced level in written skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 20 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 061: Level 6 Oral Comm Skills.** 6-8 credits.
Focuses on listening and speaking skills in academic settings. Develops note-taking, formal presentations, conversation management, functions, vocabulary, grammar, and pronunciation at the CEFR B2+ level. Designed for non-native English speakers at a mid-advanced level in listening and speaking. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 16 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 062: Level 6-7 Special Topics.** 2-4 credits.
Offered by INTO Mason (p. 130). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to English Language level students.

**Schedule Type:** Lecture
Grading:
This course is graded on the English Language scale. (p. 84)

**AE 063: American TV Comedy.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 064: English through Pop Music.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 065: Advanced Pronunciation Skills.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 067: Acting with Americans.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 068: China 1-2-1 Orientation.** 3 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language or English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 069: China 1-2-1 Orientation.** 1 credit.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language or English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 070: Level 7 Core.** 10 credits.
Focuses on reading and writing in academic settings. Develops comprehension and retention of academic readings and writing data set descriptions, abstracts, longer academic essays, and a research paper. Covers vocabulary and grammar at the CEFR C1 level. Designed for non-native English speakers at a high-advanced level in written skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 20 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 071: Level 7 Oral Comm Skills.** 6-8 credits.
Focuses on listening and speaking skills in academic settings. Develops note-taking, formal presentations, conversation management, functions, vocabulary, grammar, and pronunciation at the CEFR C1 level. Designed for non-native English speakers at a high-advanced level in listening and speaking. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 16 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 072: Level 6-7-8 Special Topics.** 2-4 credits.
Offered by INTO Mason. May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 073: Dialogue with Americans.** 4 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

Grading:
This course is graded on the English Language scale. (p. 84)

**AE 074: Giving Presentations.** 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture
AE 075: Advanced Vocabulary. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

AE 076: Preparation for GRE. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

AE 077: Preparation for IELTS. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

AE 078: Preparation for TOEFL IBT. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

AE 079: Advanced English Grammar. 4 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

AE 080: Level 8 Core. 10 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

AE 081: Level 8 Oral Comm Skills. 6-8 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

AE 082: Level 7-8 Special Topics. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Lecture

AE 083: SuperTOEFL. 4 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Seminar

AE 088: Elective Topic 3. 2 credits.
Offered by INTO Mason (p. 130). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Seminar

Accounting (ACCT)

200 Level Courses

ACCT 203: Survey of Accounting. 3 credits.
Introduction to financial and managerial accounting. Financial accounting from viewpoint of those who prepare and use financial information. Financial accounting topics include recording financial transaction, creating financial statements, the study of cash and internal controls. Managerial accounting topics include introduction to job order costing, breakeven analysis, standard costs and variances and short term decision making. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts. Equivalent to ACCT 204.

Registration Restrictions:
Required Prerequisite: ECON 103C.
C Requires minimum grade of C.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
ACCT 204: Honors Survey of Accounting. 3 credits.
Introduction to financial and managerial accounting. Financial accounting from viewpoint of those who prepare & use financial information. Financial accounting topics include recording financial transaction, creating financial statements, the study of cash and internal controls. Managerial accounting topics include introduction to job order costing, breakeven analysis, standard costs and variances and short term decision making. Project on a global corporation is conducted to reinforce accounting concepts. Offered by School of Business (p. 888). Limited to two attempts. Equivalent to ACCT 203.

Recommended Prerequisite: Cum GPA of 3.5 or higher

Registration Restrictions:
Required Prerequisite: (ECON 103). Requires minimum grade of B.

Enrollment limited to students with the Honors College (Business), Honors College (STEM). or Honors College. attributes.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

ACCT 303: Accounting for Decision Making. 3 credits.
Examines accounting from the viewpoint of managers and users of accounting information including using financial statement information to make financing, operating, and investing decisions, recognizing how tax system and body of tax law impacts business decision making, using managerial accounting information to make operating and compensation decisions, and understanding importance of internal and external audits to business and capital markets. Notes: Students cannot receive credit for ACCT 301 and ACCT 303/ACCT 330. School of Business students will not be permitted to make more than three attempts to achieve a C or higher in ACCT 303. The third attempt requires School of Business academic advisor approval. Those who do not successfully complete this course within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Offered by School of Business (p. 888). Limited to two attempts.

Recommended Prerequisite: BUS 103 and BUS 200 are strongly recommended.

Registration Restrictions:
Required Prerequisites: (ACCT 203, U203, 204 or U204) and (BUS 210 or U210) and (MATH 106, U108, 113, U113, 114, U114, HNRT 225 or U225).
C Requires minimum grade of C.

Enrollment limited to students in the School of Business college.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ACCT 310: Introduction to Government Accounting. 3 credits.
Introductory course focusing on the financial reporting environment of government entities and financial reporting issues. Topics include introduction to government accounting framework; government financial reporting; government budgetary process; government cost accounting concepts and impact of government financial accounting on government policy setting. Due to presentation and application of course material, course only open to students enrolled in the School of Business. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: ACCT 303 or L303.
C Requires minimum grade of C.

Enrollment limited to students in the School of Business college.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ACCT 311: Managerial and Cost Accounting. 3 credits.
Develops skills in identifying business processes, transforming data into useful information, and making managerial decisions. Designed for students in all areas of management, especially those whose career aims include cost management. Topics include analyzing and managing costs, developing cost systems that facilitate decision making, identifying opportunities for improving business process, creating financial and operating budgets for planning and control, and developing measures to assess performance. Mid-term and final exams may be scheduled on Saturdays for this class. The number of class sessions will be modified to compensate for mid-term examination time. Accommodations will be made for religious conflicts, Saturday classes, and certain official university activities. A third attempt requires School of Business academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.
Recommended Prerequisite: BUS 103 and BUS 200 are strongly recommended.

Registration Restrictions:

Required Prerequisites: (ACCT 203\(^C\), U203, 204\(^C\) or U204) and (BUS 210\(^C\) or U210) and (MATH 108\(^C\), U108\(^C\), 113\(^C\), U113, 114\(^C\), U114, HNRT 225\(^C\) or U225).

\(^C\) Requires minimum grade of C.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 331: Financial Accounting II. 3 credits.**

This is the second of the three-course financial accounting sequence that examines financial accounting from the viewpoint of preparers and users of financial statements, including preparing financial statements to reflect financing, operating, and investing decisions of the firm and using financial statement information to make financing, operating and investing decisions for the firm. Mid-term and final exams may be scheduled on Saturdays for this class. The number of class sessions will be modified to compensate for mid-term examination time. Accommodations will be made for religious conflicts, Saturday classes, and certain official university activities. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:

Required Prerequisites: (ACCT 301\(^C\) or L301) or (ACCT 330\(^C\) or L330).

\(^C\) Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 332: Financial Accounting III. 3 credits.**

This is the third of the three-course financial accounting sequence that examines financial accounting from the viewpoint of preparers and users of financial statements, including preparing financial statements to reflect financing, operating, and investing decisions of the firm and using financial statement information to make financing, operating and investing decisions for the firm. Continuation of ACCT 331. Mid-term and final exams may be scheduled on Saturdays for this class. The number of class sessions will be modified to compensate for mid-term examination time. Accommodations will be made for religious conflicts, Saturday classes, and certain official university activities. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:

Required Prerequisites: ACCT 331\(^C\) and (FNAN 301\(^C\), L301, 303\(^C\) or L303).

\(^C\) Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)
ACCT 362: Advanced Accounting Analytics. 3 credits.
This course presents advanced topics in analytics used in the accounting and finance professions. The course focuses on the development of skills required to analyze data captured in enterprise resource planning (ERP) systems – the type of data most often used by accountants – and the exploration and presentation of data for decision making. The topics include a continuation of business process knowledge and advanced skills in data visualization and analysis introduced in ACCT 361. Emerging issues in the accounting and finance professions are also introduced, such as blockchain technology and distributed databases and ledgers. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: ACCT 361 C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ACCT 370: International Accounting. 3 credits.
International Accounting is study of entity reported as multinational company or entity whose reporting obligations to stakeholders are located in a different country. Course focuses on effects of financial reporting, managerial planning and control, international taxation, and international financial statement analysis on multinational reporting entity, and as the convergence of U.S. Generally Accepted Accounting Principles and International Financial Reporting Standards. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: ACCT 301 C, 302 C, 330 C, L301, L303, L330, 301T, 303T or 330T.
C Requires minimum grade of C.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ACCT 372: Financial Statement Analysis. 3 credits.
Detailed overview of financial statement analysis by users of financial statements. Students learn about common features of mandatory and voluntary accounting disclosures, behaviors and interactions among different users of financial statement information. Primary focus is analysis of financial statement information in body of financial statements and footnotes, and implications of those disclosures for firm valuation, fraud prediction, taxation, and governance. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (ACCT 301 C or 303 C) or ACCT 330 C.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

ACCT 411: Advanced Managerial Accounting. 3 credits.
Managerial uses of accounting information in planning, controlling, motivating, and decision making. Emphasizes quantitative and behavioral aspects of managerial accounting. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: (ACCT 311 C).
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ACCT 433: Advanced Financial Accounting. 3 credits.

Registration Restrictions:
Required Prerequisite: ACCT 332 C.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ACCT 441: Estate Planning. 3 credits.
Students will learn to plan efficient and effective wealth transfers to meet clients’ goals. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: ACCT 351 C.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 451:** Advanced Federal Taxation. 3 credits.
Federal taxation of corporations, partnerships, fiduciaries, and gratuitous transfers. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** (ACCT 351). 
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 461:** Assurance and Audit Services. 3 credits.
Introduction to audit and other assurance services' objectives, theory, and practices. Focuses on developing skills for interpreting business strategies and identifying related business risks, describing internal control solutions to those risks, identifying evidential sources, providing assurance about those risks and controls, and designing strategies to provide assurance services about the reliability of business information. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
**Required Prerequisites:** ACCT 331 C and 361 C. 
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 462:** Honors Seminar in Accounting. 3 credits.
An in-depth study and analysis of contemporary developments and topics of interest in accounting. Enrollment in this course is limited and competitive. Notes: The topics and format will vary. Enrollment in this course is limited and competitive. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Specialized Designation:** Scholarly Inquiry.

**Recommended Prerequisite:** Accounting major, senior standing, permission of instructor.

**Registration Restrictions:**
Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 472:** Government and Not-for-Profit Accounting. 3 credits.
Introduction to accounting for nonbusiness organizations. Emphasizes accounting issues unique to these entities, including non-exchange transactions and lack of ownership interest. Includes accounting and reporting for state and local governments, charitable organizations, and the federal government. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ACCT 331 C. 
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 491:** Seminar in Accounting. 3 credits.
Advanced study of accounting concepts and selected topics. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisite:** ACCT 331 C. 
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 492:** Internship in Accounting. 3 credits.
Opportunity to gain practical, professional experience in conjunction with academic development. An internship is an important part of academic and career preparation. May be used as elective credit, but may not be repeated. Notes: No more than 6 credits of School of Business internship coursework (BUS 492 or ACCT 492) can be applied towards a student's 120 (BU) degree applicable credits. Students must receive departmental
approval in order to register for this course; please contact the School of Business Office of Career Services for internal eligibility requirements. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to BUS 492, FNAN 492, MGMT 492, MIS 492, MKTG 492, OM 492, OSCM 492.

**Recommended Prerequisite:** 75 credit hours

**Registration Restrictions:**

**Required Prerequisites:** ACCT 330^B^ or L330.  
^B^ Requires minimum grade of B-.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Internship

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 493: Financial Planning Capstone Internship.** 3 credits.

Financial planners need unique skills and knowledge to successfully serve clients. Students will learn the cognition and decision-making of clients and planners, the techniques to facilitate effective counsel, and the planners’ professional responsibilities including those of the CFP(c) Board. Students will apply their knowledge through an internship in which they will create a financial plan for an actual client. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to FNAN 493.

**Recommended Corequisite:** FNAN 411

**Registration Restrictions:**

**Required Prerequisites:** FNAN 390^C^, 311^C^, ACCT 351^C^ and 441^C^.

^C^ Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Non-Degree level students may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**ACCT 499: Independent Study.** 1-3 credits.

Research and analysis of selected problems or topics in accounting. Notes: Must be arranged with an instructor, and students must receive written approval from the associate dean for undergraduate programs before registration. Written report required. May be repeated if topics vary. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** 9 hours in upper-level accounting courses.

**Registration Restrictions:**

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree or Washington Consortium level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Independent Study

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses


Upon completing course students will be knowledgeable about global business and trade as it applies to international financial reporting standards. Students will be capable of recording, analyzing, interpreting, and communicating financial and non-financial information for users of such information in accordance with applicable professional authoritative literature. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** ACCT 301 or BMGT 613, or equivalent with grade of B- or higher or permission of program director

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Accounting or Forensic Accounting.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Enrollment limited to students in a Master of Science degree.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 532: Foundations of Financial Reporting II.** 3 credits.

Upon completing course students will be knowledgeable about global business and trade as it applies to international financial reporting standards. Students explore topics including: current liabilities and contingencies, bonds and long term notes, leases, accounting for income taxes, pensions, shareholder’s equity and share based compensation. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** ACCT 331, ACCT 531, or equivalent and FNAN 301, BMGT 643 or equivalent, both with a grade of B- or higher or permission of program director

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Accounting or Forensic Accounting.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Enrollment limited to students in a Master of Science degree.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 551: Foundations of Taxation of Business Entities.** 3 credits.

The objective of this course is to build a sound conceptual and technical foundation for the study of federal income taxation that provides students with the tools necessary to stay current with the ever-changing
tax law. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Accounting or Forensic Accounting.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Enrollment limited to students in a Master of Science degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 561: Foundations of Assurance Services.** 3 credits.
The course focuses on planning, performing and reporting on an audit of financial statements conducted in accordance with U.S. generally accepted auditing standards (U.S. GAAS). It also introduces the public accounting profession and the services CPAs provide. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** ACCT 331 or ACCT 531 with a B- or better or permission of MSA Program Director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Accounting or Forensic Accounting.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Enrollment limited to students in a Master of Science degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 601:** Online MSA Orientation Course. 0 credits.
The main objective of this course is to help students understand program expectations and time commitment and prepare themselves for online communication and technology requirements necessary to successfully complete their online MSA degree. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Enrollment in the online MSA program or permission of the MSA academic director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students in a Master of Science degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 611: Advanced Issues in Managerial Accounting.** 3 credits.
Examines the firm’s planning and control decisions that require a more sophisticated approach than the rule-of-thumb procedures advocated for traditional cost accounting problems. Students will work with real-world issues and problems and apply the appropriate analytical model to develop relevant management accounting treatments. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MSA program or permission of the program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**ACCT 630:** Advanced Financial Accounting. 3 credits.
This course covers advanced topics in financial accounting like business combinations and preparation of consolidated financial statements. Students are also introduced to specialized accounting issues related to partnerships and segment reporting. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Accounting, Business Administration or Forensic Accounting.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 633: Advanced Issues in Financial Reporting.** 3 credits.
Students will gain knowledge and skills used in the interpretation of complex corporate financial accounting issues and in the preparation of complex financial statements. Topics include acquisitions, consolidations, derivatives, segment reporting, partnerships, and SEC reporting. Students also will learn to conduct research using the FASB Accounting Standards Codification to resolve ambiguous reporting issues. Offered by School of Business (p. 888). May not be repeated for credit.
**Recommended Prerequisite:** Permission of MSA Director if not already enrolled in the MSA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Accounting or Business Administration.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 636: Fraud Examination.** 3 credits.
Introduces strategies and techniques for fraud prevention and detection. Focuses on financial fraud such as bribery, contract rigging and kickbacks, embezzlement, fraudulent financial reporting, payroll fraud, and misappropriation of inventory and other assets. Several real-life cases and examples will be used to illustrate how to detect and prevent fraud. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 744.

**Recommended Prerequisite:** Admission to MSA program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 641: Estate Planning.** 3 credits.
Students will learn to plan efficient and effective wealth transfers to meet clients’ goals. Topics include transfers of property outright or with trusts, wills, and powers of appointment; use of the marital deduction; valuation of assets; and buy-sell agreements. Students will learn differences in planning for citizens and non-citizen as well as traditional and non-traditional families. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 651: Advanced Issues in Taxation.** 3 credits.
Examines the application of the federal income tax law to C-corporations, S-corporations, and partnerships. Topics will include the formation, operations, and dissolutions of such entities. Students will read and apply primary tax authorities to client fact patterns and engage in significant professional research and writing. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MSA program or permission of the program director. ACCT 351 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 661: Accounting Analytics.** 3 credits.
Offered by School of Business (p. 888). May not be repeated for credit.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 665: Advanced Accounting Analytics.** 3 credits.
This course presents advanced topics in analytics used in business professions. The course focuses on the development of skills required to analyze data captured in enterprise resource planning (ERP) systems – the type of data most often used by business professionals – and the exploration and presentation of data for decision-making. The topics include a continuation of business process knowledge and advanced skills in data visualization and analysis. Emerging issues in business are also introduced, such as blockchain technology and distributed databases and ledgers. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**

**Required Prerequisites:** ACCT 661\(^B\) or 361\(^C\).

\(^B\) Requires minimum grade of B-.

\(^C\) Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 670: International Accounting.** 3 credits.
International Accounting is study of entity reported as multinational company or entity whose reporting obligations to stakeholders are located in a different country. Course focuses on effects of financial reporting, managerial planning and control, international taxation, and international financial statement analysis on multinational reporting
Students in a Non-Degree Undergraduate degree may graduate, Non-Degree or Senior Plus. Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ACCT 671: Managing Data Quality and Integrity. 3 credits.
This course provides students with the current techniques used by business professionals to manage and improve data quality for later analysis and use in managerial decision making. The course focuses on the development of the skills required to collect and extract data and validate data integrity. The topics covered include data extraction, data transformation, data cleansing, data classification, and data automation. Further, the course introduces students to the topics of data warehousing and advances their knowledge of data mining techniques. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: ACCT 661/B, 361/C or MIS 310/C.
B- Requires minimum grade of B-. C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ACCT 672: Governmental and Nonprofit Accounting. 3 credits.
Accounting and Reporting for non-business organizations. Emphasizes accounting issues unique to these entities, including non-exchange transactions and lack of ownership interest. Includes accounting and reporting for state and local governments, nongovernment organizations, and the federal government. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to the MSA program or permission of the program director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ACCT 696: Directed Studies in Accounting. 1-3 credits.
Approval by faculty member and program director required prior to registration. Studies specialized topics in business not otherwise available in the curriculum. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: Admission to the MSA program or permission of the program director.

Registration Restrictions:
Enrollment limited to students with a major in Accounting or Forensic Accounting.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ACCT 690: Professional Accounting Colloquium. 3 credits.
The Professional Accounting Colloquium is designed to give graduate accounting students the opportunity to identify, develop, and improve professional skills and attributes critical to success in the accounting profession. Students will gain an understanding of these professional accounting skills and attributes from both a theoretical and applied perspective. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to the MSA program or permission of the program director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

ACCT 695: Graduate Field Experience. 1-3 credits.
This course provides a framework for approaching, successfully completing, and reflecting upon a professional field experience in accounting. The course is designed for students who will complete a semester long internship in the field of accounting either in public accounting or in industry. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: Permission of MSA Program Director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Accounting or Forensic Accounting.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 697: Special Topics in Accounting.** 1-3 credits.
Sections established as necessary to focus on various topical issues that emerge in practice of accounting. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Admission to the MSA program or permission of the program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**700 Level Courses**

**ACCT 701: Business Valuation.** 3 credits.
Provides hands-on-experience in financial statement analysis and valuation. Takes an accounting-based valuation perspective and offers a comprehensive framework for analyzing financial statements consisting of (a) Business Strategy, (b) Accounting Analysis, (c) Financial Analysis, and (d) Prospective Analysis and Valuation. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 701.

**Recommended Prerequisite:** Admission to the MSA program or permission of instructor. Grade of B or better in MBA 613.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 708: Taxes and Business Strategy.** 3 credits.
Provides a framework for making managerial decisions in a global tax environment. Examines business decisions such as location of facilities, employee compensation, mergers and acquisitions, capital and asset structure, and business form. Focuses on tax planning concepts and the effect of taxes on business decisions. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 708.

**Recommended Prerequisite:** Admission to the MSA program or permission of instructor. Completion of MBA core requirements.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 737: Fraud and the Law.** 3 credits.
Provides an overview of US legal system including law-making process, structure of court system, and how frauds are brought to trial, prosecuted and resolved. Explores common fraud statutes used to penalize wrongdoers. Course will examine evidentiary rules including types of evidence, hearsay, impeachment and privileges. Highlight the legal requirements for serving as an expert witness and testifying in court. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 738: Advanced Topics in Fraud.** 3 credits.
Course will cover advanced topics in forensic accounting. The focus will be on contemporary issues in fraud. Examples of topics include litigation support, money laundering, consumer fraud, bankruptcy, divorce and tax fraud, fraud in e-commerce, insurance fraud and mortgage fraud. The course will provide a comprehensive look at fraud investigation. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: ACCT 636C or MBA 744C. Requires minimum grade of C.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 741: Information Technology Auditing.** 3 credits.
Introduces methodologies to assess security and control issues concerning accounting and other information systems. Key feature of course is applying computer-assisted audit tools and techniques to test effectiveness of application controls. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Permission of program director if not already admitted to MSA or MBA program.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting or Business Administration.
Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 742: Governance and Ethics.** 3 credits.
Focuses on developing understanding of corporate governance issues and ethical decision making. Topics include examination of internal and external international governance issues, and ethical analysis in current business environment. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 742.

**Recommended Prerequisite:** Permission of program director if not already admitted to MSA or MBA program.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Government Accounting.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 743: Corporate Financial Reporting.** 3 credits.
Addresses contemporary issues in corporate financial reporting. Focuses on role of financial reporting in providing decision-useful information to participants of capital market, and theoretical and empirical assessments of its performance. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Permission of program director if not already admitted to MSA or MBA program.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 771: Audit Analytics.** 3 credits.
This course prepares students to enter a rapidly changing audit environment. The course provides students with current techniques used by accounting and finance professionals to improve audit efficiency and effectiveness through data analytics. The topics covered include auditing through information systems, continuous auditing, automated audit procedures, and artificial intelligence to support judgment and decision-making. Emerging issues that impact the audit function are also covered, such as blockchain technologies, information assets and digital currencies. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** ACCT 665\(^B\) or 671\(^B\).
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 772: Federal Accounting and Reporting.** 3 credits.
Designed to give graduate students the opportunity to learn about accounting and reporting issues facing government accounting professionals. The course discusses the differences between the federal sector and other sectors, and the integral use of budgetary accounting versus the more traditional financial accounting. Students will learn about federal reporting at both the agency and government-wide level, be introduced to innovative reporting practices in the federal government and will build critical writing and reporting skills. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** ACCT 672\(^C\) or 472\(^C\).
C Requires minimum grade of C.

Enrollment limited to students with a class of Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ACCT 781: Tax Analytics.** 3 credits.
This course prepares accounting students to be effective tax leaders. It focuses on emerging issues in tax analytics using case studies and applied technologies. The topics include extracting and analyzing tax data for risk analysis, tax strategy, transfer pricing, artificial intelligence, and technology automation related to the tax function. Emerging issues that impact the tax profession are also covered, such as blockchain technologies, information assets and digital currencies. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** ACCT 665\(^B\) or 671\(^B\).
B- Requires minimum grade of B-.

Enrollment limited to students with a major in Accounting Analytics or Accounting.

Enrollment limited to students in a Graduate Certificate or Master of Science degrees.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
ACCT 792: Seminar in Accounting. 3 credits.
Selective analysis of topics addressing important issues in contemporary accounting practice. Discussion of two or three major topics. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ACCT 795: Global Accounting Environment. 3 credits.
Examines the activities of accounting firms competing in the global business environment. Students will observe these activities in residency and study the decision-making processes of international accounting firms to develop an understanding of the regulatory environment of global accounting. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to the MSA program or permission of the program director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ACCT 796: Independent Studies/Directed Readings. 1-3 credits.
Research and analysis of selected problems or topics in accounting not otherwise available in curriculum. Notes: Approval of faculty member and program director required. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Permission of Program Director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

300 Level Courses
AFAM 390: Special Topics in African and African American Studies. 3 credits.
Study of selected topics related to the study of people of African descent in Africa, the United States, the Caribbean, Latin Americas and throughout the African Diaspora. Notes: May be repeated when topic is different. Offered by African & Af-American Studies (p. 518). May be repeated within the term for a maximum 12 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses
AFAM 490: Internship. 2-6 credits.
Approved work-study program in cooperation with specific organizations including area museums; NGOs; and local, state, and federal agencies. Students should arrange for an internship in the semester before they wish to enroll. Permission required from program director, Dr. Wendi Manuel-Scott. Notes: Credit to be determined by the African American Studies Program. Offered by African & Af-American Studies (p. 518). Limited to three attempts.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AFAM 499: Independent Study. 1-3 credits.
Investigation of an area related to African American studies according to individual interest, with emphasis on research. Permission required from program director, Dr. Wendi Manuel-Scott. Offered by African & Af-American Studies (p. 518). Limited to three attempts.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Anthropology (ANTH)

100 Level Courses
ANTH 114: Introduction to Cultural Anthropology. 3 credits.
Overview of major ideas and approaches to the study of cultures around the world. Surveys kinship, social organization, political economy, religious beliefs, language and other aspects of non-Western cultures. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture
**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 120: Unearthing the Past: Prehistory, Culture and Evolution.** 3 credits.
Introduction to archeology and bioanthropology. Explore issues and debates in human biological evolution, prehistory and social change, as well as lab and field methods for understanding archaeological remains. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 135: Introduction to Biological Anthropology.** 3 credits.
Uses an evolutionary perspective to introduce students to the study of humans and non-human primates as biological organisms. The course will analyze the genetic and environmental bases for modern human biological variation, understand primate behavior and biological relationships, and reconstruct the fossil record. Discussions about prehistoric skeletal remains will emphasize biological responses to changes in subsistence and social structure. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Mason Core:** Natural Science Overview, Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**ANTH 300: Civilizations.** 3 credits.
Cross-cultural and transtemporal examination of complex societies and civilizations. Explores developmental schema for rise, articulation, spread, and decline of historic and contemporary civilizations. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 302: Peoples and Cultures of Latin America.** 3 credits.
Examines Latin American cultures and selected aspects of historical record. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 307: Ancient Mesoamerica.** 3 credits.
Examines the peoples and cultures of ancient Mesoamerica, including Olmec, Maya, Teotihuacan, and Aztec societies. Major topics include the rise of civilization, the development of the Mesoamerican cultural tradition, the growth of cities, trade, exchange, writing systems, political organization, religion, conflict, and the archaeological study of this indigenous heritage. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** ANTH 120, 60 credits, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 308: Peoples and Cultures of the Middle East.** 3 credits.
Examines the anthropological literature on peoples and cultures of the Middle East, with particular attention to political and social change over the course of the 20th century. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 309: Peoples and Cultures of India.** 3 credits.
Examination of South Asia, with emphasis on India. Includes general overview of prehistory and history; impact of colonialism; contemporary Indian culture, including the changing relations of caste and class, family organization, and the roles of women, religion, and ideology; and current trends in economic development and socioeconomic differences in different parts of the country. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 312: Political Anthropology.** 3 credits.
Examines cultural and ecological contexts of political structures and competition for power in selected societies; and cross-cultural and comparative approaches to study of political conflict, leadership, values, and symbolism. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Recommended Prerequisite:** ANTH 114, 60 hrs, or permission of instructor.
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 313: Myth, Magic, and Mind. 3 credits.
Examines religion as a cultural system. Topics include mythology, ritual, symbolism, and dogma. Emphasizes cross-cultural and predominantly non-Western material. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 314: Zombies. 3 credits.
Explores how human beings across cultures have historically expressed social anxieties through references to the one particular manifestation of the undead: zombies, figures representing a state in which human beings are animate and affective in the world around them, but lack consciousness or free will. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 320: Global Africa. 3 credits.
Explores the complex and distance-defying connections shaping Africa and being shaped by Africans on the continent. Emphasizes the diversity and change characterizing peoples who are at the center of world processes. Topics include popular representations of Africa and Africans, colonial and postcolonial histories, gender, money, family, religion, environment, and health. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 322: Pirates, Conquest, and Death: Archaeology and Globalism since 1500. 3 credits.
Examines materials, theories, and methods of archaeology derived from and applied to historical sites, as they complement archival records. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 120, 60 hrs, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 324: Warfare, Violence, and Sacrifice in Antiquity. 3 credits.
Examines origin and nature of conflict in human society with an emphasis on the ancient past. Major topics include the possible role of violence in human evolution, cross-cultural studies of conflict in indigenous society, warfare in early states, and sacrifice as a ritual practice. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 120, 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 325: Field Techniques in Archaeology. 3-6 credits.
Intensive study of archaeological field techniques by directed group projects in site survey, site testing, recording techniques, and stratigraphy through discussions, demonstrations, and hands-on experience. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: ANTH 120, 60 hours, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 330: Peoples and Cultures of Selected Regions: Non-Western. 3 credits.
Examines cultures of a specific region such as Africa and the Middle East. Focuses primarily on non-Western cultures. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Specialized Designation: Non-Western Culture

Recommended Prerequisite: ANTH 114, 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 331: Refugees. 3 credits.
Introduction to causes and consequences of forced dislocation as a global issue. Covers formally recognized refugees, as well as people such as internally displaced persons and asylum seekers who are in refugee-like circumstances. Focuses on understanding the personal experiences of refugees and examining efforts on their behalf at national and international levels. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Recommended Prerequisite: ANTH 114, 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 332: Cross-Cultural Perspectives on Globalization. 3 credits.
Examines the varieties of cultural experience. Several cultures are studied in depth; with attention to local histories, global contexts, and shifting perspectives on the practice of ethnography. Notes: May be used for
ANTH 355: Food and Human Evolution. 3 credits.
Explores the relationship between diet and human adaptation from biological, archaeological, cultural, and evolutionary perspectives. Examines how humans are unique in our ability to find and process a wide range of foods. Introduces agriculture as a co-evolutionary strategy between humans and other species. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 356: Food and Human Evolution. 3 credits.
Explores the relationship between diet and human adaptation from biological, archaeological, cultural, and evolutionary perspectives. Examines how humans are unique in our ability to find and process a wide range of foods. Introduces agriculture as a co-evolutionary strategy between humans and other species. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 365: Scientific Racism and Human Variation. 3 credits.
Explores scientific methods of classification as a reflection of social values. Explains the harms of “race” and eugenics committed under the aegis of science. While critiquing the biological concept of race, considers how the social construction of race becomes part of living bodies through racism. Details modern human variation as a product of evolutionary forces. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135, 60 hours or permission of instructor.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 366: Bioarchaeology. 3 credits.
Introduces students to the study of human skeletal remains and their associated archaeological artifacts, focusing on using the human skeleton to address behavior, growth, stress, ritual, social complexity, diet, disease, and violence in the past. Uses the human body and associated artifacts to provide a detailed analysis of cultural transitions, expression of socioeconomic inequality, the origins of ritual complexity, violence, and disease. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 345: Ritual and Power in Social Life. 3 credits.
Domains of religion and ritual are conjoined by questions of power: its deployment, distribution, and forms of resistance it engenders. Course investigates connections among religious thought, ritual practice, and social action by drawing on a variety of theoretical orientations in the social sciences including structuralism, semiotics, and performance theory. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 340: Comparative Perspectives on Immigration. 3 credits.
Considers the dimensions and meanings of the immigrant experience in the United States, with a focus on the diversity of immigrants and refugees who have arrived during the past 30 years. Emphasis on the social context in which immigration occurs and on the bearing of institutional and cultural influences on patterns of adaptation, assimilation, and exclusion from the host society. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 335: Human Growth and Development. 3 credits.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 334: Human Origins. 3 credits.
Explores the fossil evidence for human and primate evolution. Exposes students to evidence for the origins of mammals and primates, and to discussions of human evolution. Uses human fossils as tools to understand evolutionary relationships (phylogenetics), behavior, functional anatomy, and broader adaptation. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 333: Scientific Racism and Human Variation. 3 credits.
Explores scientific methods of classification as a reflection of social values. Explains the harms of “race” and eugenics committed under the aegis of science. While critiquing the biological concept of race, considers how the social construction of race becomes part of living bodies through racism. Details modern human variation as a product of evolutionary forces. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135, 60 hours or permission of instructor.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 332: Humans, Disease, and Death. 3 credits.
Explores human health and disease from anthropological and evolutionary perspectives. Examines what a disease is, what causes them, how we have co-evolved with diseases, how disease patterns have changed over human history, and the future of disease. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)
Specialized Designation: Scholarly Inquiry.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 331: Human Growth and Development. 3 credits.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 330: Human Origins. 3 credits.
Explores the fossil evidence for human and primate evolution. Exposes students to evidence for the origins of mammals and primates, and to discussions of human evolution. Uses human fossils as tools to understand evolutionary relationships (phylogenetics), behavior, functional anatomy, and broader adaptation. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 329: Scientific Racism and Human Variation. 3 credits.
Explores scientific methods of classification as a reflection of social values. Explains the harms of “race” and eugenics committed under the aegis of science. While critiquing the biological concept of race, considers how the social construction of race becomes part of living bodies through racism. Details modern human variation as a product of evolutionary forces. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135, 60 hours or permission of instructor.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 328: Humans, Disease, and Death. 3 credits.
Explores human health and disease from anthropological and evolutionary perspectives. Examines what a disease is, what causes them, how we have co-evolved with diseases, how disease patterns have changed over human history, and the future of disease. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)
Specialized Designation: Scholarly Inquiry.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 327: Human Growth and Development. 3 credits.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 326: Human Origins. 3 credits.
Explores the fossil evidence for human and primate evolution. Exposes students to evidence for the origins of mammals and primates, and to discussions of human evolution. Uses human fossils as tools to understand evolutionary relationships (phylogenetics), behavior, functional anatomy, and broader adaptation. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
ANTH 370: Environment and Culture. 3 credits.
Examines relationships among environment, culture, and human behavior with an emphasis on cultural ecological explanations in mainly non-Western contexts. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: ANTH 114, or 60 hours, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 375: Culture, Power, History. 3 credits.
Use of ethnographic, archaeological, linguistic, and documentary data, in light of anthropological theory, to interpret the past and processes of change among indigenous peoples throughout the world. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 376: Food and Culture. 3 credits.
Examines a variety of experiences through foods, which bring not only nutritional but also sociocultural debates to our table (e.g. identity, memory, senses, ethnicity, gender, geopolitics, climate change, and globalization). Focuses on both Western and non-Western cultures. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 377: Mortuary Archaeology. 3 credits.
Focuses on the study of burial patterns and death rituals in antiquity by introducing students to the methods of burial excavation, examining the history of mortuary archaeology theory and engagement with processual and postprocessual schools of thought, and examining case studies from around the world to decode the complex symbolisms encoded in burial practices. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 135.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 378: Humans and Animals. 3 credits.
Provides an introduction to anthropology of human's relationship with animals across a large geographic and temporal span. From domestication of animals to animism, pets and animal classification systems, course explores society's attitudes toward and dynamic interactions with the animal kingdom. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 379: Andean Archaeology. 3 credits.
Examines 12,000 years of pre-Hispanic cultures of the Andean region of western South America. Focuses on the development and key achievements of some of the most remarkable civilizations of the New World, including the Chavin, Paracas, Cupisnique, Moche, Sicán, Nasca, Chimú, Wari, and Inka. Considers as well the nature, priorities, and accomplishments of scientific Andean archaeology. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 114, 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 380: Language and Culture. 3 credits.
Anthropological analyses of language behavior, origins, and change. Emphasizes the interplay of language, culture, anthropology, and linguistics. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: ANTH 114, 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 381: Medical Anthropology. 3 credits.
Surveys the discipline of medical anthropology, focusing on traditional medical beliefs and the diverse responses to modern scientific medicine in developing countries and among cultural minorities in the United States. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Specialized Designation: Non-Western Culture

Recommended Prerequisite: ANTH 114, 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 382: Urban Anthropology. 3 credits.
Uses tools and resources of sociocultural anthropology to study life in cities in a comparative, global context, including topics such as poverty, discrimination, migration, transnationalism, and urban planning. Case studies draw from different urban environments in Asia, Latin America, Europe, Africa, and North America. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Recommended Prerequisite: ANTH 114 and 60 credits, or Permission of Instructor.

Schedule Type: Lecture
**ANTH 386: Quantitative Methods in Anthropology. 3 credits.**
Introduces students to statistical methods used in anthropology. Emphasizes appropriate and creative application of statistical tests to anthropological problems and careful interpretation of results. Explores methods used to compare means, variances, and correlations within and between samples. Provides instruction on methods used in anthropological demography. Builds fluency in the use of statistical software. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** ANTH 114, 120, 135

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 387: Zooarchaeology. 4 credits.**
Explores the methods and theories applied in zooarchaeology through integrating hands-on assignments working with a comparative collection. Examines how archaeologists can understand human-animal relationships in the past including their role in reconstructing paleoenvironments, their contribution to ancient foodways, domestication of animals, and ritual uses of fauna. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 388: Human Osteology. 3 credits.**
Introduces students to the methods of modern human skeletal analysis in bio- and forensic anthropology. Covers introductory human skeletal and dental gross anatomy and describes analytical techniques spanning including age and sex estimation, osteometry, and paleopathology. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** ANTH 135.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 389: Human Osteology Lab. 2 credits.**
Laboratory course associated with ANTH 388. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** ANTH 135.

**Recommended Corequisite:** ANTH 388.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 390: History of Anthropological Thought. 3 credits.**
Overview of the major theoretical traditions and schools of thought in anthropology. Notes: Required for Anthropology majors, and for students applying to the Accelerated Master’s program in Anthropology. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** ANTH 114 and 60 credits, including 6 credits of ANTH 300-level (or above) courses, or permission of instructor

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 391: Forensic Anthropology. 3 credits.**
Human remains play key roles in medicolegal investigations. Provides an overview of contemporary forensic anthropology including age and sex estimation from human remains, estimation of the time since death, analysis of sharp force, blunt force, and gunshot trauma, mass disaster contexts, and the forensic archaeological recovery of buried remains. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** ANTH 135.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 392: Forensic Anthropology Lab. 2 credits.**
This lab class in the companion to ANTH 391. Involves hands-on lab exercises in the learning of methods in modern forensic anthropology, covering age and sex estimation from human remains, estimation of the time since death, analysis of traumatic trauma, individual identification, and archaeological recovery of buried remains. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** ANTH 135.

**Recommended Corequisite:** ANTH 391.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 393: Paleopathology. 3 credits.**
Provides an introduction to the field of paleopathology which involves identification of pathological conditions in human skeletal remains, and reconstruction of the natural history and co-evolution of disease with humans. Covers the differential diagnosis and history of infectious pathogens, skeletal trauma, oral diseases, metabolic abnormalities, developmental defects, and more. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** ANTH 135.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 395: Work, Technology, and Society: An IT Perspective. 3 credits.**
Introduction to the anthropology of work, technology, and society, with emphasis on information technology. Covers general conceptual issues of information technology and also involves specific practical exercises with computers, their operating systems, the logic of automated production, databases, and web-based communication. Attention also directed to social and ethical issues raised by contemporary information technology. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.
**Mason Core: Info Tech (complete) (p. 142)**

**Recommended Prerequisite:** ANTH 114, 60 hours, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 396: Issues in Anthropology: Social Sciences.** 3 credits.
Topic of contemporary interest in anthropology, focusing on social science topics of interest. Notes: May be repeated when topic is different. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 18 credits.

**Mason Core: Social/Behavioral Sciences (p. 142)**

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 398: Study Abroad.** 1-6 credits.
Field project or study abroad experience leading to the production of a written report. Notes: May be repeated with permission of department. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 6 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 399: Issues in Anthropology.** 3 credits.
Topic of contemporary interest in anthropology, changing from semester to semester, and focusing on topics such as sex roles, anthropology and ethics, and primate social organization. Notes: May be repeated for credit when topic is different. Offered by Sociology & Anthropology (p. 496). May be repeated within the term.

**Recommended Prerequisite:** ANTH 114, 60 hours, and permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**ANTH 400: Engaging the World: Anthropological Perspectives.** 3 credits.
Examines selected topics with emphasis on the integration of different kinds of knowledge and the balancing of alternative ways of assessing meaning and relevance. Topics usually drawn from issues of global economic processes, civic rights and responsibilities, ethics, museums, public policy, the environment, and migration. Notes: May be repeated when topic is different. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 9 credits.

**Mason Core: Synthesis (p. 142)**

**Recommended Prerequisite:** ANTH 114, 60 credits, or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 440: Applied Anthropology.** 3 credits.
Examines the needs and problems of communities and organizations and develops professional skills for a career in applied anthropology. Topics include the history of applied anthropology, research methods and ethics, fields in which applied anthropologists work, career options, and professionalization. Students prepare a career portfolio and other documents common in the workplace for applied anthropologists. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** ANTH 114, 60 hours, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 450: Qualitative Methods: Nonstatistical Approaches in Culture and Social Research.** 3 credits.
Explores some of the most useful nonquantitative research techniques in social sciences and offers practice in their application. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** 60 credits and 6 credits of ANTH including ANTH 114, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 488: Gender, Sexuality, and Culture.** 3 credits.
Examines how gender, sexuality, race, and class come together as analytically distinct, yet practically intertwined, systems of meaning and practice. Examples highlight questions of political economy and history while focusing on specific ethnographic or historical readings. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** 60 hours and ANTH 340 or Permission of Instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ANTH 490: Theories, Methods, and Issues II.** 3 credits.
Second of a two-course sequence that reviews major theoretical traditions and schools of thought in anthropology. Notes: Required for anthropology majors and usually taken as a senior seminar. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** 60 hours and 9 hours of ANTH, including ANTH 390, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
ANTH 495: Internship. 1-6 credits.
Supervised project in applying anthropology in relevant settings including public and historical archaeology, developmental anthropology, museums, non-profit organizations, advocacy, communications, or consulting organizations. Notes: Students must complete 45 hours of work at the internship site for each credit. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 60 credits or permission of instructor.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 496: Evolutionary Theory. 3 credits.
Considers evolution as a biological as well as cultural concept. Parallels and contrasts among conceptual approaches allow a critique of the potential of evolution as a unifying biosocial theory. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: 60 hours and 9 hours of ANTH, including ANTH 390, or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ANTH 499: Independent Research. 1-12 credits.
Individual research on a topic to be organized in advance by student and instructor. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 12 credits.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

ANTH 535: Anthropology and the Human Condition: Seminar I. 3 credits.
Examines some of the major theorists of 19th- and early 20th-century cultural theory. Marx, Freud, Durkheim, and Weber are surveyed as foundational thinkers for reading the works of such 20th-century theorists as Boas, Malinowski, Benedict, and Sapir. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 536: Anthropology and the Human Condition: Seminar II. 3 credits.
Examines contemporary theorists of anthropology, covering ongoing debates over epistemology and the multiple strands that inform anthropological theory and practice. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: ANTH 535.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 545: Ritual and Power in Social Life. 3 credits.
Domains of religion and politics are conjoined by questions of power its deployment, distribution, and forms of resistance it engenders. Course investigates connections among religious thought, ritual practice, and political action by drawing on a variety of theoretical orientations in the social sciences including structuralism, semiotics, psychoanalysis, and performance theory. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 555: Policy and Culture. 3 credits.
Examines the relevance of cultural processes to policymaking and the culture of policymaking organizations. Topics include development, welfare policy, environmental and energy policy, regulation and risk; health care and immigration policy; and the war on drugs. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 556: Human Growth and Development. 3 credits.
Introduces human developmental stages in terms of behavior, biology, and genetics. Addresses the history and methods of human growth research. Explores the environmental and socioeconomic influences on human growth. Investigates the evolution of uniqueness in human developmental stages of the human species in comparison of other
primates. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 557: Human Origins. 3 credits.
Explores the fossil evidence for human and primate evolution. Exposes students to evidence for the origins of mammals and primates, and to discussions of human evolution. Uses human fossils as tools to understand evolutionary relationships (phylogenetics), behavior, functional anatomy, and broader adaptation. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 570: Andean Archaeology. 3 credits.
Examines 12,000 years of pre-Hispanic cultures of the Andean region of western South America - that constituted the most remarkable complex civilizations of the New World. Focuses on the development and key achievements of the Chavin, Paracas, Cupisnique, Moche, Sican, Nasca, Chimu, Wari, and Inka cultures, and the nature, priorities, and accomplishments of scientific Andean archaeology. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 576: American Cultures. 3 credits.
Examines U.S. cultures and explores concept of an American culture. Course readings and discussions explore underpinnings of the American experience, document broad historical shifts, and detail the experience of diverse groups of Americans, thus forming the basis for a critical, analytical, and comparative discussion of American life and life in America. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 577: Mortuary Archaeology. 3 credits.
Focuses on the study of burial patterns and death rituals in antiquity by introducing students to the methods of burial excavation, examining the history of mortuary archaeology theory and engagement with processual and postprocessual schools of thought, and examining case studies from around the world to decode the complex symbolisms encoded in burial practices. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 578: Humans and Animals. 3 credits.
Provides an introduction to anthropology of human's relationship with animals across a large geographic and temporal span. From domestication of animals to animism, pets and animal classification systems, course explores society's attitudes toward and dynamic interactions with the animal kingdom. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 580: Environmental Anthropology. 3 credits.
Covers major theoretical trends and ethnographic works in environmental anthropology, focusing on the frameworks developed and used by environmental anthropologists, including cultural ecology, ecological
anthropology, environmentalism, political ecology, new ecology, and science and technology studies. Explores how environmental anthropologists have contributed to broader debates about modernity, globalization, power, kinship, science and technology, and human-environmental relations. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Specialized Designation:** Green Leaf Related Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 582:** Human Osteology. 3 credits.
Introduces students to the methods of modern human skeletal analysis in bioarchaeological and forensic science. Covers introductory human skeletal and dental gross anatomy and describes analytical techniques spanning including age and sex estimation, osteometry, and paleopathology. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Recommended Corequisite:** ANTH 583.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 583:** Human Osteology Lab. 2 credits.
Laboratory course associated with ANTH 582. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Recommended Corequisite:** ANTH 582.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 584:** Paleopathology. 3 credits.
Provides an introduction to the field of paleopathology which involves identification of pathological conditions in human skeletal remains, and reconstruction of the natural history and co-evolution of disease with humans. Covers the differential diagnosis and history of infectious pathogens such as tuberculosis and syphilis, skeletal trauma, oral diseases, metabolic abnormalities neoplasms developmental defects joint disease and more. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 585:** Bioarchaeology. 3 credits.
Explores the cutting-edge methods of bioarchaeological science and reconstructs ancient living worlds from the remarkable information encoded in bones via patterns of demography, disease, diet, trauma, violence, lifestyle, social structures, sex and gender, ethnicity, and identities on a global scale and over the last 10,000 years of history. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 586:** Quantitative Methods in Anthropology. 3 credits.
Introduces students to statistical methods used in anthropology. Emphasizes appropriate and creative application of statistical tests to anthropological problems and careful interpretation of results. Explores methods used to compare means, variances, and correlations within and between samples. Provides instruction on methods used in anthropological demography. Builds fluency in the use of statistical software. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 590: Forensic Anthropology. 3 credits.
Provides an overview of contemporary forensic anthropology. Topics include: age and sex estimation from human remains, estimation of the postmortem interval, analysis of sharp force, blunt force, and gunshot trauma, individual identification, forensic taphonomy, and the forensic archaeological recovery of buried remains. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Corequisite: ANTH 591.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 591: Forensic Anthropology Lab. 2 credits.
Laboratory course associated with ANTH 590. Involves hands-on lab exercises in the learning of methods in modern forensic anthropology, covering age and sex estimation from human remains, estimation of postmortem intervals, analyses of traumatic trauma, individual identification, forensic taphonomy, and archaeological recovery of buried remains. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Corequisite: ANTH 590.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 593: Zooarchaeology. 4 credits.
Explores the methods and theories applied in zooarchaeology through integrating hands-on assignments working with a comparative collection. Examines how archaeologists can understand human-animal relationships in the past including their role in reconstructing paleoenvironments, their contribution to ancient foodways, domestication of animals, and ritual uses of fauna. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 600: Anthropology and Museums. 3 credits.
Explores the changing relations between culture, indigenous groups, representation and knowledge by examining how meaning is created and conveyed in museums and exhibits. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 616: Anthropology of the City. 3 credits.
Examines classic and contemporary works in urban theory, in light of broader scholarly discussions of modernity and globalization. Uses a case-study approach to analyze topics such as: public and private space, citizenship and governance, architecture and design, housing, transportation, formal and informal settlements, and the contest over space and environmental resources in cities around the world. Notes: Course may be offered fall or spring. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 617: Political Economy. 3 credits.
Human societies have always engaged in complex political relations and economic exchanges. The cultural meanings people create are shaped by, and in turn shape, systems of power. Political economy is the attempt to understand the relationship between politics and economics, at the juncture of local meanings and global histories. Course reviews major works and models of political economy, especially as they relate to social and cultural analysis. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 620: Theory: Archaeology and Biological Anthropology.** 3 credits.
Examines theoretical approaches in archaeology, paleoanthropology, and biological anthropology. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Recommended Prerequisite:** Course in ARCHAEOLOGY or Permission of Instructor.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 631: Refugees in the Contemporary World.** 3 credits.
Explores major refugee flows since the mid-20th century, emphasizing mechanisms for providing assistance, asylum, and resettlement. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 635: Regional Ethnography.** 3 credits.
In-depth study of peoples and cultures of a specific world region (Latin America, East Asia, the Pacific, or United States). Content may include cultures defined by diaspora, migration, and other global forces and processes. Notes: May be repeated when topic is different. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 640: Applied Anthropology.** 3 credits.
Explores the application of contemporary anthropological ideas, theories, and methods to find solutions to practical problems as defined by various organizations and institutions including business, government, nongovernmental organizations, and various institutions. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ANTH 650: Methods in Anthropology.** 3 credits.
Reviews and examines major research methods commonly employed in cultural anthropological field study, with emphasis on ethnographic research design and the use of standard ethnographic techniques. Includes practice in designing ethnographic research project and using ethnographic methods and techniques in a field setting. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 655: Nationalism, Transnationalism, and States: Local and Global Perspectives. 3 credits.
Explores different approaches to understanding the interaction of nationalism, transnationalism, and states given the apparently simultaneous dissolution of demographic, economic and cultural borders, and modernist social science paradigms. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 670: Regional Studies in Archaeology. 3 credits.
Regional survey of specific culture area in archaeology to be chosen by student and instructor. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 677: Anthropology and History. 3 credits.
Considers anthropological approaches to the study of history, the ways in which people construct their histories, and social historians' effort to incorporate anthropological and ethnographic orientations into their accounts. Attention to tensions between culture and power in the constitution of historiography and to methodological challenges of interpreting qualitative and quantitative data. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 684: Independent Study in Sociocultural Anthropology. 1-6 credits.
Directed reading and research on a specific topic, agreed on by student and faculty member, resulting in a written project. May be repeated for maximum of 6 credits. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

ANTH 687: Medical Anthropology. 3 credits.
Explores the wide variety of cultural interpretations of health, illness, and curing. Examines a number of different curing systems, both traditional and modern, and compares them with cosmopolitan biomedicine. Several book-length case studies cover a wide variety of cultural groups, health topics, and theoretical orientations. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 690: Internship. 3-6 credits.
All internships must be approved by faculty advisor to ensure suitability to the student's course of study. Introduction to applied anthropology through approved work and study at a museum, institute, agency, or other approved site. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Graduate standing, with 3 hours of methods and 12 hours in program, or by permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

ANTH 698: Study Abroad. 1-6 credits.
Intended for participation in formally organized course offered by Center for Global Education or an overseas institution or engagement in a field project related to the Master's thesis or project. May be repeated for a maximum of 6 credits. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 699: Contemporary Issues in Sociocultural Anthropology. 3 credits.
Explores current issues and debates in sociocultural anthropology. Notes: May be repeated when topic is different. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

ANTH 721: Culture, Power, and Conflict. 3 credits.
Explores power and social conflict through the lens of cultural analysis. Special attention to the role of cultural differences in the structuring of conflict and the deployment of cultural theory in formulating a practice of conflict resolution. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 750: Ethnographic Genres. 3 credits.
"Genre" refers to kind, sort, or type. Course surveys the various modes of representation anthropologists use in elaborating participant-observation field work, as well as how these styles refer to and construct ethnographic "others." Explores a set of central philosophical and methodological issues in social-cultural anthropology such as framing, perspective, authority, reflexivity, and politics of style. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 769: Gender, Sexuality, and Culture. 3 credits.
Utilizes interdisciplinary material within an overall anthropological perspective on body meanings and practices. Readings highlight questions of political economy and history, focusing on specific ethnographic or historical contexts, to develop an understanding of how gender, sexuality, race, and class become analytically distinct yet intertwined systems of meaning and practice. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ANTH 796: Master's Research Project. 1-6 credits.
Capstone research project conducted under the supervision of a faculty project director and project evaluation committee. Project should be a substantial contribution to anthropological knowledge and is in lieu of a thesis. Notes: Students must initially enroll for a minimum of 3 credits of ANTH 796 and maintain continuous enrollment in 796 until project is submitted. A maximum of 6 credits of ANTH 796 may be applied to the degree. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Approval of project proposal.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ANTH 798: Thesis or Project Proposal. 3 credits.
Work on research proposal that forms basis for master’s thesis or project. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Completion of 15 credits, including all other core courses.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**ANTH 799:** *Master’s Thesis*. 1-6 credits.
Master’s thesis research and writing under direction of thesis committee.

Notes: Students must register for a minimum of three credit hours in their first semester of 799 and maintain continuous enrollment in 799 while writing and submitting a thesis. A maximum of 6 credits of 799 may be applied to the degree. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 24 credits.

**Recommended Prerequisite:** Approval of thesis proposal.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Applied Information Technology (AIT)**

**500 Level Courses**

**AIT 500:** *Quantitative Foundations for Information Systems Analysis*. 3 credits.
Provides common background in basic quantitative areas focused on decision making, information processing, and telecommunications. Topics include review of precalculus, introduction to matrix algebra, problems in optimization, and introduction to probability and statistics.

Notes: Does not fulfill any VSITE graduate degree requirement. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** MATH 108 or equivalent.

**Registration Restrictions:**
Enrollment is limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 504:** *Issues of Cyberspace*. 3 credits.
Student panels explore, report on, and make recommendations regarding major and novel problems presented by the explosive and intrusive growth of ‘cyberspace’. Legal, ethical, financial, security, utility and value to users and organizations, feasibility, and desirability aspects are considered. Each semester features a major topic area. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 502:** *Programming Essentials*. 3 credits.
Introduces basic procedural and object-oriented programming. Topics include: variables, data types, assignments, conditionals, loops, arrays, input/output, static methods, libraries, recursion, data types, API, classes, access modifiers, instance variables, constructors, instance methods, testing, encapsulations, immutability, interface inheritance, implementation inheritance, exceptions, assertions, analysis of algorithms, order of growth, memory usage, binary search, insertion sort, merge sort, stacks, array implementation of stacks, linked list implementation of stacks, queues, generics, autoboxing, iteration, symbol tables, hash tables, binary search trees, examples and applications.

Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Basic information technology knowledge.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 510:** *Learning Technology: Theory, Application and Design*. 3 credits.
Introduces students to theory, application and design of learning technologies, discussing why technology should be used for learning and education, how it should be applied, and how one can design digital tools to improve learning and education. Use of data, analytics, and emerging applications such as social media will also be discussed. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** (IT 415 or equivalent) and (SYST 469 or equivalent).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 512: Algorithms and Data Structures Essentials.** 3 credits.
Introduces analysis of algorithms and basic data structures assuming basic programming knowledge. Topics include: collections, sorting, searching, graphs, strings, B-Trees, and analysis of algorithms. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** AIT 502 with B- or above, or other academic or industry experience with programming.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 521: Software Engineering Essentials.** 3 credits.
Provides an overview of essential topics in software engineering, including problem solving with computers, requirements, software design, software development, testing, verification, validation, usability, and management. Discuss concepts related to building software, including data structures, object-oriented programming, event handling in GUIs, and web application technologies and how these concepts are handled in various languages, but without requiring the students to program. Notes: This course does not count towards MS programs offered in the Computer Science Department and cannot be used to satisfy course requirements for PhD IT students. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 524: Database Management Systems.** 3 credits.
Relational database management systems. Covers logical and physical database design; query languages and database programming; and examines commercial systems. Computing lab. Notes: This course does not count towards MS programs offered in the Computer Science Department and cannot be used to satisfy course requirements for PhD IT students. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Academic or industry experience with database systems.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 542: Fundamentals of Computing Platforms.** 3 credits.
Contemporary information systems are platforms inextricably combining operating systems and networks. This graduate course provides an overview of OS and networking elements of information systems, and examines the particular issues relating to the range of platforms, from handheld mobile devices to cloud and supercomputer systems. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Academic of industry experience with operating systems and computer networks.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Senior Plus.

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 580: Analytics: Big Data to Information.** 3 credits.
Course provides an overview of Big Data and its use in commercial, scientific, governmental and other applications. Topics include technical and non-technical disciplines required to collect, process and use enormous amounts of data available from numerous sources. Lectures cover system acquisition, law and policy, and ethical issues. It includes brief discussions of technologies involved in collecting, mining, analyzing and using results. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 581: Problem Formation and Solving in Big Data.** 3 credits.
The course explores challenges facing analysts exploiting Big Data or Bespoke Data in combination with Big Data, and looks at solutions, mindful of the fact that our intellectual and practical practices are based entirely on the 5000 year old Bespoke Data paradigm, and considering that Big Data practices are too recent to lead to comparable Big Data tools and practices. Notes: Course may be used in other certificate and degree programs. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 582: Metadata Analytics for Big Data.** 3 credits.
Course explores technical and analytical issues, solutions and gaps in processing large volumes of data by leveraging metadata. The goal is to find "facts of interest" (Intelligence) that represent threats to, or even opportunities for, a given industry or domain (e.g., healthcare, finance or national intelligence/national defense) where there is limited time. Notes: Course may be used in other Certificate or Degree programs. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 580: Topics in Applied Information Technology.** 3 credits.
Topics in the application of information technology. Students are expected to participate actively through class dialogues and the crafting of IT solutions to specific problem areas. Notes: Course cannot be used to satisfy course requirements for PhD IT students. Offered by Info Sciences & Technology (p. 1117). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 597: Developing IT Leaders of Integrity.** 3 credits.
Considers the cultural and organizational influences and focuses on leadership's ethical dimensions. Students identify their core values, study the attributes of effective and toxic leaders, and examine the difference between managing and leading through selected readings, discussions, team projects, in-class activities and guest presentations. Students practice and receive in-class coaching to hone their leadership skills. Notes: Course cannot be used to satisfy course requirements for PhD IT students. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Registered student in MS, Applied IT or instructor's permission.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**AIT 501: Foundations of Applied Information Technology.** 3 credits.
Introduces students to foundational scholarship in applied information technology. Reviews seminal readings and applications of information technology. Students learn about the interdisciplinary history of the field, are introduced to influential scholars and important topics, and get an overview of key theoretical paradigms in applied information technology. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Admission to a graduate program in Applied IT.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AI T 602:** Introduction to Research in Applied Information Technology. 3 credits.
Introduces students to research methods required to conduct original research in applied information technology. Reviews different research approaches and methods, discusses issues of data collection, validity reliability, data analysis, and interpretation. Throughout, seminal research papers will be used as case studies and students will also learn to read and understand research. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Admission to a graduate program in Applied IT.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AI T 603:** Research Practice. 3 credits.
Complementing AI T 602’s treatment on the nature of AI T research, this course examines various pragmatic aspects of conducting research, including: research venues, public & private funding sources, grant proposals, publishing, regulation and reporting obligations, operating labs and centers, legal and intellectual property issues, collaboration nationally and internationally. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** AI T 602 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AI T 614:** Big Data Essentials. 3 credits.
Hands-on course discusses emerging technologies for big data analytics and their applications in real-world environments. Students apply learned concepts and best practices using several emerging technology tools simulating development, implementation, and use of big data analytical systems. Topics include RDBMS, SQL, NoSQL, R, MapReduce Programming paradigm, Hadoop, HDFS, HIVE, PIG and others in the Hadoop ecosystem for unstructured data analytics. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** AI T 524, or industry experience with database systems.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AI T 622:** Determining Needs for Complex Big Data Systems. 3 credits.
Explores the requirements, design, organization, and management of large data analytics ("Big Data") projects, including architecture of data analytics systems, roles of Data Scientists and Data Analytics Project Managers, tools and methods for conducting data analytics research, and data governance, security, curation, privacy, and legal issues. Includes review of case studies from social media, government, and industry, definitions and concepts, and communication requirements. Principles, explained and demonstrated, are applied by students to case study based projects and individual assignments/labs. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Admission to a graduate program in Applied IT or Health Informatics, or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
AIT 624: Knowledge Mining from Big-Data. 3 credits.
Introduction to methods and tools related to knowledge mining/representation/visualization, and annotation and retrieval for Big-Data Applications from an applied perspective with the focus on emerging research problems. This course combines survey lectures with in-depth presentation of relevant issues through seminars, and hands-on experience using existing technologies and public data sources. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Registration Restrictions:
Recommended Prerequisite: AIT 582^B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AIT 631: Advanced Decision Making in IT Ventures. 3 credits.
The course provides students with an understanding of decision making processes and methodologies needed to successfully run IT companies. Topics include: assessment of IT ideas and investments; measuring IT investments performance; forecasting methods; multi-criteria information technology decision making methods; decision support systems; value analysis and benefit/risk methodologies. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Registration Restrictions:
Recommended Prerequisite: IT 496 or equivalent.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AIT 650: Distributed Systems and Overlay Networking. 3 credits.
This graduate level seminar examines advanced networking research topics and potential applications, including distributed systems, peer-to-peer and overlay net workings, routing, protocols, replication strategies, tree formation, resource sharing, fault tolerance, and network modeling. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Registration Restrictions:
Recommended Prerequisite: Thorough understanding of computer networking, IP and TCP protocols, congestion control, queuing, and addressing and routing mechanisms.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AIT 660: Cyber Security Fundamentals. 3 credits.
Introduces fundamental security principles and real-world applications of cyber security. Topics covered in the course include access control, common classes of attacks, monitoring, attack and intrusion detection, basic cryptography, computer security models, legal and privacy issues, and risk analysis. The course also provides students with opportunities to gain hands-on experience with several security tools (e.g., protocol analyzers). Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AIT 664: Information: Representation, Processing and Visualization. 3 credits.
The course explores basic concepts to understand and analyze the design of information systems, and focuses on conceptual understanding of data, information, and knowledge, boundaries in representing and processing information for humans and machines, information theory, and basic techniques to organize, structure, and interact with the information through visualization. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Registration Restrictions:
Recommended Prerequisite: AIT 524 or permission of department.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
AIT 665: Managing Information Technology Programs in the Federal Sector. 3 credits.
This case-study and research seminar introduces students to the unique complexities of acquisition in the Federal Sector including Congressional and Executive Branch oversight and reporting. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AIT 670: Cloud Computing Security. 3 credits.
Offers a survey of security and privacy issues in Cloud Computing systems, along with an overview of current solutions and available technologies. Examines cloud computing models and threat model and security issues related to data and computation outsourcing, and explores practical applications of secure Cloud Computing. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Recommended Prerequisite: AIT 542.

Registration Restrictions:
Required Prerequisite: AIT 660B.
B Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AIT 671: Information System Infrastructure Lifecycle Management. 3 credits.
Examines information system infrastructure lifecycle management including the audit process, IT governance and best practices, system and infrastructure control, IT service delivery and support, protection of information assets, physical security, business and disaster recovery. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Recommended Prerequisite: AIT 670 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AIT 672: Identity and Access Management. 3 credits.
Provides a hands-on in-depth description of the principles, concepts, and technology of Identity Management. Topics include digital identity, credentials, authentication, authentication protocols, trust frameworks, cryptography and digital signatures, identity tokens (smart cards), and smart card-based identity verification and authorization applications. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Recommended Prerequisite: Admission into MS AIT program or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AIT 673: Cyber Incident Handling and Response. 3 credits.
Examines Computer Emergency Response Team (CERT), including Incident Response, Vulnerability Assessment, Incident Analysis, Malcode Analysis, Forensics and Investigations. Includes exercises in CERT operations and a final Incident Handling project. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Recommended Prerequisite: AIT 670 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 674:** *Research, Development and Technology in the Intelligence Community.* 3 credits.
Provides overview of research, development and engineering components of agencies within U.S. Intelligence Community, how they prioritize research and deliver products used in collection, processing, and dissemination of information. Examines different types of technical intelligence and related phenomenologies employed in their collection. Highlights evolution of technologies used in gathering and discusses new and emerging trends in intelligence collection and analysis. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 675:** *Overview of the National Intelligence Community.* 3 credits.
Introduces structure and basic operations of the U.S. national intelligence community (IC). Students learn general information about organization, structure and missions of the IC and about the tools and techniques employed by intelligence agencies of the U.S. and other intelligence services. Surveys the range of intelligence problems and challenges, types of data and data collectors employed, and how information is processed, analyzed, and disseminated. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Admission into the MS-AIT degree program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 676:** *Intelligence Technologies, Research and Development in the Intelligence Community.* 3 credits.
Overview of R & D and engineering components of agencies within U.S. Intelligence. Describes: process by which these agencies prioritize research and deliver products to collect, process and disseminate information; types of technical intelligence and the related phenomenologies employed in their collection; evolution of technologies used in gathering, and; discusses new and emerging trends in intelligence collection and analysis. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Admission into the MS-AIT degree program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 677:** *Intelligence Analysis Methods.* 3 credits.
Presents various intelligence analysis methods addressing basic topics: substance-blind analysis of evidence and its credentials, chain of custody analysis, combination of evidence, divide and conquer paradigm for analysis, sources of uncertainty, competing hypotheses and analyses. Discusses case studies in various domains following a hands-on approach using educational analysis tools. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** AIT 524.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 678:** *National Security Challenges.* 3 credits.
Presents the process by which decision makers identify and prioritize intelligence problems and allocate collection and analysis resources to their solutions. Discusses nation-state issues such as Russia, China, and Iran, and transnational issues such as terrorism, weapons proliferation, narcotics and smuggling, and cyber conflict and the intelligence
shortcomings and needs in regard to these problems. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Admission into the MS-AIT degree program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 679:** Law and Ethics of Big Data. 3 credits.
Examines Law, Ethics and Policy in Big Data operations. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MS, AIT program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 680:** Social Media in Homeland Security Operations. 3 credits.
Overview of social media uses by Homeland Security agencies and U.S. adversaries, in both active and passive modes, including recruitment and disinformation. Examines regulations and laws governing social media usage. Explores future technological developments. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Registered students in Homeland Security Information Systems and Cyber MS or permission of Instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 681:** Secure Software Development. 3 credits.
Provides secure software development approaches for putting software security principles into practice and addressing software-induced security risk by studying software security fundamentals and software security best practices. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** AIT 542B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 682:** Network and Systems Security. 3 credits.
Introduces the principles and practices of cryptography, network security, and secure software by covering security policies, models, and mechanisms for secrecy, integrity, and availability; basic cryptography and its applications; secret key cryptography; hash functions; basic number theory and public key cryptography; trusted intermediaries, and network security (firewalls, IDS, IPsec, and SSL) etc. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** AIT 660.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 685:** Capstone Seminar. 3 credits.
Student team-based experience grounded on solid understanding of the proceeding nine courses mastered in each of the program’s three areas of study. Teams analyze cases of mega-system programs from the 20th Century. Notes: Course cannot be used to satisfy course requirements for
PhD IT students. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Completion of all core courses and at least nine credits of concentration courses in the program, or permission of department.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment limited to students in the VS-MS-AIT program.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 686: Capstone: Student Design Solution.** 3 credits.
Student teams examine several historical or hypothetical cases that demonstrate vulnerabilities to the homeland security of the nation. Task is to choose one case, conduct appropriate outside research, then design and brief detection/prevention/mitigation processes that can protect the nation. Must be among the last two courses attempted in the degree program. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 690: Advanced Topics in Applied Information Technology.** 3 credits.
Students participate actively through class dialogues and the crafting of IT solutions to specific problem areas. Notes: Course cannot be used to satisfy course requirements for PhD IT students. Offered by Info Sciences & Technology (p. 1117). May be repeated within the term.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
700 Level Courses

**AIT 701: Cyber Security: Emerging Threats and Countermeasures.** 3 credits. The course covers the most modern and challenging cyber threats organization must defend against, and discusses existing solutions and open research problems. Topics include, but are not limited to, advanced persistent threats, attacks on cyber physical systems, ransomware, and identity theft. Through the course, students are challenged to think about innovative solutions to address some of the most pressing open problems. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: AIT 660B- and 512B-.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 702: Incident Handling and Penetration Testing.** 3 credits. Presents students with a principled approach to ethical hacking, and offers an in-depth analysis of the overall process, including aspects related to scanning, testing, ethically attacking, and eventually securing systems and networks. The course covers popular attack tools such as Social Engineering and DDoS, and concludes with a discussion about open challenges and current research in the area. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: AIT 660B-.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 710: Design of Learning and Educational Technologies.** 3 credits. Examines foundations, theoretical perspectives, underlying learning theories, case studies, and key enabling technologies to provide context for understanding, designing, and researching learning and educational technologies. Considers technologies for diverse areas and users including teachers, instructors, higher education and K-12 learners, and learning among informal communities of interest. Technologies demonstrations are combined with hands-on activities involving participation in multiple learning environments. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** AIT 501 or permission of department.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 711: Rapid Development of Scalable Applications.** 3 credits. Presents software engineering, programming techniques, security practices, platforms and tools necessary for rapid development of applications. Provides a survey of programming techniques and static code analysis, including security and privacy consideration throughout the application life cycle. Students work in small teams and develop or maintain scalable applications exercising risk based analysis and techniques and practices presented in the course. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: AIT 512B- and 524B-.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 712: Applied Biometric Technologies.** 3 credits. The need for accurate automatic human identification has been increasing as people are becoming more electronically connected. Thus, the use of biometrics has spread rapidly. Identity is very valuable and the ability to establish identity is critical to many transactions. Biometric recognition has been incorporated in several high security applications such as protection of critical resources, fraud prevention and border control. This course concentrates on advantages that biometrics brings to computer security as well as on current challenging issues such as security strength, recognition rates, and privacy. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Basic knowledge of Digital Image Processing

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 716: Human Computer Interaction.** 3 credits. Covers the foundations of Human Computer Interaction, including: (1) Basic definitions and motivations of HCI, history, theories, interaction
paradigms, design principles and models; (2) User-centered design methods, studies, design approaches for interfaces and interaction, quality factors, evaluation methods and techniques for data analysis; (3) Research frontiers of HCI, accessibility, universal design, and ubiquitous computing (mobile and wearable applications). Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 721: Design of IT Artifacts, Applications and Systems.** 3 credits.
This course will introduce students to design principles and design thinking in applied information technology. Students will learn different approaches to design IT applications across a range of domains. Students will learn how to approach design of systems for large organizations and also for individuals. Students will learn about the interdisciplinary nature of design and get introduced to influential designers. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Enrollment in the IST concentration of the PhD in IT program and AIT 501, or permission of department.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 724: Data Analytics in Social Media.** 3 credits.
Introduce the necessary theories and the state-of-the art techniques in Web mining, network analysis, information retrieval, and predictive modeling to study emerging problems with social media. These problems include information diffusion, recommendations, behavior analysis, and event analytics in social media. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: AIT 664B-.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 726: Natural Language Processing.** 3 credits.
This is an introductory course on natural language processing. It will focus on studies of textual data using rule-based and statistical methods. The goal will be to create computer programs that analyze, interpret, and even generate human language. Topics include: Lexical, syntactic, and semantic elements of language; Statistical properties of language; Rule-based and data-driven approaches to building language models; Machine learning for understanding language; Application of NLP to real-world problems such as de-identification and question answering. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Python programming. Statistics or probability. Machine learning.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 734: Advanced Web Analytics Using Semantics.** 3 credits.
Covers a range of current practices for metadata extraction, knowledge discovery from big complex data, as well as knowledge representation and reasoning. This course discusses Data Modeling issues in Web Information Systems and Internet of Things (IoT) Web Semantics. Current trends and open problems are also covered in this course. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** AIT 582, 624.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 736: Applied Machine Learning.** 3 credits.
Machine learning as a field is now incredibly pervasive with several applications such as homeland security face recognition, self-driving car, social media, bioinformatics, etc. This course provides a broad introduction to machine learning and statistical pattern recognition. It introduces interdisciplinary machine learning techniques such as statistics, linear algebra, optimization, and computer science to create automated systems able to make predictions or decisions without human intervention. This class will familiarize students with a broad cross-section of models and algorithms for machine learning, and
prepare students for research or industry application of machine learning techniques. The course also provides students with opportunities to gain hands-on experience with several machine learning tools. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

**Recommended Prerequisite:** Basic knowledge of probability theory, statistics, linear algebra and programming.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 790: Advanced Special Topics in Applied Information Technology.** 3 credits.
This course covers doctoral-level topics of interest not routinely covered by existing courses. Course material may be chosen from various areas of applied information technology. Students are expected to participate actively through class dialogues and the crafting of IT solutions to specific problem areas. This course may be repeated for credit when subject differs. Offered by Info Sciences & Technology (p. 1117). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AIT 799: Master's Thesis.** 1-6 credits.
Research project chosen and completed under guidance of graduate faculty member that results in a thesis manuscript and a presentation accepted by a committee of three faculty members. Offered by Info Sciences & Technology (p. 1117). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Open only to students in the MS AIT program with at least 18 credit hours of coursework prior to registration and with advisor approval.

**Registration Restrictions:**
**Required Prerequisite:** AIT 699^B.

B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**AIT 800: Applied Information Technology Colloquium.** 1 credit.
Students attend a series of colloquia including talks by distinguished speakers, faculty candidates and Mason faculty. Topic areas include research advances in technology, its application, and policy issues.

Notes: Students must attend a minimum of three events per semester to earn one credit in this course. PhD INFT students with a concentration in Information Science and Technology must complete at least two credits of AIT 800. Offered by Info Sciences & Technology (p. 1117). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of AIT Core and at least 6 credits of AIT Field Requirements in PhD program.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Arabic (ARAB)**

**100 Level Courses**

**ARAB 101: Introduction to the Arabic Language.** 3 credits.
Introduction to Arabic language, dialects, countries, and culture.

Beginning modern standard and classical Arabic, with emphasis on the written language, script and phonology. Basic grammar covering gender, numbers, cases, prepositions, nominal sentences, and basic conversation and greetings. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to ARAB 110.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARAB 102: Introduction to the Arabic Language.** 3 credits.
Introduction to developing reading skills in formal settings. Emphasizes modern standard Arabic in oral communication. Beginning grammar level focuses on verbal sentences, present tenses, questions, and compound nouns. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to ARAB 110.

**Recommended Prerequisite:** ARAB 101.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARAB 104: Elementary Arabic.** 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to ARAB 101, ARAB 102.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
200 Level Courses

**ARAB 201: Intermediate Arabic I.** 3 credits.
Further development of listening, speaking, reading, and writing skills. Advanced level of vocabulary. Grammar covers past tenses, subordinated conjunctions, and introduction to passive voice. Notes: Also introduces Arabic dictionary. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** ARAB 101, 102.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARAB 202: Intermediate Arabic II.** 3 credits.
Emphasis on application of language skills to reading, composition, and discussion. Focuses on language structure, format of developing vocabulary from verbs, covering different derivations, and language patterns. Leads to learning the use of Arabic dictionary in depth. Grammar covers passive voice and verbal nouns. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** ARAB 201.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

**ARAB 300: Advanced Arabic.** 3 credits.
Introduces new complex syntactical and grammatical structures for critical enhancement of fluency in Modern Standard Arabic. Emphasis is placed on sentence structure and vocabulary enrichment. Students also gain additional exposure to linguistic diglossia, culture, and history. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** ARAB 202 or equivalent, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARAB 350: Media Arabic I (Written Media).** 3 credits.
Develops advanced reading skills through work with current written media in Arabic. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** ARAB 330 and 331 or appropriate placement score or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARAB 351: Media Arabic II (Spoken Media).** 3 credits.
Develops advanced listening and speaking skills through work with current broadcasts in Arabic TV and Radio. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Recommended Prerequisite:** ARAB 350 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARAB 355: Advanced Arabic Media: Debates & Context.** 3 credits.
Multilevel open-source media analysis and advanced language acquisition class. In addition to developing effective strategies for discourse analysis in Arabic, students will gain exposure to core issues and debates within the current Arab world. Secondary source readings and lecture material focus on issues of rhetorical and aesthetic persuasion, propaganda, censorship, media bias and fake news. Offered by Modern & Classical Languages (p. 424). Limited to two attempts.
Recommended Prerequisite: ARAB 300

Registration Restrictions:
Required Prerequisite: ARAB 202.
C Requires minimum grade of C.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARAB 360: Topics in Arabic Cultural Production. 3 credits.
Focuses on major trends and issues in modern Arabic cultural production. In addition to material from the Middle East and North Africa, the course surveys works of art, cinema, media, and literature from across the global Arabic diaspora. Notes: Some knowledge of Arabic is preferable. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARAB 375: Study Abroad - Arab World. 1-6 credits.
Designated study abroad programs in the Arab world. Notes: must be approved by Arabic program coordinator. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: ARAB 110.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARAB 380: Arabic Dialects. 3 credits.
Study of the structure of one Arabic dialect with comparison to Modern Standard Arabic and the classical Fus-ha. Includes study of literature, proverbs, and culture associated with that dialect. Notes: May be repeated when dialect covered is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: ARAB 202 or equivalent, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARAB 390: Translation Methods: Arabic to English. 3 credits.
Provides students with essential tools and techniques to translate Arabic texts to English. Includes practice applying these techniques to a variety of documents including literary, media, and legal texts. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: ARAB 330 and 331 or appropriate placement score or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

ARAB 420: Survey of Arabic Literature. 3 credits.
A survey of Arabic literature from its genesis to the present day. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Specialized Designation: Non-Western Culture

Recommended Prerequisite: Six credits of 300 level courses taught in Arabic or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARAB 430: Advanced Arabic Grammar. 3 credits.
Introduction to traditional Arabic grammar. Covers parts of speech, sentence structure, case marking, and verb structure. Combines traditional with modern approaches to Arabic grammar and includes practical drills. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: 6 credits of 300 level Arabic or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARAB 440: Topics in Arabic Religious Thought and Texts. 3 credits.
Survey of the religious and intellectual heritage of the Arab world. Notes: May be repeated when topic and texts are different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Mason Core: Capstone (p. 142)

Specialized Designation: Non-Western Culture

Recommended Prerequisite: Six credits of 300 level Arabic or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARAB 470: Special Topics in Modern Arabic Studies. 3 credits.
Addresses core topics in the study of the Arab world through the lens of literature, language and aesthetics. Topics may include the Nahdha or ‘Renaissance’ period of the late nineteenth century, Black and minority cultural productions, diaspora studies, post-colonialism or literary movements of the twentieth and twenty-first century. Topics will vary. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: ARAB 325

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
Art History (ARTH)

100 Level Courses

ARTH 101: Introduction to the Visual Arts. 3 credits.
Introduction to the content and principles of the visual arts. Approach varies with instructor. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 102: Symbols and Stories in Art. 3 credits.
Introduces themes and imagery in art. Approaches and traditions to explore vary with the instructor. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 103: Introduction to Architecture. 3 credits.
Introduces study, principle, and understanding of art of architecture. Approach varies with instructor; may be historical, geographical, technical, or thematic. Notes: Field trips required. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 104: Design in the 20th Century. 3 credits.
This class will offer a chronological overview of the history of design in the 20th century, including industrial design, communication design, interior and landscape architecture, as well as corporate branding and new media from each period/major design movement. Topics discussed will include major design styles and movements, significant designers, manufacturers, and design-related companies, innovations in technology and material use, and the development of sales, marketing, and user-focused design. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

ARTH 200: History of Western Art I. 3 credits.
Major periods, monuments, and themes of Western art and architecture. Introduces Washington, D.C., museum collections and a historical framework for further study in art history. Covers prehistory, the ancient world, and the Middle Ages. Notes: Designed as a two-course sequence, but each part may be taken independently without prerequisite. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 201: History of Western Art II. 3 credits.
Major periods, monuments, and themes of Western art and architecture. Introduces Washington, D.C., museum collections and a historical framework for further study in art history. Covers the art of the Renaissance, the baroque period, and modern Europe and the Americas. Notes: Designed as a two-course sequence, but each part may be taken independently without prerequisite. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 203: Survey of Asian Art. 3 credits.
Introduces the arts of South, Southeast, and East Asia. Examines aspects of the culture and history of Asia. Discusses monuments and artifacts in a variety of media and their relation to social and historical contexts. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Specialized Designation: Non-Western Culture
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 204: Survey of Latin American Art. 3 credits.
Introduces arts of Latin America from pre-Columbian to modern era. Discusses important examples of painting, sculpture, and architecture in relation to culture and history of region. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Specialized Designation: Non-Western Culture
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 206: Survey of African Art. 3 credits.
Introduces arts of Africa, from antiquity to the present day. Presents a variety of arts in relation to their historical and cultural contexts, and makes use of local museum resources. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Specialized Designation: Non-Western Culture

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

ARTH 303: National Traditions. 1-3 credits.
Studies traditions of art and architecture within a single selected country or historical region. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: 24 hours or permission of instructor.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 311: Design of Cities. 3 credits.
Explores problems in urban design in a particular geographical region or historical period. Approach varies with instructor and may involve archaeological or theoretical approaches appropriate to the specific context. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 credits.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 315: Modern Architecture. 3 credits.
Studies in modern architecture from the Beaux Arts movement to the present; an investigation of stylistic, structural, or theoretical innovations. Offered by History & Art History (p. 392). Limited to three attempts.

Recommended Prerequisite: 24 credits.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 318: Art and Archaeology of Ancient Egypt. 3 credits.
Explores the art, architecture, and archaeology of ancient Egypt in its cultural and historic context. Besides the famous monuments, students will also examine the influence of ancient attitudes about cultural identity on the art of the period as well as the impact of ancient Egyptian art on ancient Greece and modern western culture. Offered by History & Art History (p. 392). Limited to three attempts.

Specialized Designation: Non-Western Culture
Recommended Prerequisite: 24 credits (sophomore standing)

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 319: Art and Archaeology of the Ancient Near East. 3 credits.
Aspects of the art, archaeology, and culture of ancient Near East and Bronze Age Mediterranean. Approach varies depending on instructor; emphasis may be on Mesopotamia, Iran, Egypt, Anatolia, the Levant, or the Aegean. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)
Specialized Designation: Non-Western Culture
Recommended Prerequisite: 24 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 320: Art of the Islamic World. 3 credits.
Introduction to Islamic art, from the time of Muhammad to present. Cultural and regional approach, utilizing local museum collections. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)
Specialized Designation: Non-Western Culture
Recommended Prerequisite: 24 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 321: Greek Art and Archaeology. 3 credits.
History of ancient Greek architecture, sculpture, and painting. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Recommended Prerequisite: Completion of 24 credits.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 322: Roman Art and Archaeology. 3 credits.
History of Roman architecture, sculpture, and painting. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)
Recommended Prerequisite: Completion of 24 hours.
Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 324: From Alexander the Great to Cleopatra: The Hellenistic World. 3 credits.
Arts of the Hellenistic age within the context of history and culture of the period. Explores the powerful dynasties ruling wealthy empires; achievements in learning and literature housed in the Great Library at Alexandria; baroque sculpture adorning the Altar of Zeus at Pergamon; and Roman collectors of Greek art and antiques. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: 24 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 333: Early Christian and Byzantine Art. 3 credits.
Aspects of medieval art and culture in eastern Mediterranean world. Topics may include late antiquity, early Christianity, and the Byzantine empire and its neighbors. Designed to take advantage of unique local museum resources. Notes: Specific focus varies with instructor. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 hours.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 334: Western Medieval Art. 3 credits.
Aspects of art and architecture in medieval Europe, from the fall of the Roman Empire through the Gothic period. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 340: Early Renaissance Art in Italy, 1300-1500. 3 credits.
Studies in architecture, sculpture, and painting in the age of Giotto, Ghiberti, Masaccio, and Botticelli. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 341: Northern Renaissance Art. 3 credits.
Studies in the art of France, Germany, and the Netherlands in the age of Van Eyck and Durer. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 hours.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 342: High Renaissance Art in Italy, 1480-1570. 3 credits.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 hours.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 343: The Art of Venice. 3 credits.
This course studies Venetian society and culture through the visual arts. Venice was a center of maritime trade in the late medieval and early modern Europe. Situated on the northeast coast of Italy, Venice was a hub for merchants, pilgrims, diplomats, soldiers, and sailors traveling around the Mediterranean region. These encounters shaped Venice's rich visual and material culture, which integrated features from other parts of Italy, northern Europe, the Byzantine Empire, Ottoman Turkey, North Africa, and Classical Greece and Rome into a distinctive aesthetic. In this course, we will study the major monuments (e.g., the church of San Marco and the Ducal Palace) and the celebrated artists (e.g., the Bellini family, Titian, Palladio, and Tiepolo). We will also consider other media that are often left out of art history surveys but were equally important to Venetian art, including the city's famous glass production, luxury textile industry, print and publishing, and mosaics. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: 24 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
ARTH 344: Baroque Art in Italy, France, and Spain, 1600-1750. 3 credits. Studies in architecture, sculpture, and painting in the age of Caravaggio, Bernini, Velazquez, and Poussin. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 345: Northern Baroque Art, 1600-1750. 3 credits. Studies in architecture, sculpture, and painting in the age of Rubens, Van Dyck, Rembrandt, and Vermeer. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 hours.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 350: History of Photography. 3 credits. Development of photography from origins in France in the 19th century to the present. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: 24 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 360: Nineteenth-Century European Art. 3 credits. Movements from neoclassicism to symbolism discussed in relation to social, cultural, political, and technological changes in Europe. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 362: Twentieth-Century European Art. 3 credits. Study of major movements (fauvism, cubism, futurism, constructivism, surrealism, and expressionism) and important artists in 20th-century painting and sculpture. Focus may vary. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 370: Arts of the United States. 3 credits. Introduces students to high art (painting and sculpture) and popular material and visual cultural forms (prints, furniture, textiles) through a chronological and thematic survey of U.S. Art, 1600 to 1950. Explores changing roles of arts, artists, craftsmen; issues of gender, race, class; and formation of national identity through the arts. Lectures and discussion are featured. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: 24 hours of undergraduate credit.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)


Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 hours.

Schedule Type: Studio

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 372: Studies in 18th- and 19th-Century Art of the United States. 3 credits. Developments in visual culture and the changing status of art practitioners throughout these periods. Focus is either chronological (Colonial Period, Gilded Age) or thematic (19th-century genre scenes, the American landscape and national identity). Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Recommended Prerequisite: 24 hours.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 373: Studies in 20th-Century Art of the United States. 3 credits. Developments in 20th-century American visual culture across all media. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Completion of 24 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 374: Art Now.** 3 credits.
Explores visual art production since 1980, drawing on regional resources. Examines social, institutional, and political issues in recent art and its markets. Notes: Requires students to work collaboratively and make several field trips, including one Saturday bus trip to New York. Specific topics and assignments vary with the changing art season and instructor. Lecture, discussion. Offered by History & Art History (p. 392). Limited to three attempts.

**Recommended Prerequisite:** Completion of 24 credits and one course in ARTH or AVT, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 376:** Twentieth-Century Latin American Art. 3 credits.
Major movements and important artists in 20th-century Latin American art discussed in relation to social, cultural, and political conditions in the region. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** 24 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 382:** Arts of India. 3 credits.
History, culture, and arts of south Asia from earliest civilizations along the Indus River to onset of Western colonialism. Emphasizes role of material evidence in the creation of the South Asian history and how political, social, and religious developments affected the arts. Discusses monuments and artifacts in a variety of media in relation to historical contexts. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** 24 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 384:** Arts of China. 3 credits.
Explores the complex and dynamic history of China by examining ways in which social, religious, and political shifts have given rise to new and variant forms of material culture. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** 24 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 385:** Arts of Japan. 3 credits.
Art and architecture of Japan, with particular attention to the ways political changes, religious movements, and social developments influenced and shaped those creations. Discusses monuments and artifacts in a variety of media in relation to social and historical contexts. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** 24 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 386:** The Silk Road. 3 credits.
Explores luxury arts and material culture of Eurasian trade routes between Mediterranean and China in historical, religious, and social contexts. Emphasizes cultural interactions in medieval Central Asia. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** 24 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 393:** Art History Internships. 3-6 credits.
Internship with a professional arts institution, organization, or individual in the Washington, D.C., area. Project to be arranged by student in consultation with faculty instructor and field supervisor. Notes: Strongly recommended for advanced art history students seeking exposure to professional work in visual arts. May be taken for 3 to 6 credits, or repeated for up to 6 credits. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.
Recommended Prerequisite: Art History major or minor and permission of instructor.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 394: The Museum. 3 credits.
Examines history, theory, practice, ethics, and current problems of collecting and displaying art and artifacts to the public. Emphasizes issues central to museums in Washington, D.C., or museums in other locations; focus varies with instructor. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: 6 credits in art history at the 300-level and completion or concurrent enrollment in ENGH 302.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 398: Special Topics in the History of Art. 3 credits.
Topics vary. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 12 credits.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 399: Special Topics in the History of Art. 3 credits.
Topics vary. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

ARTH 400: Historiography and Methods of Research in Art History (Topic Varies). 3 credits.
Historical investigation of theories, methods, and critiques involved in the discipline of art history. Approach or focus may vary with instructor. Offered by History & Art History (p. 392). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: ENGL 302/ENGH 302 and 6 credits in Art history at the 300 level or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 420: Advanced Studies in Ancient Art. 3 credits.
Studies a particular area of ancient art of the Mediterranean, Near East, or Middle East. Topics may be art form or medium, geographical area, theme, function, or context. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: ENGL 302/ENGH 302 and 6 credits in Art History at the 300 level, or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 430: Advanced Studies in Medieval or Islamic Art. 3 credits.
Studies a single topic in medieval or Islamic art. May focus on a particular period, region, or medium, or may explore cultural interconnections within medieval Eurasian world. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 12 credits.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: ENGL 302/ENGH 302 and a 300-level course in medieval or Islamic art, or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 440: RS: Advanced Studies in 20th-Century European Art. 3 credits.
Studies a particular aspect of Renaissance or baroque art. Topics may be monographic, thematic, or concentrated on the art of a smaller time period or a particular area. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Specialized Designation: Research/Scholarship Intensive, Writing Intensive in Major

Recommended Prerequisite: ENGL 302/ENGH 302 and 6 credits in Art History at the 300 level, or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 460: RS: Advanced Studies in 20th-Century European Art. 3 credits.
Study of a particular topic in 20th century European art. Course may focus on a specific period, region, movement, medium, or theoretical issue, or explore cultural connections and transfer between regions. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 9 credits.

Specialized Designation: Research/Scholarship Intensive, Writing Intensive in Major

Recommended Prerequisite: ENGL 302/ENGH 302 and 3XX level course in 19th or 20th century European or American art, or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 471: Advanced Studies in Art of the United States.** 3 credits.
Studies a particular area of American art, focusing on a form, such as landscape or genre painting; theme, such as nationalism, regionalism, or iconography of the family; or movement, such as American modernism. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** ENGL 302/ENGH 302 and 6 credits in art history at the 3XX level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Study of a particular topic in 20th-century Latin American art. Course may focus on a specific period, region, movement, medium, or theoretical issue, or explore cultural connections and transfer between regions. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 9 credits.

**Specialized Designation:** Research/Scholarship Intensive, Writing Intensive in Major

**Recommended Prerequisite:** ENGL 302/ENGH 302 and a 3XX level course in 19th or 20th century art of Europe or the Americas, or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 474: Advanced Studies in Contemporary Art.** 3 credits.
Study of a topic in contemporary art in a research seminar setting. Focus on particular theme, region, artist, or medium, or take a comparative approach. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** ENGL 302/ENGH 302; 3XX level coursework in modern or contemporary art; or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 482: RS: Advanced Studies in Asian Art.** 3 credits.
Seminar-style discussions on a specific topic in Asian art. May focus on the art of a particular period, movement, reign, or region, as well as theoretical issues or works in a particular medium. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 6 credits.

**Specialized Designation:** Research/Scholarship Intensive, Non-Western Culture, Writing Intensive in Major

**Recommended Prerequisite:** ENGL 302/ENGH 302, and 3XX-level course in any area of Asian art; or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 490: Independent Study in Art History.** 3 credits.
Intensive study of a particular artist, period, or theoretical problem to be conducted by an individual student in consultation with instructor. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** 60 credits, ENGL 302, permission of instructor and chair, plus 9 credits in art history beyond ARTH 200, 201. Study proposal submitted prior to registration.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 491: Independent Study in Art History.** 3 credits.
Intensive study of a particular artist, period, or theoretical problem to be conducted by an individual student in consultation with instructor. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** 60 credits, ENGL 302, permission of instructor and chair, plus 9 credits in art history beyond ARTH 200, 201. Study proposal submitted prior to registration.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 492: Honors Directed Readings.** 3 credits.
Linked individualized courses, usually given by same instructor. Involves directed readings. Notes: Students must have completed at least one course in the field, or with the professor, chosen for these honors courses. The 3 credits of readings should be taken before the 3 research credits, or they may be taken concurrently. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** Admission to Art History Honors Program, ENGL 302, permission of instructor and chair, departmental approval of Honors Proposal submitted term prior to registration.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 493: Honors Directed Research.** 3 credits.
Linked individualized courses, usually given by same instructor. Culminates in research paper related to subject of readings. Notes: Students must have completed at least one course in the field, or with the professor, chosen for these honors courses. The 3 credits of readings should be taken before the 3 research credits, or they may be taken concurrently. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** Admission to Art History Honors Program, ENGL 302, permission of instructor and chair, departmental approval of Honors Proposal submitted term prior to registration.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ARTH 499: Honors Research.** 9 credits.
Research/scholarship intensive, non-Western culture. Culminates in research paper related to subject of readings. Notes: Students must have completed at least one course in the field, or with the professor, chosen for these honors courses. The 3 credits of readings should be taken before the 3 research credits, or they may be taken concurrently. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** Admission to Art History Honors Program, ENGL 302, permission of instructor and chair, departmental approval of Honors Proposal submitted term prior to registration.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
concurrently. Offered by History & Art History (p. 392). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: Admission to Art History Honors Program, ENGH 302, permission of instructor and chair.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 495: RS. Objects and Archives in Art History. 3 credits.
Conduct hands-on research with objects and primary and secondary sources. Select particular artifacts, works of art, or group of objects and undertake original research, and bring objects from storage to publication to exhibition. Develops skills in material analysis, critical reading, and academic writing. Focuses on VA/DC/MD libraries, archives, and storerooms. Offered by History & Art History (p. 392). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive, Writing Intensive in Major

Recommended Prerequisite: 6 credits of 300-level courses in the College of Humanities and Social Sciences and ENGH 302.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ARTH 499: Advanced Studies in Art History. 3 credits.
Seminar-style discussion on specific subjects in art history. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: ENGL 302/ENGH 302 and 3XX level course in Art History; or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

ARTH 570: Proseminar in History of Decorative Arts. 3 credits.
A writing-intensive course designed to equip students with the skills required for professional scholarship in the history of decorative arts. Examines a variety of theories and methods for analyzing objects. Teaches visual and contextual analysis skills as well as critical thinking about and documentation of primary and secondary sources. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 571: Survey of Decorative Arts I. 3 credits.
Overview of European decorative arts from fifteenth to eighteenth centuries, with focus on objects from Italy, France, and England. Examines the role of decorative arts in the formation of identity of the elite in Renaissance Italy as well as Renaissance France and England. Also concentrates on European decorative arts from seventeenth and eighteenth centuries, with emphasis on Paris and London. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 572: Survey of Decorative Arts II. 3 credits.
This writing-intensive course is designed to equip students with the skills required for professional scholarship in the history of decorative arts. Students will examine a variety of theories and methods for analyzing objects through assigned readings, class discussions, and short writing assignments. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 593: Internship in Art History and the Decorative Arts. 3-6 credits.
Internship with a professional arts institution, organization, or individual in the Washington, D.C., area. Project to be arranged by student in consultation with faculty instructor and field supervisor. Notes: Recommended for advanced art history students seeking exposure to professional work in visual arts. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.
**Recommended Prerequisite:** BA or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ARTH 594:** *The Museum.* 3 credits.
Examines history, theory, practice, ethics, and current problems of collecting and displaying art and artifacts to the public. Emphasizes issues central to museums in Washington, D.C., or museums in other locations. Focus may vary with instructor. Offered by History & Art History (p. 392). May not be repeated for credit.

**Recommended Prerequisite:** Baccalaureate degree or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ARTH 596:** *Independent Study.* 1-3 credits.
Independent reading and research on specific project under direction of department member. Notes: Written report is required. May be repeated for credit. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** Baccalaureate degree or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ARTH 599:** *Special Topics in Art History and the Decorative Arts.* 1-6 credits.
Topics vary. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

**Recommended Prerequisite:** Baccalaureate degree or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**ARTH 600:** *Methods and Research in Art History.* 3 credits.
Investigates theories, methods, and research strategies in discipline of art history. Designed for first-semester students in art history MA program; foundation for further graduate-level work in the program. Offered by History & Art History (p. 392). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Art History MA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ARTH 601:** *Colloquium in Art History.* 3 credits.
Offers graduate-level survey in academic art history led by an instructor of record, with input from full Art History faculty. Participants review the current field through lectures, focused readings and group discussions with relevant faculty member. Participants may read in more depth in areas of special interest. Provides preparation for MA exams and professional preparation for teaching. Offered by History & Art History (p. 392). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MA Program in Art History.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
ARTH 610: *Theory of Decorative Arts.* 3 credits.
Covers the analysis of objects and design from a number of different perspectives: cultural studies, art history, Marxism, the Frankfurt School, and feminism among others. Offers different tools and viewpoints for each approach to analyze and understand decorative arts. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 620: *Topics in Individual Decorative Arts.* 3 credits.
Survey of a single decorative art including media and methods of production. Covers connoisseurship issues such as identifying materials and techniques, fakes, forgeries, repairs, reproductions. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 24 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 630: *Material Culture Studies.* 3 credits.
Introduction to traditions that have contributed to the field of material culture study. Examines a broad range of the material world from the past to the present. Surveys the field’s historical roots and examines approaches to material culture scholarship. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 24 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 640: *European Decorative Arts.* 3 credits.
Examines one or more European decorative arts from periods from the Renaissance to the early 20th century. Arts may include tapestries, pottery and ceramics, silver, furnishing, jewelry and metalwork, glass as well as distinctive stylistic periods. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 24 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 650: *Global Decorative Arts.* 3 credits.
Examines specific key media, moments, or locations in the global decorative arts beyond the Western tradition. Notes: May be repeated for credit with topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 24 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 660: *Museum Studies.* 3 credits.
Explores the role of museums, through presentations by key museum personnel and discussion of required readings. Administrators, curators, conservators, educators, editors, among others, work with students to expand their knowledge of how museums function. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 24 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 670: Design and Design History. 3 credits.
Examination of key moments in design history. Through focus on the chosen topic, discusses the nature of design. Covers history of interiors, furniture and architecture, and theories of design and design composition. Notes: May be repeated for credit with topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 24 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 696: Independent Directed Readings. 3 credits.
Designed to prepare students for comprehensive exams by integrating past work and filling gaps in expected knowledge before the exam. Notes: Taken in final semester of art history MA. Offered by History & Art History (p. 392). May not be repeated for credit.

Recommended Prerequisite: Admission to Art History MA program and permission instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ARTH 699: Topics in Art History. 3 credits.
Research seminar on aspects of art history. Topics vary, but course entails extensive critical readings and discussion, development of bibliographies, and advanced-level research papers. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 15 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ARTH 797: Thesis Writing Workshop. 0 credits.
Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a major in History of Decorative Arts.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ARTH 799: Master's Thesis. 1-3 credits.
Research and writing on approved thesis topic under direction of thesis committee. Notes: Students must register for a minimum of three credits in their first semester of 799 and maintain continuous enrollment in 799 while writing and submitting a thesis. A maximum of 3 credits of 799 may be applied to the MA in art history and a maximum of 6 credits to the MA in the history of decorative arts. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 24 credits.

Recommended Prerequisite: Completion of 24 credits (for art history) or 45 credits (for history of decorative arts) and approval of thesis proposal by the faculty and program director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Art and Visual Technology (AVT)

100 Level Courses

AVT 101: New Majors Colloquium. 1 credit.
Provides a common core experience of contemporary perspectives on the broad range of professional career options open to studio art majors. Lectures address practical concerns but emphasize social, ethical, and philosophical aspects of visual arts professions. Notes: Students who
enrolled at Mason in Fall 2007 or later must take AVT 101 during or before their first semester as an AVT major. Required of all AVT majors. May be taken prior to declaring the major or during the first semester as a declared AVT major. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 103: Introduction to the Artist's Studio. 3 credits. Explores elements and principles of two-dimensional design, establishment of visual vocabulary, and critical analysis that supports conceptual development. Studio projects build fundamental knowledge, skills, understanding of precedents, and contemporary practices in visual arts. Offered by School of Art (p. 825). Limited to three attempts.

Mason Core: Arts (p. 142)

Registration Restrictions: Students cannot enroll who have a major in Art and Visual Technology.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 104: Two-Dimensional Design and Color. 4 credits. Explores elements and principles of two-dimensional design, establishment of visual vocabulary, and critical analysis that supports conceptual development. Studio projects build fundamental knowledge, skills, understanding of precedents, and contemporary practices in visual arts. Offered by School of Art (p. 825). Limited to three attempts.

Mason Core: Arts (p. 142)

Schedule Type: Studio

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 105: Three-Dimensional Design and Beyond. 4 credits. Explores elements and principles of three-dimensional design, establishment of visual vocabulary, and critical analysis that supports conceptual development. Studio projects explore form and composition, time-based media, materials, precedents, and contemporary practices in visual arts. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 104, or permission of instructor.

Schedule Type: Studio

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 106: Color. 4 credits. Color theory and principles of color interaction, including additive, subtractive, and partitive color experience; study of harmony, contrast, focus, space, opacity, transparency, temperature and value in both wet and dry media; and related applications of color technology. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 104, or permission of instructor.

Schedule Type: Studio

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 110: Introduction to Typography. 3 credits. Introduction to history and use of type. Reading and projects develop awareness of type as a linguistic and visual communication tool. Introduces typographic design elements, including color, hierarchy, integration with imagery, structure, and content. Offered by School of Art (p. 825). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Admittance into the Graphic Design Undergraduate Certificate or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 180: New Media in the Creative Arts. 3 credits. Introduces computing from artist’s perspective. Emphasizes computer use for artistic creation and research. Overview of image making and time-based media within the broad context of contemporary art, new media art, and mediated culture. Offered by School of Art (p. 825). Limited to three attempts.

Mason Core: Info Tech (without Ethics) (p. 142)

Schedule Type: Studio

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 204: Visual Thinking. 3 credits. Explores the ways contemporary artists use principles of design and perception to challenge how we see our world physiologically, psychologically, or socially. Examples drawn from film, photography, new media art, and other contemporary artistic media. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Studio

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 206: Color. 4 credits. Color theory and principles of color interaction, including additive, subtractive, and partitive color experience; study of harmony, contrast, focus, space, opacity, transparency, temperature and value in both wet and dry media; and related applications of color technology. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 104, or permission of instructor.

Schedule Type: Studio

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 215: Typography. 3 credits. Introduction to history and use of type. Reading and projects develop awareness of type as a linguistic and visual communication tool. Introduces typographic design elements, including color, hierarchy, integration with imagery, structure, and content. Offered by School of Art (p. 825). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Admittance into the Graphic Design Undergraduate Certificate or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 217: Introduction to Web Design. 3 credits. An introduction to contemporary web design, in particular to standards, as a successful tool in design communication. Students gain hands-on experience on design issues specific to Web-based presentations, learn web page layout, effective navigation and delve into the design process. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: Admittance into the Graphic Design Undergraduate Certificate or permission of instructor.

Registration Restrictions: Required Prerequisite: AVT 180C.
AVT 243: Drawing I. 4 credits.
Introduction and exploration of the fundamentals of drawing methods and materials, with emphasis on observational study and critical analysis of the effective and expressive use of line, mass, value, perspective, and formal composition. Emphasis on problems involved in representational and abstract visual interpretations of forms. Notes: AVT majors encouraged to take AVT 222 with AVT 104. Offered by School of Art (p. 825). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 253: Digital Photography I. 4 credits.
Introduction to the digital camera as a tool for electronic photographic image making. Students will be introduced to principles and exploration of the aesthetics of digital photography and also learn basic image-editing skills in a computer environment. Offered by School of Art (p. 825). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 254: Photography. 4 credits.
Introduces photographic study and investigation of the fundamental practices and techniques of both film and digital forms with attention to its history and contemporary practices. Class discussions, field trips and critiques enhance visual and verbal vocabularies. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: Restricted to AVT majors and AVT minors.
Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 252: Darkroom Photography I. 4 credits.
Introduces photographic study and investigation of the fundamental practices and techniques of both film and digital forms with attention to its history and contemporary practices. Class discussions, field trips and critiques enhance visual and verbal vocabularies. Offered by School of Art (p. 825). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 250: Introduction to New Media Arts. 4 credits.
Investigates ways in which contemporary artists employ tools in response to social, political and cultural conditions. Students create meaningful works of art that demonstrate conceptual and contextual awareness plus technical ability. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
Recommended Prerequisite: AVT 104, or permission of instructor.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

AVT 300: Artsbus Attendance. 0 credits.
Students travel to New York or other destinations aboard the AVT Artsbus to attend faculty-selected exhibitions. Notes: AVT majors must satisfactorily complete course once for each semester they are enrolled as majors, up to five times. Repeatable up to three times per semester. Offered by School of Art (p. 825). May be repeated within the term.

Schedule Type: Laboratory

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

AVT 301: Visual Voices Colloquium. 1 credit.
Students attend AVT Visual Voices lecture series during the semester and complete assignments related to the topics covered. Notes: AVT majors must accumulate at least 3 credits in this colloquium to graduate. Offered by School of Art (p. 825). May be repeated within the degree for a maximum 8 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 305: Creative Processes. 3 credits.
Study of the creative process in general, with emphasis on the inspiration, working methods, and final creations of various artists. Students explore their own creative processes through journal keeping, collaborative exercises, and projects. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 307: Aesthetics. 3 credits.
Interdisciplinary course examines broad range of contemporary art and culture to engage an expansive conception of aesthetic experience. Students engage with historical and contemporary aesthetic theories, build heightened aesthetic sensibility, and explore their personal aesthetic. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 309: Art as Social Action. 3 credits.
Interdisciplinary exploration of work by citizen-artists whose art-making engages the social world. Students learn about the history of socially engaged art-making and experiment with individual and collaborative projects addressing social issues. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 311: Graphic Design Methods and Principles. 3 credits.
Emphasis on developing design solutions requiring demographic, historical, and/or cultural research. Course strengthens design and typography skills, introduces conceptual problem solving, audience considerations, and broad-based tools designers use to develop effective visual communication solutions. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 215.  
C or higher in AVT 311.
C Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 313: Editorial Design. 3 credits.
Development and production of long-form design projects (magazines, newspapers, catalogs, and other serial and/or multipage publications). Emphasis on narrative, consistency, structure, clarity. Addresses information design issues and reinforces conceptual skills and integration of imagery and text. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 311.  
C Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 318: History of Graphic Design. 3 credits.
A survey of design history. Looks at print and web design as both a reaction to and shaper of the broader culture (including other fine applied arts) through the study of major movements and designers. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 319: Mobile App Design. 3 credits.
Introduces students to designing user interfaces, and experiences for mobile devices. Students will be exposed to designing for a variety of mobile platforms including tablet, phone, and mobile web interfaces. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: C or higher in AVT 311.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 323: Drawing II. 3 credits.
Students develop observational, sketching, and rendering skills. Introduction to a range of materials, methods, formal concepts, drawing in series, and critique vocabulary. Offered by School of Art (p. 825). Limited to three attempts.
Registration Restrictions:
Required Prerequisite: AVT 222\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 324: Figure Drawing. 3 credits.
Drawing with an emphasis on the observational study of the human body. Human anatomy and proportion are examined through a series of methodological approaches, including gesture, contour, mass, and modeling. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 222\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 326: Nontraditional Approaches to Drawing. 3 credits.
Encourages students to challenge some traditional approaches to drawing by creating innovative works that combine familiar drawing techniques with a variety of materials, approaches, and unusual formats. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 222 or permission of instructor.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 327: Illustration. 3 credits.
This course is intended to provide an overview of illustration as a visual communication medium. Sharing the tools and techniques of gallery artists and the communicative goals of graphic designers, illustrators work across media to make concepts understandable and powerful in the service of editorial, informational or persuasive goals. Students will begin to discover individually unique methods of problem solving by developing a personal visual vocabulary and relating it to historical and contemporary trends of art, design and illustration. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 324

Registration Restrictions:
Required Prerequisites: AVT 323\textsuperscript{C} or 324\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 328: Mixed Media. 3 credits.
Students investigate the contemporary innovations and disciplinary cross-pollination which have revolutionized and expanded the boundaries of traditional fine arts. Projects incorporate text, sound, computer generated imagery, collaboration and installation. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 104\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 333: Painting II. 3 credits.
Focuses on the development of formal and technical skills, with an emphasis on paint application, color interaction, and support building and preparation. Introduces concepts, methodologies, and approaches relevant to contemporary painting. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 232\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 336: Experimental Painting. 3 credits.
Using contemporary painting practices as starting place, students explore a variety of experimental and conceptual approaches to painting. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 232 or permission of instructor.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 337: Figurative Painting. 3 credits.
Working primarily with live models, students explore the human form as the main subject for a variety of visual and expressive inquiries. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 232, or permission of instructor.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 343: Printmaking II. 3 credits.
An introduction to relief, screenprint, and intaglio printing; including the study of historical antecedents and their relevancy to contemporary printmaking. Students learn reductive and additive techniques in preparing printing surfaces. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 243\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
AVT 344: Bookmaking: Books & Enclosures. 3 credits.
This course will introduce the basic concepts of book arts. Physical properties of book structures and binding methods will be developed alongside a conceptual rigor necessary to explore ideas of narrative and space within the book form. Through projects, readings, lectures, group discussions, individual reviews, and critiques, the course will introduce the history, tools, equipment, materials and processes that built the contemporary book. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 180, or permission of instructor.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 345: Paper/Print/Book as Language. 3 credits.
Introduces the artist’s book as both physical structure and creative association of words and images. Students learn techniques of bookmaking, binding, and traditional and digital printmaking to produce an artist-made book with narrative and sequential elements. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 180, or permission of instructor.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 346: Digital Printmaking. 3 credits.
A beginning course in hand printing digitally processed images. Projects focus on electronic means of creating and manipulating imagery. Students achieve skills in multiple steps and incremental development required in making prints. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 180, or permission of instructor.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 353: Darkroom Photography II. 3 credits.
Continuation of Fundamentals of Photography with further investigation into the aesthetics of photography through experimentation with new camera formats, films, papers, developers and development of a photographic portfolio. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: AVT 252C or 254C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 354: Digital Photography II. 3 credits.
A computer-intensive class in which students create digital images from the viewpoint of a photographic artist. Emphasis on digital photo techniques, including making digital negatives, concept development, and visual aesthetics. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 262C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 356: Photo Studio Techniques. 3 credits.
Introduces Theory, concepts and applications of photographic studio lighting. Emphasis on the ability to control and manipulate light in a photographic lighting studio environment using large format film cameras. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 253 or AVT 354, or permission of instructor.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 357: Photobook: Concepts & Form. 3 credits.
The photobook is an increasingly diverse and versatile artistic medium. Through demos, readings, lectures, workshops, assignments and critiques the course will cover the fundamentals of current photobook theory. Upon successful completion of this course students will have created several books that demonstrate an understanding of, and comfort with, book development and production. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 253C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 359: Photography Seminar. 3 credits.
A combined studio and lecture course investigating photography’s history, critical theory, philosophy, and practice. Lectures, discussions, readings, and projects focus on a medium that has enormously influenced art and culture. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 353 or permission of the instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 363: Sculpture II. 3 credits.
Expands on the principles and processes introduced in Sculpture I, developing a higher level of technical competence and critical sophistication. Notes: Lectures, independent student research, and gallery and museum visits required. Vigorous critiques. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 262C.
AVT 374: Sound Art I. 3 credits.
Introduction to the physics, phenomenology, and production of sound as an expressive medium. Using analog and digital tools, students will explore constructing with sound. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 180, or 280, or permission of instructor.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 376: Live Movies. 3 credits.
Advanced performance studio emphasizing cinematic forms and multimedia technologies. Also covers sound design, scenic design and materials, production planning, and interdisciplinary approaches to narrative and content in performance. Notes: Students collaborate on production projects. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 377: Cyberpunk. 3 credits.
Traces the ways that cinema, music, fiction, cultural theory, visual art, television, theater, and performance have embraced and been shaped by cyberpunk and cyberculture. Includes readings, writings, discussion, screenings, guest speakers, and research projects. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 380: Thinking Through Animation. 3 credits.
Students will be encouraged to expand their abilities and capabilities as thinkers, artists and citizens. This course will provide an introduction to issues relating to the production and reception of animated media bracketing the turn of the 21st century. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 382: 2D Experimental Animation. 3 credits.
Introduces conceptual, contextual, technical, and aesthetic practices of two-dimensional experimental animation. Students learn to animate hand-drawn and computer-generated images. Students work to create an imaginative and meaningful short animation with sound. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 280, or permission of instructor.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 383: 3D Experimental Animation. 3 credits.
Students create socially relevant 3D scenes with scaled objects, surface textures, lights, and shadows. These scenes serve as environments for short, thought-provoking animations. Emphasis on idea development, critical examination of animation practices, and visual aesthetics. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 280 or permission of instructor.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 385: EcoArt.** 3 credits.  
Develop collaborative projects that explore art and visual culture, the environment, and sustainability. Students are given access to the School of Art Permaculture Studio as a "green" work space for developing course projects. Offered by School of Art (p. 825). May be repeated within the degree for a maximum 8 credits.

**Mason Core:** Arts, Encore: Sustainability, Synthesis, Encore: Well-Being (p. 142)

**Specialized Designation:** Green Leaf Focused Course

**Schedule Type:** Studio

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 390: Video Art.** 3 credits.  
Integrates study of contemporary art theory, montage theory, and artistic practices with application to new media and technology. Special focus on visual culture and video art, sound design, and the sociopolitical implications of media. Offered by School of Art (p. 825). Limited to three attempts.

**Recommended Prerequisite:** AVT 280 or permission of instructor.

**Schedule Type:** Studio

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 393: Field Experience in the Arts.** 1-6 credits.  
Introductory working and learning experience with an organization or individual in the arts or as a teaching assistant. Students must complete 45 hours of work at the internship site for each credit. Note: Departmental permission required to register. Notes: Placement documentation to include 45 hours of work per credit. Offered by School of Art (p. 825). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Junior standing and permission of instructor and academic advisor.

**Schedule Type:** Internship

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 394: Honors Seminar.** 1 credit.  
Offers highly motivated students opportunities to interact with art world professionals through field trips, research, critiques, and creative assignments. Notes: Students accrue credits toward graduation with AVT honors. Offered by School of Art (p. 825). May be repeated within the degree for a maximum 8 credits.

**Recommended Prerequisite:** Open only to qualified AVT honors students by invitation.

**Schedule Type:** Seminar

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 395: Writing for Artists.** 3 credits.  
Practical writing seminar in which students practice typical writing needs of creative professionals; including artist's statements, grant proposals, and reviews; while also exploring ways in which artists have used writing, books, and language in art making. Offered by School of Art (p. 825). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**  
**Required Prerequisites:** ENGH 302C or ENGL 302C.  
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 396: Writing for Designers.** 3 credits.  
Practical writing seminar in which students practice typical statements, design briefs and proposals, and reviews; while also exploring ways in which designers have used writing, publications, and language in expressing critical design thinking. Offered by School of Art (p. 825). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** C or higher in ENGH/ENGL 302.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**AVT 407: Advanced Aesthetics.** 3 credits.  
Advanced examination of aesthetic concepts and theories, focusing on issues pertinent to artmaking. Offered by School of Art (p. 825). Limited to three attempts.

**Registration Restrictions:**  
**Required Prerequisites:** AVT 307C.  
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 408: Visual Communication Theories.** 3 credits.  
Advanced lecture course focusing on key theories and themes that have informed 20th and 21st century design practice. Explores theory and criticism in a variety of contexts, from popular to scholarly, and considers the role of the designers as thinkers and writers. Offered by School of Art (p. 825). Limited to three attempts.

**Recommended Prerequisite:** C or higher in ENGH/ENGL 302 or permission of instructor.

**Schedule Type:** Seminar

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 410: Experiential Design History.** 3 credits.  
This hybrid lecture/studio course provides a historical perspective of the evolution of graphic design and examines graphic design's contribution to culture through writing and design projects. The course will have both lecture and studio content, providing 'hands-on' experiential opportunities
in traditional graphic techniques. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: ENGH 302. C Requires minimum grade of C.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 411: Motion Design. 3 credits.
Motion Design introduces the theories, techniques and practices of motion design and the integration of design, image, sound, video and animation. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: AVT 217C and 311C. C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Graphic Design or Web Design.

Enrollment limited to students in the AR-BFA-AVT program.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 412: Advanced Typography. 3 credits.
An advanced exploration of type, design and the graphic organization of visual information. Emphasis is on the aesthetic and technical execution of typographic hierarchy in visual communications. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 313C. C Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 413: Professional Design Practices. 3 credits.
Addresses the nature of the professional graphic designer in terms of career development and self-marketing, visual presentations of design work, preparation of written materials and interview techniques. Special emphasis will be given to the development of a design business, as well as freelance and pro-bono design work. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: AVT 313C and 414C. C Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 414: Corporate Design and Branding. 3 credits.
Fundamentals of branding and identity design. Topics include logo development, product packaging, marketing and advertising collaterals, web branding, and broadcast advertising development. Special attention is given to the creation of a graphics standards guide. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: Admittance into the Graphic Design Undergraduate Certificate, or Graphic Design Minor, or permission of instructor.

Registration Restrictions:
Required Prerequisites: (AVT 252C or 253C) and (AVT 311C and 396C). C Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 415: Web Design and Usability. 3 credits.
Introduces students to web design, usability, and the use of popular applications for static, interactive, and motion-based web development. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (AVT 217C and 311C) and (AVT 313C or 414C). C Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 416: Advertising Design. 3 credits.
Provides insight and practice in the creative design process behind effective and memorable advertising. Emphasis on the design and presentation of a series of portfolio-ready advertising campaigns for actual client use. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 414C. C Requires minimum grade of C.

Enrollment is limited to students with a concentration in Graphic Design.

Enrollment limited to students in the AR-BFA-AVT program.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 417: Package Design. 3 credits.
Provides a focused studio experience to conceptualize and design multiple applications for contemporary package design. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 414C. C Requires minimum grade of C.

Enrollment is limited to students with a concentration in Graphic Design.

Enrollment limited to students in the AR-BFA-AVT program.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
AVT 419: Topics in Graphic Design. 1-6 credits.
Rotating subjects give students a deep look into and appreciation of a specific topic in design practice. Notes: Topics and credit vary with instructor. May be repeated when taken under different topics. Offered by School of Art (p. 825). May be repeated within the term.

Registration Restrictions:
Required Prerequisites: AVT 311C and (AVT 313C or 414C).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 420: Advanced Web Design. 3 credits.
Building on the principles and skills gained in AVT 415, this course delves deeper into web-related concepts and techniques. Students will gain advanced knowledge in evolving web technology, preparing them for professional entry into the web design field. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 415C.
C Requires minimum grade of C.

Enrollment limited to students in the AR-BFA-AVT program.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 422: Drawing III. 3 credits.
Builds on intermediate drawing skills, emphasizing individual exploration and expressive techniques. Along with rigorous observational study, students work from a variety of sources to develop a broad understanding of visual solutions within contemporary art practice. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 323C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 423: Drawing IV. 3 credits.
Students learn and practice advanced drawing skills and techniques in a variety of media and formats. Emphasis on development of content, personal sources, techniques, presentation strategies, and methods of analysis through critique. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 422C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 432: Painting III. 3 credits.
Intermediate course with an emphasis on developing personal content, concepts, painting strategies, and a practical understanding of contemporary ideas in painting. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 333C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 433: Advanced Painting I. 3 credits.
Students engage in a self-directed studio practice through the development of content, personal sources, techniques, presentation strategies, and methods of analysis through critique. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 432C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 434: Advanced Painting II. 3 credits.
Students work rigorously and independently, advancing individual studio practice through in-depth dialogue with faculty and formal group critiques. Emphasis on individual decision making, personal initiative, and critical vocabularies. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 433C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 435: Advanced Painting III. 3 credits.
Advanced directed research in painting. Employing rigorous concepts, presentation strategies, and in-depth critique, students develop independent projects into a cohesive body of work. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 434C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 442: Printmaking III. 3 credits.
An intermediate print media course with an emphasis on a wider variety of tools and concepts that investigate photo-based imagery and advance
personal narrative. Offered by School of Art (p. 825). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisite: AVT 443. Requires minimum grade of C.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 443: Printmaking IV.** 3 credits.

An advanced print media course that uses hand-drawn, digital, and photo-based imagery. Students explore traditional and new printmaking techniques in a series of related prints and explore their relevancy to contemporary printmaking. Offered by School of Art (p. 825). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisite: AVT 442. Requires minimum grade of C.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 444: Printmaking V.** 3 credits.

Advanced print media course incorporating three-dimensional applications of hand printmaking. Students develop concepts in digital printmaking, book making, sculptural prints, and installation works. Explores issues in contemporary printmaking through critical discussions, reading, and writing assignments. Offered by School of Art (p. 825). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisite: AVT 443. Requires minimum grade of C.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 453: Professional Practices.** 3 credits.

This course prepares studio art majors for their professional careers. Each student will select a facet of interest to develop assets for a professional portfolio. Emphasis will be placed on developing your professional brand and accompanying materials such as portfolio, websites, CVs etc. with critiques focusing on the individual's process. Offered by School of Art (p. 825). Limited to three attempts.

**Recommended Prerequisite:** Completion of 60 credits, including 12 credits of upper-level studio coursework.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 454: Alternative Photo Processes.** 3 credits.

Introduction to 19th century and nontraditional photographic processes including cyanotype, van dyke, gum bichromate, liquid emulsion, and image transfer. Exploration and discussion of photography's influences, application, and use in other mediums. Offered by School of Art (p. 825). Limited to three attempts.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 455: Digital Printing Techniques.** 3 credits.

Continuation of 354 Digital Photo Methods with further examination into digital techniques, personal expression and digital printing. Course emphasis is on the fine art and craft of the digital print and portfolio development. Notes: Continuation of AVT 354 Offered by School of Art (p. 825). Limited to three attempts.

**Recommended Prerequisite:** AVT 354, or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 457: Documentary Photography.** 3 credits.

Introduces documentary photography: techniques, history, choices, and ideas necessary to create meaningful photo essays that incorporate a personal, committed, in-depth approach to seeing and depicting lives and situations. Offered by School of Art (p. 825). Limited to three attempts.

**Recommended Prerequisite:** AVT 353 or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 458: Advanced Studio Lighting.** 3 credits.

The advanced study of photographic studio lighting concepts using electronic strobes and power packs with emphasis placed on constructing studio materials, metering techniques, staging complex sets, and on-location photography. Offered by School of Art (p. 825). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisite: AVT 356. Requires minimum grade of C.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 462: Sculpture III.** 3 credits.

Advanced studio course for continued individual, conceptual, and critical development in sculpture. Biweekly seminar, independent research, museum and gallery visits, vigorous individual and group critiques, required documentation, and portfolio preparation supporting studio projects. Offered by School of Art (p. 825). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisite: AVT 363. Requires minimum grade of C.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
AVT 463: Sculpture IV. 3 credits.
Intensive studio course for advanced sculpture students to further individual, conceptual, and critical development. Students produce a body of work based on technical exploration, critical discussion, reading, and writing. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 462C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 464: Sculpture V. 3 credits.
Advanced studio course for rigorous and independent production of sculpture. Weekly topical seminar, vigorous critiques, museum and gallery visits, professional documentation, and research resulting in a body of work to be exhibited. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 463C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 465: Sculpture VI. 3 credits.
Students work rigorously and independently, gaining insights into personal process and direction through one-on-one critical dialogue with faculty and formal group critiques. Emphasizes individual decision making and personal initiative. Notes: Continuation of advanced work in AVT 465. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: AVT 464C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 467: Critical Theory in the Visual Arts. 3 credits.
Examination of currents in theory and criticism that inform contemporary practice and critical analysis in the visual arts. Offered by School of Art (p. 825). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: ARTH 374C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 470: Digital Media and Web Design Capstone. 3 credits.
Student team-based experience grounded in the work of the preceding courses in the digital media and web design minor. Each individual student will produce a portfolio of digital media and web-design related products and features that demonstrate core competencies in coding, design, content, and accessibility. Students will work in cross-disciplinary teams to carry out a client-based web design project, the process and outcomes of which will also be represented in the individual portfolio. Offered by School of Art (p. 825). Limited to two attempts. Equivalent to ENGH 475.

Recommended Prerequisite: Before enrolling in the Capstone seminar, students need to have completed all required courses for the Digital Media and Web Design Minor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 472: Advanced Image Making. 3 credits.
In-depth look at the processes and mechanisms used to generate, reconstruct, and/or create new media images. Students are required to create a series of contextually related images and to further develop their critical analysis abilities. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 280, or permission of instructor.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 473: Advanced Performance Studio. 3 credits.

Recommended Prerequisite: AVT 373 or Permission of Instructor.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 474: Sound Art II. 3 credits.
Extends a working knowledge of the materiality of sound into an in-depth exploration of creation in the sonic realm. May include synthesis, circuit-bending, use of field recordings and other samples, and live performance. Offered by School of Art (p. 825). Limited to three attempts.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 478: Advanced Image Making. 3 credits.
In-depth look at the processes and mechanisms used to generate, reconstruct, and/or create new media images. Students are required to create a series of contextually related images and to further develop their critical analysis abilities. Offered by School of Art (p. 825). Limited to three attempts.

Recommended Prerequisite: AVT 280, or permission of instructor.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 483: RS: Art and Interactivity. 3 credits.
Provides a context for art making as an interactive and participatory experience while critically examining the ways in which technologies may aid and also inhibit engagement with the social and political world. Offered by School of Art (p. 825). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive
Schedule Type: Studio
Grading:
AVT 487: Advanced Topics: New Media Art. 3 credits.
Provides a context for exploring current developments in new media art practice in and outside the studio. Specific course content adapts and responds to ongoing movements in new media art and contemporary culture. Offered by School of Art (p. 825). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** AVT 280 plus one 3XX-level New Art Course, or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 494: Strategies in Art Room: PK-12. 3 credits.
The study of various media, skills and concepts adapted for PK-12 curriculum. Includes instructor demonstrations, prototypes, practicum, and class presentations. Participants will learn appropriate instructional strategies for implementation. Offered by School of Art (p. 825). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** AVT 495C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 495: Introduction to Art Teaching and Learning. 3 credits.
Explores art-teaching profession through readings, discussion, hands-on activities, and visits to diverse area public schools. Students discover a variety of ways that art is taught and evaluated to meet multiple educational needs of today's PK-12 students. Notes: Prior to enrollment, students must complete art education inquiry form. Offered by School of Art (p. 825). Limited to three attempts.

**Recommended Prerequisite:** Junior standing, and completion of at least 20 credits of AVT coursework with a C or higher; or permission of art education advisor.

**Registration Restrictions:**
**Required Prerequisites:** (ENGH 302C and AVT 307C).
C Requires minimum grade of C.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 496: Special Topics. 1-4 credits.
Explores topical studies in AVT including theoretical and critical aspects of art or studio production. Notes: Topics and credit vary with instructor. May be repeated when taken under different topics. Offered by School of Art (p. 825). May be repeated within the degree.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

AVT 497: Senior Project. 3 credits.
Capstone course in which students develop and present a cohesive body of work along with written materials and documentation. Students participate in critiques with visiting artists or AVT faculty and in workshops supporting professional goals. Offered by School of Art (p. 825). Limited to three attempts.

**Mason Core:** Capstone, Synthesis (p. 142)

**Recommended Prerequisite:** Senior Art and Visual Technology major, completion of 12 concentration credits, and completion or concurrent enrollment in all required Mason Core courses.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**AVT 498: Senior Design Project.** 3 credits.
Capstone course in which students develop and present a design project exploring the possibilities of personal or professional expression. Students participate in critiques with visiting artists or AVT faculty and in workshops supporting professional goals. Offered by School of Art (p. 825). Limited to three attempts.

**Mason Core:** Capstone, Synthesis (p. 142)

**Recommended Prerequisite:** Senior Art and Visual Technology major.

**Registration Restrictions:**
Required Prerequisites: AVT 311C, 313C and 414C.
C Requires minimum grade of C.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

**AVT 507: Advanced Aesthetics.** 3 credits.
Graduate seminar in aesthetic concepts and theories, focusing on issues pertinent to artmaking. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MFA program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 519: Special Topics in Graphic Design.** 1-6 credits.
Exploration of topical studies in graphic design, including theoretical and critical aspects of studio production. Offered by School of Art (p. 825). May be repeated within the term for a maximum 13 credits.

**Recommended Prerequisite:** Admission to AVT graduate program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 522: Drawing V.** 4 credits.
Drawing on an advanced level, emphasizing individual decision-making and personal initiative. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT graduate program, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 523: Drawing VI.** 4 credits.
Drawing on an advanced level, emphasizing individual decision-making and personal initiative. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT graduate program, AVT 522, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 595: Introduction to Art Teaching and Learning.** 3 credits.
Explores art-teaching profession through readings, discussion, hands-on activities, visits to diverse area public schools and action research. Students analyze ways that art is taught and evaluated to meet multiple educational needs of today's PK-12 students. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MAT Program or permission of the art education advisor or director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 596: Independent Study.** 1-6 credits.  
Independent reading and research on specific project under department faculty member's direction. Notes: Written reports required. Offered by School of Art (p. 825). May be repeated within the term.

**Recommended Prerequisite:** Admission to AVT graduate program or permission of instructor.

**Registration Restrictions:**  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 599: Special Topics in Art and Visual Technology.** 1-6 credits.  
Exploration of topical studies in AVT, including theoretical and critical aspects of art or studio production. Notes: Topics and credit vary with instructor. May be repeated when taken under different topics. Offered by School of Art (p. 825). May be repeated within the term.

**Recommended Prerequisite:** Admission to the AVT graduate program, or permission of instructor.

**Registration Restrictions:**  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 600: Research Methodologies.** 3 credits.  
Graduate seminar focusing on development of independent research project in student's area of emphasis. Explores principal methods of researching and documenting art and arts practice. Along with traditional methods of library research, emphasizes new processes of examination and investigation through the use of computer-aided research systems. Offered by School of Art (p. 825). May not be repeated for credit.

**Registration Restrictions:**  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Art Education, Art and Visual Technology, Graphic Design or Visual and Performing Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 605: Issues and Research in Art Education.** 3 credits.  
Readings and projects explore historical and contemporary ideas, issues, philosophies, pedagogy, and research in art education. Investigates teachers' use of research-oriented questions and data to explore classroom issues and improve teaching and learning. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MAT graduate program and permission of instructor.

**Registration Restrictions:**  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 606: Creativity and Cognition in the Arts and Media.** 3 credits.  
Focuses on research on cognition, development, learning, and creativity in the visual arts and media in formal and informal educational settings. Offered by School of Art (p. 825). May not be repeated for credit. Equivalent to EDEP 601.

**Registration Restrictions:**  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 610: Graduate Seminar.** 2 credits.  
Students present their work or the work of contemporary artists for discussion and peer and faculty critiques. Special focus on developing public communication and presentation skills on contemporary issues in the arts. Notes: Seminar course required of all AVT graduate students four times during course of study. Offered by School of Art (p. 825). May be repeated within the degree for a maximum 8 credits.

**Registration Restrictions:**  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Art Education, Art and Visual Technology, Graphic Design or Visual and Performing Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 611: Graduate Design Seminar.** 1 credit.
A laboratory for the exploration of contemporary design theory and practice through writing and design making, this class will have rotating topical content. Offered by School of Art (p. 825). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Art and Visual Technology, Graphic Design or Visual and Performing Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 612: Independent Project Research.** 1 credit.
Provides the development and research phase in preparation for AVT 794: Independent Design Project, the capstone course in the Graphic Design masters program. Students will prepare their written final project proposal for presentation to the AVT GD Graduate Faculty Committee. Notes: To be completed prior to enrolling in AVT 794: Independent Design Project. Offered by School of Art (p. 825). May be repeated within the degree.

**Recommended Prerequisite:** completion of 30 graduate credits

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment limited to students in the AR-MA-GD program.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**AVT 613: Experiential Design History.** 3 credits.
This hybrid lecture/studio course provides a historical perspective of the evolution of graphic design and examines graphic design’s contribution to culture through writing and design projects. The course will have both lecture and studio content, providing hands-on experiential opportunities in traditional graphic techniques. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT graduate program or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 614: Brand Identity Design.** 4 credits.
This is an advanced design course with an emphasis on brand identity development. Topics include logo development, product packaging, marketing and advertising collaterals, web branding, and broadcast advertising development. Special attention is given to the creation of a graphic standards guide. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT graduate program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 615: Technology for Art Teachers.** 3 credits.
Addresses use of technology in PK-12 art classroom. Focuses on research, presentation and instruction, and image creation. Students develop technology-enhanced teaching units for different grade levels and explore related issues, including copyright, plagiarism, and appropriation. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Art Education concentration ASTL and/or permission of art education director.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture
Art and Visual Technology (AVT)

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 616: Advanced Art and Interactivity. 4 credits.
Studio, lecture course investigating art as networked activity. Particular attention focused on Internet as context for creation, distribution, and patronage of art. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to AVT graduate program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 617: Advanced Typography. 4 credits.
Students will produce a body of work exploring the opportunities and limitations of typographical design. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to graphic design MA (or MFA) program, AVT graduate program or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 618: Visual Communication Theories. 2 credits.
Advanced graduate seminar focusing on key theories and themes that have informed 20th and 21st century design practice. Explores theory and criticism in a variety of contexts, from popular to scholarly, and considers the role of designers as thinkers and writers. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to MFA program, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 620: Theory, Criticism, and the Arts. 3 credits.
Cross-disciplinary graduate seminar focusing on key theories and themes that have informed 20th- and 21st-century arts practice. Explores theory and criticism in a variety of contexts, from popular to scholarly, and considers the role of artists as thinkers and writers. Offered by School of Art (p. 825). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment limited to students with a major in Art Education, Art and Visual Technology, Graphic Design or Visual and Performing Arts.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 621: Art Writing Seminar. 3 credits.
Includes criticism, the artist statement, manifestos, and language as visual art. Offered by School of Art (p. 825). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment limited to students in the AR-MFA-AVT or AR-MFA-VPA programs.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 622: Advanced Drawing. 4 credits.**
Advanced directed research in drawing, with continued development of individual aesthetic. Study of historical and philosophical precedents integral. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT graduate program, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 632: Graduate Painting I. 4 credits.**
Entering students are expected to be competent painters, with technical proficiency, a disciplined process, and a directed personal vision. Students work rigorously and independently toward the understanding and mastery of techniques, methods, and concepts relevant to their own practices, and be able to discuss their work within the context of historical and contemporary art practices. Progress tracked and assessed through periodic one-on-one critical discussions with supervising faculty. Achievement measured by faculty review board at mid-semester and term’s end. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT graduate program, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 633: Graduate Painting II. 4 credits.**
Building on research and practices established in Graduate Painting I, students continue to develop strategies for the expression of personal vision and style. Progress tracked and assessed through periodic one-on-one critical discussions with supervising faculty. Achievement measured by faculty review board at mid-semester and term’s end. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** AVT 632, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 634: Advanced Graduate Painting I. 4 credits.**
Working independently on a cohesive body of work, students must demonstrate a thorough understanding and mastery of techniques, methods, and concepts relevant to their own practices, and be able to discuss their work within the context of historical and contemporary art practices. Progress tracked and assessed through periodic one-on-one critical discussions with supervising faculty. Achievement measured by faculty review board at mid-semester and term’s end. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** AVT 633, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 635: Advanced Graduate Painting II. 4 credits.**
Advanced independent studio production. Progress tracked and assessed through periodic critical discussions with supervising faculty. Achievement measured by faculty review board at mid-semester and end of term. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** AVT 634, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 641: Graduate Graphic Design I. 4 credits.**
Working independently on a cohesive body of work, students must demonstrate a thorough understanding and mastery of techniques,
methods, and concepts relevant to their own practices, and be able to discuss their work within the context of historical and contemporary design practices. Progress tracked and assessed through periodic one-on-one critical discussions with supervising faculty. Achievement measured by faculty review board at term's end. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to MFA program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 642: Graduate Printmaking I. 4 credits.
Directed research and practice in printmaking focuses on individualized development of content and technique. Explores intellectual and expressive aspects of printmaking process. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 643: Graduate Printmaking II. 4 credits.
Directed research and practice in printmaking focuses on individualized development of content and technique. Explores intellectual and expressive aspects of printmaking process. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: AVT 642, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 644: Advanced Graduate Printmaking I. 4 credits.
Intensive course of creative exploration in print media that furthers students' independence through production of individualized body of work reflecting interests within the broader contexts of contemporary social, technological, and cultural issues. Students also engage in collaborative studio practices to integrate visual technologies in their work. These may include digital imaging, drawing, graphic design, painting, performance, photography, and sculpture. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program, AVT 643, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 645: Advanced Graduate Printmaking II. 4 credits.
Intensive studio course that furthers student independence through production of a body of work reflecting a broad context of social, cultural and contemporary issues. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to MFA program, and AVT 644.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 646: Graduate Graphic Design II. 4 credits.
Continuing to work independently on a cohesive body of work, students must demonstrate a thorough understanding and mastery of techniques, methods, and concepts relevant to their own practices, and be able to discuss their work within the context of historical and contemporary art and design practices. Progress tracked and assessed through periodic one-on-one critical discussions with supervising faculty. Achievement measured by faculty review board at term's end. (This is the second course in a two-course sequence.) Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to MFA program.

Registration Restrictions:
Enrollment is limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Recommended Prerequisite: Admission to the AVT graduate program, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 654: Advanced Graduate Photography I. 4 credits.
Intensive critique class concentrating on the development of creative work with emphasis on articulating responses to others’ work, the cultural climate, and issues involved in one’s own work as it progresses. Notes: Advanced graduate photography course. Weekly classes share equal time with critical theory and hands-on studio work. Includes readings, visiting artists and lecturers, and field trips. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 655: Advanced Graduate Photography II. 4 credits.
AVT 655, Advanced Graduate Photography II, Advanced independent studio production. Progress tracked and assessed through periodic critical discussions with supervising faculty. Achievement measured by faculty review board at mid-semester and end of term. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: AVT 652, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 662: Graduate Sculpture I. 4 credits.
Intensive studio course that furthers student independence through production of a body of work reflecting interests, including a broader context of social, cultural, and contemporary issues. Emphasizes self-evaluation, critical discussion, reading, and writing. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program, AVT 663, or Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 663: Graduate Sculpture II. 4 credits.
Advanced independent studio production. Progress tracked and assessed through periodic critical discussions with supervising faculty. Achievement measured by faculty review board at mid-semester and end of term. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: AVT 662 or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 664: Advanced Graduate Sculpture I. 4 credits.
Emphasizes individual creative production and development, with periodic exposure of student’s work and ideas to the critical attention of the AVT teaching faculty and other graduate students. Notes: Writing and reading components. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program, AVT 663, or Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 665: Advanced Graduate Sculpture II. 4 credits.
Advanced independent studio production. Progress tracked and assessed through periodic critical discussions with supervising faculty. Achievement measured by faculty review board at mid-semester and end of term. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: AVT 664 or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 667: Two-Dimensional Art Making and Differentiated Instruction. 3 credits.
Through studio work and research on basic and innovative drawing strategies, students explore expressive visual qualities, composition, and color. Students develop professional portfolios that incorporate

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
meaningful themes and contexts for developing visual literacy in PK12. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MAT in Art Education program and permission of instructor based on a portfolio review.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 668: Three-Dimensional Art Making Across Cultures.** 3 credits.
Explores the diversity of art forms in world cultures and work of traditional and contemporary artists. Students learn basic three-dimensional art-making techniques, including ceramics and fibers, and learn to design three-dimensional art instruction for PK-12 levels. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MAT program or Art Education Concentration ASTL and/or permission of the art education director

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 669: Four Dimensional Art Making: Technology and New Media.** 4 credits.
Develops teacher skills for the application of advanced technology for the PK-12 art program and examines the changing nature and uses of technology for expanding visual literacy through pedagogical strategies. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to AVT graduate program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 670: Teaching Practicum.** 1 credit.
Supervised classroom teaching practicum in Mason's undergraduate program or community college program. Offered by School of Art (p. 825). May be repeated within the degree for a maximum 4 credits.

**Recommended Prerequisite:** Admission to the AVT graduate program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**AVT 672: Performance Studio I.** 4 credits.
Introductory studio course looking at performance as a visual art practice and focusing on time, space and the body. Emphasizes artist as performer. Students study the work of performance practitioners, make short performance pieces, document and exhibit their work, and go to galleries and performances locally and in New York. Notes: Substantial research project required. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to AVT graduate program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 674: Advanced Performance Studio.** 4 credits.
Advanced laboratory for creating and producing performance art. Emphasizes new technologies and their applications, multimedia scriptwriting and storyboarding, and the creation of audiovisual performance. Students work independently and also contribute to collaborative production. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** AVT 673 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Studio
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 676: Graduate Sound Art. 4 credits.
Assuming basic competency in digital audio production and within
the theory of sounded experience, students will be assisted in the
incorporation of sonic material into their graduate research projects.
Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program, or
permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 678: Interface and CD-ROM Design. 5 credits.
Combined lecture and studio course in multimedia interface and CD-
ROM design. Focuses on exporting traditional visual and aural artistic
aesthetic to the computer environment within a multimedia context.
Assigned class readings augmented and supported by presentations of
various digital interfaces and CD-ROM examples. Discusses commercial,
entertainment, and educational titles, as well as CD-ROM experimental
art works. Studio time divided between AVT labs and area multimedia
facilities. Students conceive, design, and develop two CD-ROM or kiosk
interfaces due at midterm, and complete a dual platform CD-ROM project
due at semester end. Offered by School of Art (p. 825). May not be
repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program or
permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 682: Experimental 2D Animation. 4 credits.
Designed to broaden range of visually expressive, time-based media
from cell animation and stop motion animation to rotoscoping and two-
dimensional digital animation. Emphasizes idea generation, concept
development, and visual aesthetics. Offered by School of Art (p. 825).
May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program, or
permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 684: Advanced Image Making. 4 credits.
Overview of two-dimensional computer-imaging applications in the arts,
including painting, printmaking, mixed media, illustration, video, and
animation. Lectures combine technical and aesthetic material, including
image processing for artists and color reproduction. Emphasis on
developing advanced studio portfolio. Offered by School of Art (p. 825).
May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 685: Video Art. 4 credits.
Explores video as medium that is transforming art and is transformed by
art. Emphasizes developing an approach to personal narrative, creative
skills, and construction of meaning, as well as on acquiring technical
skills. Offered by School of Art (p. 825). May not be repeated for credit.

Recommended Prerequisite: Admission to the AVT graduate program, or
permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AVT 686: Experimental 3D Animation. 4 credits.
Teaches how to create realistic, three-dimensional scenes with scaled
objects, surface textures, lights, and shadows. Emphasizes idea
generation, concept development, visual aesthetics, and technical abilities. Students required to render a portfolio of high-resolution images. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to AVT Graduate Program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 687:** Advanced Topics: New Media. 4 credits.
Advanced course in digital media, including layer compositing, digital video editing, rotoscoping, and cell animation. Emphasizes integrating traditional techniques with software applications; and publishing projects to CD-ROM, DV tape, DVD, and Internet. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT program, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 688:** Hybrid Animation. 4 credits.
Study of digital two-dimensional and three-dimensional animation practices. Introduces lighting, camera movement, object motion, timing, and texture mapping as students plan and produce a short animation. Emphasizes idea generation, concept development, visual aesthetics, and technical abilities. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT graduate program, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 691:** Elementary Art Education. 3 credits.
Concepts and methods in early childhood and elementary art education. Notes: Students spend three hours per week in class and one hour per week in required field experience in public schools and other educational settings. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MAT program and permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 692:** Secondary Art Education. 3 credits.
Concepts and methods in secondary art education. Notes: Students spend three hours per week in class, and one hour per week in required field experience in the public schools and other educational settings. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** AVT 691, or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 694:** Advanced Studies in Teaching Critical Response to Art, PK-12. 3 credits.
Develops visual literacy and critical thinking skills by examining diverse theoretical models and applying strategies to expand knowledge about art and artifacts in the PK-12 classroom and museum. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Art Education concentration ASTL and/or permission of the art education director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
**AVT 695: Internship in Art Education (Student Teaching).** 5 credits.
Full-time internship in which students teach in elementary and secondary schools with guidance from cooperating mentor teachers. College supervisors make periodic site visits to observe, assess, and evaluate progress. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Completion of all other MAT program requirements.

**Recommended Corequisite:** AVT 696.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 696: Internship in Art Education Seminar.** 1 credit.
Weekly professional seminar focused on needs and concerns of student teachers. Covers issues as they emerge in practice, and concludes with an "Art of Teaching Art" exhibit of work by students of preservice teachers. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Corequisite:** AVT 695.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**AVT 697: Advanced Strategies and Curricular Innovations in the Visual Arts.** 3 credits.
Synthesizing knowledge and understandings gained in ASTL program, seminar focuses on innovative curriculum design, mastery of effective instructional strategies, and developing leadership potential for the field of visual art education. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Completion of all ASTL Art Education Concentration courses.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AVT 698: Independent Study/Directed Readings.** 1-3 credits.
Offered by School of Art (p. 825). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to the MAT or Art Education Concentration (ASTL) and permission of art education director

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**AVT 794: Graphic Design Project.** 4 credits.
The capstone course in the graphic design Master of Arts degree. Provides for the independent development, design, production and presentation of a graduate-level design project guided by faculty and design professionals. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT Graphic Design graduate program and completion of 30 graduate credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**AVT 796: Directed Reading.** 1 credit.
The development of independent research into the historical precedents, theoretical underpinnings, cultural forms, and idea territories pertinent to student's individual studio practice. Individualized section under the direction of division member. Notes: One of three courses comprising the MFA comprehensive experience for AVT students. Offered by School of Art (p. 825). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the AVT graduate program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

**AVT 798: Directed Project and Exhibition.** 1-6 credits. The construction and presentation of a professional-quality public exhibition. Course includes significant independent studio production of a comprehensive body of work, leading to the MFA Thesis Exhibition. Exhibition must demonstrate student’s mastery of studio craft and concept. Individualized section under the direction of division member. Notes: One of three courses comprising the MFA comprehensive experience for AVT students. Offered by School of Art (p. 825). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Admission to the AVT graduate program or permission of instructor.

**Registration Restrictions:** Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

**AVT 799: Thesis.** 1-3 credits. The written thesis informs, documents, and enhances the MFA thesis exhibition, which is the student’s primary creative research activity. The content of the written thesis may vary in accordance with artistic discipline and final exhibition. Individualized section under the direction of division member. Notes: One of three courses comprising the MFA comprehensive experience for AVT students. Offered by School of Art (p. 825). May be repeated within the degree.

**Recommended Prerequisite:** Admission to the AVT graduate program or permission of instructor.

**Registration Restrictions:** Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:** This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Arts Management (AMGT) 400 Level Courses**

**AMGT 402: Professional Development.** 1 credit. Seminar course that involves the development of workplace frameworks for success. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Recommended Prerequisite:** Junior standing, admission to the arts administration minor, or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**AMGT 405: Seminar in Arts Management.** 3 credits. Focuses on not-for-profit visual and performing arts organizations. Topics covered include the evolution of the field, the internal culture and structure, external influences, governance, planning, human resources, marketing, fundraising, financial management, economic impact, and other topics. Students will be introduced to a wide range of arts organizations, working arts administrators, and institutional models through field trips, guest lectures, readings, and institutional data. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Recommended Prerequisite:** Junior standing, admission to arts administration minor, or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**AMGT 410: Arts Advocacy and Community.** 3 credits. This course is an overview of advocacy and community engagement as practiced by the arts manager, artist, and educator. Students will learn to identify the need for community engagement and to develop successful techniques to implement outreach. Other topics will include accessibility, diversity, volunteerism, and governance. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Recommended Prerequisite:** Junior standing or permission of program director.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**AMGT 471: Introduction to Grant Writing.** 1 credit. Course focuses on developing the skills necessary for successful grant applications for arts organizations. Study of relevant funding sources, awareness of available research materials, ability to construct coherent proposals, and defining fund-raising strategy for an arts organization. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Recommended Prerequisite:** Junior standing, admission to the arts administration minor, or permission of the instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**AMGT 472: Technology in the Arts.** 1 credit. The one constant in life is change. In today’s world, both technology and arts organizations are changing. This course will give a broad overview of the technologies commonly used in entrepreneurial, small, and large arts organizations and examines the intersection of technology, management, and the arts. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Recommended Prerequisite:** Junior standing.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

AMGT 489: Internship in Arts Management. 1-4 credits.
Apprenticeship, internship, or project with organization or individual in the arts. Must be prearranged with the minor coordinator before enrollment. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 4 credits.

Recommended Prerequisite: Junior Standing, completion of 6 credits of courses in area of residency, AMGT 305, or permission of instructor.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

AMGT 504: Professional Development Arts Management. 1 credit.
Combines experimental facets happening within the creative community and the development of an increasing awareness of self. Professional development is not only for the manager, but also for those who work for that manager. It is collaborative, ideally incorporating an evaluative stage. Topics addressed include professional development, consultation, coaching, communities of practice, lesson study, mentoring, reflective supervision and technical assistance. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to Arts Management program or permission of program director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 511: Introduction to Grant Writing. 1 credit.
Places components of the grant writing process; including research, proposal writing, terminology, oral and written techniques, and specific focus; within broader context of nonprofit management. Introduction to perspectives of grant seeker and maker. Discover resources and compelling writing skills pertaining to proposal and letters of intent. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to Arts Management program or permission of program director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 512: Grant Writing in the Arts. 1 credit.
Placed components of grant writing process within broader context of nonprofit management. Introduction to perspectives of grant seeker and maker. The grant writing process: research, proposal writing, terminology, oral and written techniques, and specific focus. Discover resources and compelling writing skills pertaining to proposal and letters of intent. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to Arts Management program or permission of program director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 513: Technology in the Arts. 1 credit.
The one constant in life is change. In today's world, both technology and arts organizations are changing. This course will give a broad overview of the technologies commonly used in entrepreneurial, small, and large arts organizations and examines the intersection of technology, management, and the arts. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to Arts Management program or permission of program director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 599: Special Topics in Arts Management. 1-6 credits.
Provides opportunity to explore special and timely topics in arts management including theoretical and applied areas. Topics and credit vary; may be repeated for up to 12 credits taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: Admission to Arts Management program or permission of program director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**AMGT 601: Fund Raising/Development I.** 3 credits.
Overview for students seeking general knowledge, as well as introductory course for those who will complete the fund-raising concentration. Teaches role of fund raising as management function and part of overall strategic intention of arts organizations, presenting fund raising as a multifaceted, team-based process. Analyzes tools and techniques for effective fund raising. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 602: Seminar in Arts Management.** 3 credits.
Develops tools and techniques necessary for successful pursuit of a management career in visual and performing arts. Introduces wide range of arts organizations, working arts administrators, and institutional models through guest lectures, readings, field trips, and analysis of institutional data. Students gain understanding of organizational structures and functions, as well as models for general management. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to English Language, Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 603: Arts and Society.** 3 credits.
Examines role of visual and performing arts, with emphasis on historic traditions and trends that have most directly influenced contemporary American practice. Consideration is given to the functions of art in society in addressing questions: What constitutes good or bad art? What is the value of art? What encouragements or impediments does our society offer to the creative artist or arts institution? Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 604: Public Relations and Marketing Strategies for the Arts I.** 3 credits.
Teaches strategic way of thinking about audience, community, and markets. Structured into four modules, beginning with fundamentals of strategic planning. Students learn about external and internal environments and the interplay among them; discuss marketing fundamentals pertaining to arts audiences; and are introduced to fundamentals of applied marketing media and advertising fundamentals. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 606: Governance and Leadership.** 3 credits.
Board development including oversight and management of a board, as well as understanding board functions. Board relationships, including volunteers, are essential through all of the stages of a management career. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 609:** Performing Arts Management. 3 credits.
Bridging strategic planning and marketing; audience development; financial management; and board and volunteer management with issues of scheduling, ticketing and sales, mission integration and strategic challenges of new facilities, and growth and operations of existing ones. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 610:** Visual Arts Management. 3 credits.
Covers the many facets of visual art gallery management, from practical considerations of daily operations to the broader examination of gallery's role in art education, criticism, and art market. Topics such as exhibition coordination and installation, contracts, artist representation, fine art insurance, exhibition policies, budgets, and marketing are covered, along with the responsibility of educating a diverse public. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 620:** Legal Aspects in Arts Management. 3 credits.
Overview of practical legal issues that will be encountered by arts managers of both for-profit and not-for-profit arts organizations, including contracts, copyrights, licensing, and for-profit and non-profit incorporation. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 640:** Programming and Project Arts Management. 3 credits.
Provides both a theoretical framework for thinking about and assessing the value of various programming options and practical examples of the potential partners and resources available for program and project implementation. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 704:** Finance and Budgeting for Arts I. 3 credits.
Introduces budget and finance as fundamentals of the budget process, specifically tailored to needs of arts organizations. Provides overview of accounting as tool to manage and control arts organizations. Involves laboratory component for teaching software application frequently encountered in fiscal operation of arts organizations. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
AMGT 705: Finance and Budgeting for Arts II. 2 credits.
Introduces budgeting, planning, and finance as fundamentals of the strategic planning process and management control, specifically tailored to the needs of arts organizations. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: AMGT 704

Registration Restrictions:
Required Prerequisite: AMGT 704B.
B- Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 706: Festivals and Special Events. 3 credits.
Technical aspects of events and festival management. Topics may include cultural understanding, tourism, sponsorship, fund raising and development, logistics of scheduling and contracts, and the relationship to larger venues, marketing and sales, and budgeting. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to Arts Management program or permission of program director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 710: Arts Policy. 3 credits.
Reviews current state of the sector, familiarizing students with most common rationales for public support of the arts and respective roles of federal, state, and local governments and private policy actors. Examines dilemmas that arts organizations face in balancing need for government support and artistic integrity with push and pull of the market. Compares U.S. policies to other developed countries. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: AMGT 602B and 603B.
B- Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 711: Directed Readings and Project. 1-6 credits.
Opportunity to engage in a more intensive study or project in arts management. Students partner with faculty member for intensive readings and project in strategy and planning in the arts, fundraising and development, entrepreneurial project work, arts marketing, arts policy and law, or other specialized areas pertinent to arts administration. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission to Arts Management program or permission of program director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 740: Internal Internship. 2 credits.
Builds on apprenticeship as a core means of teaching applied concepts of arts management. Augments use of Center of the Arts and active arts environment, both performing and visual, as a learning laboratory. Builds on practical learning and provides internal training as preparation for external internship. Minimum 42 hours/credit. Required for developing practical application. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to Arts Management program or permission of program director. 9-credit standing.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 742: Internship I. 3 credits.
Provides a specific work environment to build on skills developed in the classroom and integrates work experience with specific academic exercises. Minimum 42 hours/credit. Required for developing practical application. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to Arts Management program, 15 credit standing; or permission of program director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

AMGT 752: Arts Entrepreneurship. 3.6 credits.
Lecture course in discovering and developing entrepreneurial skills in the arts. Students will conceive, develop, and present a for-profit or not-for-profit business plan and strategy, which will include model(s), market overview, management structure, along with revenue streams, an acquisition strategy, and technical and information technology strategies. Advanced course focuses on developing financial planning skills, funding...
strategies, marketing and arts sales. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to Arts Management program or permission of program director; AMGT 704.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 790:** External Internship. 1-4 credits.
Designed to follow internal internship. Provides a specific work environment to build on skills developed in the classroom and integrates work experience with specific academic exercises. Students advised to pursue a three-pronged approach toward specialization: electives; internal internship in the same area as concentrated electives; and external internship consistent with specialized course work and internal internship. Minimum 42 hours/credit. Required for developing practical application. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 4 credits.

**Recommended Prerequisite:** Admission to Arts Management program, 15 credit standing or permission of program director.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 792:** Internship II. 3 credits.
Provides a specific work environment to build on skills developed in the classroom and integrates work experience with specific academic exercises. Elective. Minimum 42 hours/credit. Required for developing practical application. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Arts Management program, 15 credit standing; or permission of program director.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**AMGT 795:** Capstone in Arts Management. 1 credit.
Required in order to complete the MA AMGT degree and must be taken in the last semester. Provides students with the opportunity to deepen, expand, and demonstrate mastery of one area of arts management expertise. Builds on work undertaken in a completed AMGT course or internship. Faculty will provide guidance and approve capstone topics. The capstone is a required one-credit course. Students may register for the capstone after having completed all core course requirements for the MA AMGT degree. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 2 credits.

**Recommended Prerequisite:** All core course requirements for the MA AMGT degree.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Assistive Technology (EDAT)**

### 400 Level Courses

**EDAT 410:** Introduction to Assistive Technology. 3 credits.
Provides an understanding of assistive technology and application in instructional programs, career tasks, and life skills for individuals with disabilities. Enables students to better use assistive technology in education, work, community, and home environments. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EDAT 421:** Augmentative Communication. 3 credits.
Provides an overview of augmentative and alternative communication tools for use by individuals with speech and communication disabilities. Enables students to locate, use and train others on the range of AAC technologies available. Field experience may be required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EDAT 422:** Assistive Technology for Individuals with Sensory Impairments. 3 credits.
Provides an overview of specific technology and resources available to enhance and improve the ability of individuals who are visually impaired/blind or hearing-impaired/deaf. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EDAT 423:** Accessibility and Input Modifications. 3 credits.
Provides an overview of accessibility strategies and input modifications designed for use by individuals with disabilities. Enables students to locate, use and train others on the range of technologies available as well as design opportunities for constructing unique devices. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

EDAT 510: Introduction to Assistive Technology. 3 credits.
Provides an understanding of assistive technology and application in instructional programs, career tasks, and life skills for individuals with disabilities. Presentation and exploration experiences enable students to better use assistive technology in education, work, community, and home environments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDAT 521: Augmentative Communication. 3 credits.
Provides an overview of augmentative and alternative communication tools for use by individuals with speech and communication disabilities. Exploration experiences enable students to locate, use and train others on the range of AAC technologies available. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDAT 522: Assistive Technology for Individuals with Sensory Impairments. 3 credits.
Provides an overview of specific technology and resources available to enhance and improve the ability of individuals who are visually impaired/blind or hearing-impaired/deaf. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDAT 523: Accessibility and Input Modifications. 3 credits.
Provides an overview of accessibility strategies and input modifications designed for use by individuals with disabilities. Exploration experiences enable students to locate, use and train others on the range of technologies available as well as design opportunities for constructing unique devices. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDAT 524: Universal Design for Learning. 3 credits.
Describes the foundations and principles of Universal Design for Learning (UDL). Focuses on teaching students with various disabilities including those with learning disabilities from preschool to postsecondary education implementing technology-based and other UDL strategies. Applies UDL principles to the design of accessible instructional materials. Students have the opportunity to develop and implement UDL lesson plans. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDAT 525: Software and Mobile Applications for Individuals with Disabilities. 3 credits.
Provides overview with software, mobile applications, and accessibility features. Identifies design features to meet individual's special needs; provides hands-on experiences with the range of software and mobile applications that incorporate evidence-based strategies for individuals with disabilities across environments, settings and the life span. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 527: Assistive Technology for Independent Living and Employment.** 3 credits.
Provides an overview of assistive technology accommodations and public policy related to independent living for individuals with disabilities throughout their life span. Focuses on assistive technologies that support daily living tasks and workplace accommodations to improve the performance of daily living and work activities for individuals with disabilities. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 530: Assistive Technology for Independent Living.** 3 credits.
Provides an overview of activities of daily living (ADLs) for individuals who have disabilities and the elderly. ADLs include but are not limited to assistive technologies that support dressing, feeding, hygiene, housework and safety. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 531: Assistive Technology in the Workplace.** 3 credits.
Provides an overview of workplace accommodations, functional barriers commonly experienced in the workplace, assistive technology, ergonomic strategies, and universal design approaches to improve performance of work activities for individuals with disabilities, including but not limited to mobility, dexterity, sensory, communication, and cognitive impairments. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**EDAT 527: Assistive Technology for Independent Living and Employment.** 3 credits.
Provides an overview of assistive technology accommodations and public policy related to independent living for individuals with disabilities throughout their life span. Focuses on assistive technologies that support daily living tasks and workplace accommodations to improve the performance of daily living and work activities for individuals with disabilities. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 530: Assistive Technology for Independent Living.** 3 credits.
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**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 531: Assistive Technology in the Workplace.** 3 credits.
Provides an overview of workplace accommodations, functional barriers commonly experienced in the workplace, assistive technology, ergonomic strategies, and universal design approaches to improve performance of work activities for individuals with disabilities, including but not limited to mobility, dexterity, sensory, communication, and cognitive impairments. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**EDAT 527: Assistive Technology for Independent Living and Employment.** 3 credits.
Provides an overview of assistive technology accommodations and public policy related to independent living for individuals with disabilities throughout their life span. Focuses on assistive technologies that support daily living tasks and workplace accommodations to improve the performance of daily living and work activities for individuals with disabilities. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 530: Assistive Technology for Independent Living.** 3 credits.
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**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

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**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**EDAT 527: Assistive Technology for Independent Living and Employment.** 3 credits.
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**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 530: Assistive Technology for Independent Living.** 3 credits.
Provides an overview of activities of daily living (ADLs) for individuals who have disabilities and the elderly. ADLs include but are not limited to assistive technologies that support dressing, feeding, hygiene, housework and safety. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 531: Assistive Technology in the Workplace.** 3 credits.
Provides an overview of workplace accommodations, functional barriers commonly experienced in the workplace, assistive technology, ergonomic strategies, and universal design approaches to improve performance of work activities for individuals with disabilities, including but not limited to mobility, dexterity, sensory, communication, and cognitive impairments. Field experience may be required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 599: Independent Study in Assistive Technology.** 1-6 credits.
Studies assistive technology research, theory, or practice under direction of faculty member. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**EDAT 610: Designing Adapted Environments.** 3 credits.
Provides an overview of environmental adaptations for individuals with disabilities to increase their access to community, workplace, and school activities. Covers legal issues within the ADA for adapting environments and addresses programmatic and physical access issues. Notes: Field Experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: EDAT 510B-
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDAT 649: Assistive Technology Assessment.** 3 credits.
Provides an overview of AT consideration and assessment procedures with emphasis on generated assessment plan and written report. Review and administer existing assistive technology (AT) evaluation instruments. Notes: Field Experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: EDAT 510B-
B- Requires minimum grade of B-.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Astronomy (ASTR)

100 Level Courses

ASTR 103: Astronomy. 3 credits.
Introduction to origin of life, Earth, planets and sun, stars, galaxies, quasars, nature of space radiation, and general theory of relativity. Note: ASTR 103 with ASTR 112 or ASTR 114 can be used to fulfill a 4-credit lab science requirement. Not for physics majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science Overview (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 111: Introductory Astronomy: The Solar System. 3 credits.
Topics include history of astronomy, evolution of the solar system, properties of planets, scientific method, critical thinking, nature of light, and principles of telescope design. Notes: ASTR 111 and 112 can be used to fulfill a 4-credit lab science requirement; not for physics majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)
Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 112: Introductory Astronomy Lab: The Solar System. 1 credit.
Laboratory course associated with ASTR 111. Notes: ASTR 111 and 112 can be used to fulfill a 4-credit lab science requirement; not for physics majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)
Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 113: Introductory Astronomy: Stars, Galaxies, and the Universe. 3 credits.
Topics include electromagnetic radiation, stellar evolution, interstellar medium, galaxies, cosmology, scientific method, and critical thinking. Notes: ASTR 113 and 114 can be used to fulfill a 4-credit lab science requirement; not for physics majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)
Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 114: Introductory Astronomy Lab: Stars, Galaxies, and the Universe. 1 credit.
Laboratory course associated with ASTR 113. Notes: ASTR 113 and 114 can be used to fulfill a 4-credit lab science requirement; not for physics majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)
Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 115: Finding New Worlds. 4 credits.
Topics include the search for planets outside the solar system, and new developments in the theory of solar system formation with an emphasis on student-led investigation using public data sources. Notes: ASTR 115 can be used to fulfill a 4-credit lab science requirement; not for physics majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)
Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

ASTR 210: Introduction to Astrophysics. 3 credits.
Introduction to astrophysics for scientists. Topics include astronomical measurement, celestial mechanics, electromagnetic radiation, stellar structure and evolution, the interstellar medium, galaxies, and a selection of topics at the forefront of astrophysics including space physics, exoplanets, galaxies, and cosmology. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: PHYS 160C.
C Requires minimum grade of C.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
300 Level Courses

ASTR 301: Astrobiology. 3 credits. Physical science perspective on origin and evolution of life on Earth and how life, in turn, has significantly influenced Earth's evolution. Topics include origin of Earth, mechanisms and sites for origin of life, co-evolution of life and Earth's atmosphere, habitability of planets, and the search for extraterrestrial life. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Recommended Prerequisite: MATH 108 or 113.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 302: Foundations of Cosmological Thought. 3 credits. Examines scientific, historical, and philosophical foundations and development of cosmological thought from antiquity to the present. Emphasizes qualitative understanding of the development of cosmology concluding with the present concept of origin and evolution of universe. Notes: No advanced background in mathematics or natural sciences required. This course does not satisfy elective-category requirements for the physics and astronomy majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science Overview (p. 142)

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 328: Stars. 3 credits. Stellar structure and evolution; radiative transfer. Includes computational work. Previous programming experience is not required, as it will be developed in the course, but it is helpful. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: ASTR 210*C and PHYS 260*C.
\[\text{C Requires minimum grade of C.}\]

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 390: Topics in Astronomy. 1-4 credits. Selected topics not covered in fixed-content courses. May be repeated for credit with permission of department if topics are different. Notes: May not be included for credit by physics majors in the 45 credits of physics courses required for BS degree, or in 31 credits of physics courses required for BA degree. Offered by Physics & Astronomy (p. 757). May be repeated within the term for a maximum 9 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

ASTR 401: Computer Simulation in Astronomy. 3 credits. Techniques and methods to simulate astronomical phenomena using a computer. Examples taken from a wide variety of astronomical phenomena, including radiation transfer in astrophysical objects, self-gravitating systems, hydrodynamics, and stellar models. Notes: Emphasizes hands-on projects. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 402: RS: Methods of Observational Astronomy. 4 credits. An introduction to the observational, statistical, and computational techniques used by observational astronomers. The course covers some of the basic skills needed to pursue a career in astronomy and is designed around preparing for and executing an observational research project. Fulfills writing intensive requirement in the major. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Capstone (p. 142)

Specialized Designation: Research/Scholarship Intensive, Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: PHYS 260*C, ASTR 124*C and 210*C and
\(\text{ASTR 328*C, 403*C, 420*C or 480*C}\) and ASTR 401*C.
\[\text{\textbullet\ May be taken concurrently.}\]
\[\text{\textbullet\ C Requires minimum grade of C.}\]

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 403: Planetary Science. 3 credits. Introduction to the physics and chemistry of planets and their natural satellites, asteroids, and comets. Topics include history of the solar system; origin and evolution of planets, their internal structure and atmospheres; and analytical techniques used in remote and in situ study. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: ASTR 210*C and PHYS 260*C.
\[\text{C Requires minimum grade of C.}\]

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 404: Galaxies and Cosmology. 3 credits. The structure of the Milky Way as the basis for our knowledge of galaxies; the properties of galaxies from our local neighborhood out to the youngest galaxies in the far distant universe; observational and theoretical approaches to the structure and evolution of galaxies; the basics of cosmology and the formation of structure in the universe. Computational tools introduced in ASTR 328 are developed further. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: ASTR 328*C.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 405: Honors Thesis in Astronomy I. 3 credits.
Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 406: Honors Thesis in Astronomy II. 3 credits.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 408: Survey of exoplanet science. Topics include techniques for detecting and characterizing exoplanets, including their composition, atmospheres, and demographics. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: ASTR 210 C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Astronomy.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 409: Astronomy Internship. 3 credits.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 420: Exoplanets. 3 credits.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ASTR 480: The Interstellar Medium. 3 credits.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

ASTR 532: Phys Interplanetary Med. 3 credits.
Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: PHYS 303, 305, 308; MATH 214.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ASTR 590: Selected Topics in Astronomy and Astrophysics. 1-6 credits.
Advanced topics from recent theoretical or observational developments and their applications. Satisfies needs of professional community to
keep abreast of current developments. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**ASTR 602: Methods of Observational Astronomy.** 4 credits.
An introduction to the observational, statistical, and computational techniques used by observational astronomers. The course covers some of the basic skills needed to pursue a career in astronomy and is designed around preparing for and executing an observational research project. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ASTR 603: Planetary Sciences.** 3 credits.
Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Recommended Prerequisite:** ASTR 210, PHYS 260.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ASTR 620: Exoplanets.** 3 credits.
Survey of exoplanet science. Topics include techniques for detecting and characterizing exoplanets, including their composition, atmospheres, and demographics. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ASTR 660: Plasma Physics for Space and Astrophysics.** 3 credits.
Equivalent to PHYS 660.

**Recommended Prerequisite:** PHYS 305

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ASTR 680: Physics of Interstellar Media.** 3 credits.
Physical processes in the interstellar media. Topics include the production and transfer of radiation, ionization and recombination, atomic and molecular excitation, dust physics, gas heating and cooling, and star formation. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Recommended Prerequisite:** PHYS 402 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

ASTR 730: Stellar Astrophysics. 3 credits.
Survey of contemporary astrophysics. Topics include physical concepts, stellar spectra, Hertzsprung-Russell diagram, stellar atmospheres, stellar structure, interstellar matter, stellar evolution, high-energy phenomena, hydrodynamical processes in astrophysics, accretion disk formation, and shock formation. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: MATH 214, PHYS 303, 305, 308.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ASTR 764: Computational Astrophysics. 3 credits.
Covers statistical mechanics concepts important in astrophysics. Presents unified approach to particle acceleration and interaction theory based on analytical and numerical analysis of Boltzmann and Liouville equations. Discusses computational methods relevant to particle transport problems, with emphasis on Fokker-Planck and Monte Carlo solution techniques. Applications from space sciences include studies of cosmic ray acceleration, photon comptonization, particle transport in the near-Earth environment, energy transport in stellar atmospheres, and self-gravitating system dynamics. Offered by Physics & Astronomy (p. 757). May not be repeated for credit. Equivalent to CSI 764.

Recommended Prerequisite: ASTR 530.

Registration Restrictions: ASTR 730.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ASTR 765: High-Energy and Accretion Astrophysics. 3 credits.
Overview of the field of atomic and nuclear physics, including nuclear reactions of use to high-energy astrophysics. Discusses radiation processes in cosmic plasmas emphasizing quantum mechanical calculations; stellar evolution and nucleosynthesis; computational models of stellar evolution; binary stars and accretion disks; numerical models of the structure of accretion disks; compact stars, white dwarfs, neutron stars, and black holes; acceleration processes and cosmic rays; interstellar medium and propagation of cosmic rays; high-energy processes in the center of galaxies; and ground- and space-based techniques and observations. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: PHYS 502 and 513, and ASTR 530; or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ASTR 790: Topics in Astronomy and Astrophysics. 1-6 credits.
Topics from recent theoretical or observational developments and applications not covered in fixed-content astronomy and astrophysics courses. Notes: Satisfies need of professional community to keep abreast of current developments. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission to masters program and permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ASTR 796: Directed Reading and Research. 1-12 credits.
Reading and research on a specific topic in astronomy, astrophysics, or related field under direction of faculty member. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Admission to masters program and permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ASTR 798: Research Project. 3 credits.
Research project chosen and completed under guidance of graduate faculty member resulting in an acceptable technical report. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: Nine graduate credits or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ASTR 799: Master’s Thesis. 1-6 credits.
Research project chosen and completed under guidance of graduate faculty member resulting in acceptable technical report and oral defense acceptable to three-faculty-member thesis committee. Offered by Physics & Astronomy (p. 757). May be repeated within the degree.

Recommended Prerequisite: 9 graduate credits and permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

900 Level Courses

ASTR 998: Doctoral Dissertation Proposal. 1-12 credits.
Covers development of a research proposal under the guidance of a dissertation director and the doctoral committee. The proposal forms the basis for the doctoral dissertation. Notes: No more than 24 credits in ASTR/PHYS 998 and ASTR/PHYS 999 may be applied toward satisfying doctoral degree requirements in the physics PhD program. Out of the 24, no more than 12 credits of ASTR/PHYS 998 may be applied. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 21 credits.

Recommended Prerequisite: Admission to the Physics doctoral program, and permission of advisor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ASTR 999: Doctoral Dissertation. 1-12 credits.
Doctoral research performed under direction of dissertation director. Notes: No more than 24 credits in ASTR/PHYS 998 and ASTR/PHYS 999 may be applied toward satisfying doctoral degree requirements in the physics PhD program. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 24 credits.

Recommended Prerequisite: Admission to doctoral candidacy in Physics PhD program and permission of advisor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Athletic Training Education Program (ATEP)

100 Level Courses

ATEP 120: First Aid and Emergency Care. 2 credits.
Covers emergency management procedures for various injuries and sudden illnesses, including 1- and 2- person CPR, and use of an Automated External Defibrillator (AED) for cardiac emergencies and basic first aid techniques; certification in first aid and CPR. Offered by Recreation, Health & Tourism (p. 221). Limited to two attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ATEP 150: Introduction to Athletic Training and Preventative Care Techniques. 3 credits.
Introduces the profession of athletic training and the basic principles of preventative care commonly used in the profession. Topics will include athletic training facility organization and procedures; protective sports equipment; construction of protective devices; and application of protective taping, braces, wrapping, and protective pads. Areas to be studied include the role of the athletic trainer in sports medicine, mechanisms of athletic injuries, tissue response to injury, blood-borne pathogens, introductory techniques of the assessment and evaluation of athletic injuries and emergency procedures. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

200 Level Courses

ATEP 201: Medical and Scientific Terminology. 3 credits.
Foundations of scientific and medical vocabulary including prefixes, suffixes and stems used to form compound words. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 202: Prevention, Recognition, and Management of Athletic and Fitness Related Injuries. 3 credits.
Provides coaches and fitness professionals with theory on the prevention, recognition, and management of injuries and conditions that occur in athletic competition and recreational fitness activities. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 203: Medical and Scientific Terminology. 3 credits.
Foundations of scientific and medical vocabulary including prefixes, suffixes and stems used to form compound words. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 205: Cultural Competence. 3 credits.
Explores cultural competence and its integration for effective professional practice. Includes communication styles, daily living practices, common sensitivities, self-awareness, and historical cultural implications in multicultural environments. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
ATEP 250: Physical Assessment of the Lower Body. 3 credits.
An analysis of the principles of physical assessment of the lower body.
Notes: Formal acceptance to the professional phase of the ATEP Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: Grade of C or higher in ATEP 150, ATEP 180, BIOL 124, BIOL 125, HEAL 110, and ATEP 300.
Recommended Corequisite: ATEP 255, ATEP 256

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 255: Clinical Techniques I: Physical Assessment of the Lower Body. 3 credits.
An analysis of physical assessment clinical techniques of the lower body (including the lower extremity and abdomen). Notes: Formal acceptance to the professional phase of the ATEP Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: Grade of C or higher in ATEP 150, ATEP 180, ATEP 250, ATEP 255, ATEP 256, ATEP 300, BIOL 124, BIOL 125, HEAL 110, HEAL 230.
Recommended Corequisite: ATEP 260, ATEP 266

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 256: Practicum I: Physical Assessment of the Lower Body. 3 credits.
A clinical practicum field experience under the direct supervision of a preceptor with emphasis on physical assessment of the lower body. Notes: Formal acceptance to the professional phase of the ATEP; Emergency Cardiac Care (ECC) Certification Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: Grade of C or higher in ATEP 150, ATEP 180, BIOL 124, 125, HEAL 110, 230.
Recommended Corequisite: ATEP 250, ATEP 255

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 260: Physical Assessment of the Upper Body. 3 credits.
An analysis of the principles of physical assessment of the upper body.
Notes: Formal acceptance to the professional phase of the ATEP Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: Grade of C or higher in ATEP 150, ATEP 180, ATEP 250, ATEP 255, ATEP 300, BIOL 124, BIOL 125, HEAL 110, HEAL 230.
Recommended Corequisite: ATEP 265, ATEP 266.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 265: Clinical Techniques II: Physical Assessment of the Upper Body. 3 credits.
An analysis of physical assessment clinical techniques of the upper body (including the upper extremity, head, and neck). Notes: Formal acceptance to the professional phase of the ATEP Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: Grade of C or higher in ATEP 150, ATEP 180, ATEP 250, ATEP 255, ATEP 256, ATEP 300, BIOL 124, BIOL 125, HEAL 110, HEAL 230.
Recommended Corequisite: ATEP 260, ATEP 266

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 266: Practicum II: Physical Assessment of the Upper Body. 3 credits.
A clinical practicum field experience under the direct supervision of a preceptor with emphasis on physical assessment of the upper body. Notes: Formal acceptance to the professional phase of the ATEP; Emergency Cardiac Care (ECC) Certification Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: Grade of C or higher in ATEP 150, ATEP 180, ATEP 250, ATEP 255, ATEP 256, ATEP 300, BIOL 124, BIOL 125, HEAL 110, 230.
Recommended Corequisite: ATEP 260, ATEP 265

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 270: General Medical Conditions and Pharmacology in Physically Active Populations. 3 credits.
An examination of assessment and management techniques of general medical conditions and pharmacological principles in physically active populations. Notes: Formal acceptance to the professional phase of the ATEP Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: Grade of C or higher in ATEP 300; BIOL 124, 125.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses
ATEP 300: Functional Anatomy. 3 credits.
Increase students' knowledge and exposure to the structural and functional components of human anatomy including musculoskeletal origins, insertions, actions and innervations. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: C or better in BIOL 124 and BIOL 125.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**ATEP 310: Advanced Functional Anatomy** 3 credits.
Investigates the musculoskeletal anatomy including innervation, vascular anatomy, and function of the neck, trunk and limbs. Synthesizes anatomy physiology, and human movement as it relates to injury; case studies are used to enhance the understanding of human anatomy and interpret movement impairments. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Corequisite:** ATEP 320.

**Registration Restrictions:**
**Required Prerequisites:** ATEP 300C and KINE 310C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**ATEP 320: Therapeutic Interventions Foundations** 3 credits.
Explores foundational knowledge and skills necessary for the safe, effective, and evidence-based application of therapeutic interventions. Investigates physiologic response to injury and healing, physiologic cause of pain, physiologic response of tissue to therapeutic intervention including modalities and exercise. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Corequisite:** ATEP 310.

**Registration Restrictions:**
**Required Prerequisites:** ATEP 320C, KINE 310C and 320C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**ATEP 325: Athletic Training Foundations** 3 credits.
Investigates the knowledge, skill and professional foundations of the athletic training. Emphasizes is placed on the role of the athletic trainer as a member of the health care system by decision-making through evidence-based practice and foundational skills including fitting protective equipment and devices, and prophylactic preventative taping. Admission to the professional phase of the ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** ATEP 120C, 150C, 201C, 300C, BIOL 124C, 125C and HEAL 230C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ATEP 330: Emergency Procedures for Athletic Trainers** 3 credits.
Investigates the scientific and philosophical foundations of pre-hospital emergency care principles pertinent to athletic trainers. Develops knowledge, critical thinking and problem solving skills necessary to correctly apply emergency care principles and associated skills in a variety of clinical and professional settings. Admission to the professions phase of ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Corequisite:** ATEP 340, 345, 351, 354.

**Registration Restrictions:**
**Required Prerequisites:** ATEP 310C, 320C and KINE 450C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ATEP 340: Lower Body Physical Assessment** 3 credits.
Analyzes principles of lower body physical assessment. Investigates mechanisms of injury, the evaluation process, and testing leading to diagnosis. Admission to the professional phase of the ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Corequisite:** ATEP 330, ATEP 340, ATEP 351, ATEP 354.

**Registration Restrictions:**
**Required Prerequisites:** KINE 450C, ATEP 310C and 320C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ATEP 345: Athletic Training Clinical Techniques 1** 3 credits.
Applies principles of lower body, thoracic and lumbar spine physical assessment. develops evaluation skills including special testing leading to diagnosis. Admission to the professional phase of ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Corequisite:** ATEP 330, ATEP 340, ATEP 351, ATEP 354.

**Registration Restrictions:**
**Required Prerequisites:** KINE 450C, ATEP 310C and 320C.
C Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ATEP 350: Therapeutic Interventions I** 3 credits.
Integrates the use of therapeutic modalities and rehabilitation in the treatment of injuries and conditions including indications, contraindications, physiological effects, special programs, and resistance methods used with therapeutic modalities and prevention/rehabilitation methods. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or higher in ATEP 150, 180, 250, 255, 256, 260, 265, 270, 300; BIOL 124, 125; HEAL 110, 230; KINE 310.

**Recommended Corequisite:** ATEP 355 and 356.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
ATEP 351: *Lower Body Therapeutic Interventions.* 3 credits.
Develops, implements, and evaluates treatment plans using therapeutic modalities and rehabilitation interventions in the treatment of lower body injuries and conditions. Establishes an evidence-based approach to therapeutic interventions use in patient treatment. Admission to the professional phase of the ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Corequisite:** ATEP 330, ATEP 340, ATEP 345, ATEP 354.

**Registration Restrictions:**
Required Prerequisites: KINE 450\(^C\), ATEP 310\(^C\) and 320\(^C\).
\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 354: *Athletic Training Clinical Techniques 2.* 3 credits.
Applies therapeutic interventions for the lower body in a laboratory setting. Develops rehabilitation treatment plans and skills necessary to carry out patient care. Admission to the professional phase of the ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Corequisite:** ATEP 330, ATEP 340, ATEP 345, ATEP 351.

**Registration Restrictions:**
Required Prerequisites: KINE 450\(^C\), ATEP 310\(^C\) and 320\(^C\).
\(^C\) Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 355: *Clinical Techniques 3: Therapeutic Interventions I.* 3 credits.
An examination of the scientific theory and standard operating procedures necessary for the safe application of therapeutic modalities in a physically active patient population. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or higher in ATEP 150, 180, 250, 255, 256, 260, 265, 266, 270, 300; BIOL 124, 125; HEAL 110, 230; KINE 310.

**Recommended Corequisite:** ATEP 350 and 356.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Athletic Training.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 356: *Practicum III: Therapeutic Modalities.* 3 credits.
A clinical practicum field experience under the direct supervision of a preceptor with emphasis on therapeutic modalities. Notes: Formal Acceptance into the ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or higher in ATEP 150, 180, 250, 255, 256, 260, 265, 266, 270, 300; BIOL 124, 125; HEAL 110, 230; KINE 310.

**Recommended Corequisite:** ATEP 350, 355.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 360: *Therapeutic Interventions 2.* 3 credits.
Integrated approach to the use of therapeutic modalities and rehabilitation in the treatment of injuries and conditions. Special consideration to specific body regions including a focus on the development, implementation, and evaluation of treatment plans. Notes: Formal acceptance into the professional phase of the ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or higher in ATEP 150, 180, 250, 255, 256, 260, 265, 266, 270, 300; BIOL 124, 125; HEAL 110, 230; KINE 310.

**Recommended Corequisite:** ATEP 365, 366.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Athletic Training.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 361: *Upper Body Therapeutic Interventions.* 3 credits.
Utilizes an integrated approach to therapeutic interventions including modalities and rehabilitation in the treatment of upper body, head and neck injuries and conditions. Includes development, implementation, and evaluation of treatment plans for upper body, head and neck injuries. Admission to the professional phase of the ATEP. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Corequisite:** ATEP 365, ATEP 367, ATEP 370, ATEP 375.

**Registration Restrictions:**
Required Prerequisites: ATEP 351\(^C\), 354\(^C\), 330\(^C\), 340\(^C\) and 345\(^C\).
\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 365: *Athletic Training Clinical Techniques 4.* 3 credits.
Applies therapeutic interventions for the upper body, head and neck in a laboratory setting. Develops rehabilitation treatment plans and skills necessary to carry out patient care. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Registration Restrictions:**
Students with a class of Freshman or Sophomore may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
ATEP 365: *Practicum IV: Therapeutic Rehabilitation*. 3 credits.
A clinical practicum field experience under the direct supervision of a preceptor with emphasis on therapeutic rehabilitation. Notes: Formal acceptance into the professional phase of the ATEP; Current Emergency Cardiac Care (ECC) Certification. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or Better ATEP 150, 180, 250, 255, 256, 260, 265, 266, 270, 350, 355, 356; BIOL 124, 125; HEAL 110, 230; PHED 300 and 450.

**Recommended Corequisite:** ATEP 360, ATEP 365.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 366: *Practicum IV: Therapeutic Rehabilitation*. 3 credits.
A clinical practicum field experience under the direct supervision of a preceptor with emphasis on therapeutic rehabilitation. Notes: Formal acceptance into the professional phase of the ATEP; Current Emergency Cardiac Care (ECC) Certification. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or Better ATEP 150, 180, 250, 255, 256, 260, 265, 266, 270, 350, 355, 356; BIOL 124, 125; HEAL 110, 230; PHED 300 and 450.

**Recommended Corequisite:** ATEP 360, ATEP 365.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

ATEP 367: *Athletic Training Practicum I*. 2 credits.
Emphasizes physical assessment and therapeutic interventions of the lower body in a clinical immersion practicum field experience under the direct supervision of a preceptor for 150 hours. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** ATEP 330\(C\), ATEP 340\(C\), ATEP 345\(C\), ATEP 351\(C\) and ATEP 354\(C\).

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

ATEP 370: *Upper Body Physical Assessment*. 3 credits.
Analyzes the principles of upper body physical assessment. Investigates mechanisms of injury, the evaluation process, and testing leading to diagnosis. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** ATEP 330\(C\), ATEP 340\(C\), ATEP 345\(C\), ATEP 351\(C\) and ATEP 354\(C\).

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 375: *Athletic Training Clinical Techniques*. 3 credits.
Applies principles of upper body, head and neck physical assessment. Develops evaluation skills including special testing leading to diagnosis. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** ATEP 330\(C\), ATEP 340\(C\), ATEP 345\(C\), ATEP 351\(C\) and ATEP 354\(C\).

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**ATEP 400: Pathopharmacology*. 3 credits.
Examines the assessment and management techniques of general medical conditions and pharmacological principles and interventions. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** ATEP 300\(C\) and KINE 310\(C\).

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ATEP 441: Senior Seminar in Athletic Training*. 3 credits.
Capstone educational experience focusing on current topics in the Athletic Training Profession and career development issues. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Recommended Prerequisite:** Grade of C or higher in ATEP 150, 180, 250, 255, 256, 260, 265, 266, 270, 300, 350, 355, 356, 360, 365, 366; BIOL 124, 125; HEAL 110, 230; KINE 300, 360.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ATEP 450: Administration and Management in Athletic Training*. 3 credits.
Focuses on the professional management and administrative issues in athletic training including the planning, designing, development, organization, implementation, direction, and evaluation of a health care program. Discusses current issues in athletic training related to professional conduct and practice. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Registration Restrictions:**
Students with a class of Freshman or Sophomore may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ATEP 456: Practicum V: Professional Integration*. 6 credits.
A clinical practicum field experience under the direct supervision of a preceptor with emphasis on professional skill integration. Notes: Formal acceptance into the professional phase of the ATEP; Current Emergency Cardiac Care (ECC) Certification. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or higher in ATEP 150, 180, 250, 255, 256, 260, 265, 266, 270, 300, 350, 355, 356, 360, 365, 366; BIOL 124, 125; HEAL 110, 230; KINE 310, 360.

**Recommended Corequisite:** ATEP 450.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 457: Athletic Training Practicum 2. 1 credit.
Emphasizes physical assessment and therapeutic interventions of the upper body with non-sport populations and assessment of general medical conditions in a clinical practicum field experience under the direct supervision of a preceptor for 75 hours. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Corequisite: ATEP 450.

Registration Restrictions:
Required Prerequisites: ATEP 361C, 365C, 367C, 370C, 375C and 400C.
C Requires minimum grade of C.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

ATEP 460: Pediatric Sports Medicine. 3 credits.
Examines evidence-based practices for injury prevention, sport safety, emergency preparedness, and risk management within youth and scholastic sport. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Corequisite: ATEP 470, 476.

Registration Restrictions:
Required Prerequisites: ATEP 300C and KINE 310C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 466: Athletic Training Practicum 3. 2 credits.
Emphasizes injury prevention administration physical assessment and therapeutic intervention during athletics preseason in a clinical practicum field experience under the direct supervision of a preceptor for 150 hours. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: ATEP 361C, 365C, 367C, 370C, 375C and 400C.
C Requires minimum grade of C.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

ATEP 470: Post Rehabilitative Therapeutic Interventions. 2 credits.
Explores current topics of musculoskeletal injury prevention and intervention. Investigates injury epidemiology, pain and nutritional theories. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Corequisite: ATEP 476.

Registration Restrictions:
Required Prerequisites: ATEP 450C, 457C and 466C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 476: Athletic Training Practicum 4. 4 credits.
Emphasizes physical assessment and therapeutic interventions of the upper body in a clinical practicum field experience under the direct supervision of a preceptor for 300 hours. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Corequisite: ATEP 470.

Registration Restrictions:
Required Prerequisites: ATEP 450C, 457C and 466C.
C Requires minimum grade of C.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 480: Athletic Training Research. 3 credits.
Examines methods for critically evaluating clinical research techniques and interventions to improve patient outcomes specific to the practice of athletic training. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Corequisite: ATEP 486.

Registration Restrictions:
Required Prerequisites: ATEP 460C, 470C and 476C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 486: Athletic Training Practicum 5. 6 credits.
Emphasizes professional skill integration with a clinical practicum field experience under the direct supervision of a preceptor for 400 hours. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Corequisite: ATEP 480.

Registration Restrictions:
Required Prerequisites: ATEP 460C, 470C and 476C.
C Requires minimum grade of C.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ATEP 499: Independent Study in Athletic Training. 1-6 credits.
Study of a topic area in athletic training research, theory, or practice under direction of a faculty member. May be repeated, but not more than 6 total credits may be earned. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
**500 Level Courses**

**ATEP 510: Advanced Functional Anatomy.** 3 credits.
Investigates the musculoskeletal anatomy including innervation, vascular anatomy, and function of the neck, trunk and limbs. Synthesizes anatomy, physiology, and human movement as it relates to injury; case studies are used to enhance the understanding of human anatomy and interpret movement impairments. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Prerequisite:** Basic human anatomy and physiology and functional anatomy knowledge.

**Recommended Corequisite:** ATEP 520 and 525.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**ATEP 520: Therapeutic Interventions Foundations.** 3 credits.
Explores foundational knowledge and skills necessary for the safe, effective, and evidenced-based application of therapeutic interventions. Investigates physiologic response to injury and healing, physiologic cause of pain, physiologic response of tissue to therapeutic intervention including modalities and exercise. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Prerequisite:** Basic human anatomy and physiology and functional anatomy knowledge.

**Recommended Corequisite:** ATEP 510 and 525.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**ATEP 525: Athletic Training Foundations.** 3 credits.
Investigates the knowledge, skill and professional foundations of the athletic training. Emphasizes is placed on the role of the athletic trainer as a member of the health care system by decision-making through evidence-based practice and foundational skills including fitting protective equipment and devices, arid prophylactic preventative taping. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Corequisite:** ATEP 510 and 520.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ATEP 530: Emergency Procedures for Athletic Trainers.** 3 credits.
Investigates the scientific and philosophical foundations of pre-hospital emergency care principles pertinent to athletic trainers. Develops knowledge, critical thinking and problem solving skills necessary to correctly apply emergency care principles and associated skills in a variety of clinical and professional settings. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Corequisite:** ATEP 540, 545, 550, 555.

**Registration Restrictions:**
Required Prerequisites: ATEP 510 and 520.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ATEP 540: Lower Body Physical Assessment.** 3 credits.
Analyzes principles of lower body physical assessment. Investigates mechanisms of injury, the evaluation process, and testing leading to diagnosis. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Corequisite:** ATEP 530, 545, 550, 555.

**Registration Restrictions:**
Required Prerequisites: ATEP 510 and 520.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ATEP 545: Athletic Training Clinical Techniques 1.** 3 credits.
Applies principles of lower body, thoracic and lumbar spine physical assessment. Develops evaluation skills including special testing leading to diagnosis. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Corequisite:** ATEP 530, 540, 550, 555.

**Registration Restrictions:**

**Required Prerequisites:** ATEP 510\(^B\) and 520\(^B\).
\(B\) Requires minimum grade of \(B\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ATEP 550: Lower Body Therapeutic Interventions.** 3 credits.
Develops, implements, and evaluates treatment plans using therapeutic modalities and rehabilitation interventions in the treatment of lower body injuries and conditions. Establishes an evidence-based approach to therapeutic interventions use in patient treatment. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Corequisite:** ATEP 530, 540, 545, 555.

**Registration Restrictions:**

**Required Prerequisites:** ATEP 510\(^B\) and 520\(^B\).
\(B\) Requires minimum grade of \(B\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ATEP 555: Athletic Training Clinical Techniques 2.** 3 credits.
Applies therapeutic interventions for the lower body in a laboratory setting. Develops rehabilitation treatment plans and skills necessary to carry out patient care. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Corequisite:** ATEP 530, 540, 545, 550.

**Registration Restrictions:**

**Required Prerequisites:** ATEP 510\(^B\) and 520\(^B\).
\(B\) Requires minimum grade of \(B\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ATEP 560: Upper Body Therapeutic Interventions.** 3 credits.
Utilizes an integrated approach to therapeutic interventions including modalities and rehabilitation in the treatment of upper body, head and neck injuries and conditions. Includes development, implementation, and evaluation of treatment plans for upper body, head and neck injuries. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Corequisite:** ATEP 565, 566, 570, 575, 600.

**Registration Restrictions:**

**Required Prerequisites:** ATEP 530\(^B\), 540\(^B\), 545\(^B\), 550\(^B\) and 555\(^B\).
\(B\) Requires minimum grade of \(B\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ATEP 565: Athletic Training Clinical Techniques 4.** 3 credits.
Applies therapeutic interventions for the upper body, head and neck in a laboratory setting. Develops rehabilitation treatment plans and skills necessary to carry out patient care. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Corequisite:** ATEP 560, 566, 570, 575, 600.

**Registration Restrictions:**

**Required Prerequisites:** ATEP 530\(^B\), 540\(^B\), 545\(^B\), 550\(^B\) and 555\(^B\).
\(B\) Requires minimum grade of \(B\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Athletic Training Education Program (ATEP)

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ATEP 566: Athletic Training Practicum 1. 2 credits.
Emphasizes clinical examination and acute care of injuries during a clinical immersion practicum field experience under the direct supervision of a preceptor for 150 to 200 hours. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 560, ATEP 565, ATEP 570, ATEP 575, 600.

Registration Restrictions:
Required Prerequisites: ATEP 530B, 540B, 545B, 550B, and 555B. B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

ATEP 570: Upper Body Physical Assessment. 3 credits.
Analyzes principles of upper body physical assessment. Investigates mechanisms of injury, the evaluation process, and testing leading to diagnosis. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 560, ATEP 565, ATEP 570, ATEP 575, 600.

Registration Restrictions:
Required Prerequisites: ATEP 530B, 540B, 545B, 550B, and 555B. B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ATEP 575: Athletic Training Clinical Techniques 3. 3 credits.
Applies principles of upper body, head and neck physical assessment. Develops evaluation skills including special testing, leading to diagnosis. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 560, 565, 566, 570, 600.

Registration Restrictions:
Required Prerequisites: ATEP 530B, 540B, 545B, 550B, and 555B. B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ATEP 600: Pathopharmacology. 3 credits.
Examines the assessment and management techniques of general medical conditions and pharmacological principles and interventions. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: Basic human anatomy and physiology and Functional Anatomy knowledge needed.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ATEP 650: Administration and Management in Athletic Training. 3 credits.
Focuses on the professional management and administrative issues in athletic training including the planning, designing, development, organization, implementation, direction, and evaluation of a health care program. Discusses current issues in athletic training related to professional conduct and practice. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 655.

Registration Restrictions:
Required Prerequisites: ATEP 560B, 565B, 566B, 570B, and 575B. B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Athletic Training.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ATEP 656: Athletic Training Practicum 2. 1 credit.
Emphasizes therapeutic interventions with non-sport populations during a clinical practicum field experience under the direct supervision of a preceptor for 75 to 125 hours. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 650.

Registration Restrictions:
Required Prerequisites: ATEP 560B, 565B, 566B, 570B, and 575B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

ATEP 660: Pediatric Sports Medicine. 3 credits.
Examines evidence-based practices for injury prevention, sport safety, emergency preparedness, and risk management within youth and scholastic sport. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: Basic human anatomy and physiology and Functional Anatomy knowledge needed.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ATEP 667: Athletic Training Practicum 3. 2 credits.
Emphasizes injury prevention, healthcare administration, clinical evaluation during and athletics pre-season clinical practicum field experience under the direct supervision of a preceptor for 150 to 200 hours. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: ATEP 650B and 656B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

ATEP 670: Post Rehabilitative Therapeutic Interventions. 2 credits.
Explores current topics of musculoskeletal injury prevention and intervention. Investigates injury epidemiology, pain and nutritional theories. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 660, 670.

Registration Restrictions:
Required Prerequisites: ATEP 650B, 656B and 667B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ATEP 676: Athletic Training Practicum 4. 4 credits.
Emphasizes clinical examination, therapeutic interventions, and psychosocial strategies during a clinical practicum field experience under the direct supervision of a preceptor for 300 to 400 hours. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 660, 670.

Registration Restrictions:
Required Prerequisites: ATEP 650B, 656B and 667B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ATEP 680: Athletic Training Research. 3 credits.
Examines methods for critically evaluating clinical research techniques and interventions to improve patient outcomes specific to the practice of athletic training. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 686.
Registration Restrictions:

Required Prerequisites: ATEP 660B, 670B, and 676B.

B Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (p. 84)

ATEP 686: Athletic Training Practicum 5. 6 credits.

Emphasizes professional development, evidence-based practice and integration of knowledge, skills and clinical decision-making during a clinical practicum field experience under the direct supervision of a preceptor for 450 to 600 hours. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Corequisite: ATEP 680.

Registration Restrictions:

Required Prerequisites: ATEP 660B, 670B, and 676B.

B Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:

This course is graded on the Graduate Regular scale. (p. 84)

Bachelor of Individualized Study (BIS)

300 Level Courses

BIS 300: Understanding Interdisciplinary Studies. 3 credits.

Focuses on literature and issues relevant to interdisciplinary and multidisciplinary studies and the BIS program. Students explore selected topics, develop and gather feedback on individualized concentration proposals, and review BIS program requirements. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)

BIS 304: Introduction to BIS. 1 credit.

This course serves new transfer students in the Bachelors of Individualized Studies (BIS) program, and assists them with a successful transition to Mason. Students develop relationships with peers, staff, and faculty. They are introduced to campus resources, with special emphasis on research and writing resources and tools, and work closely with BIS academic advisors and faculty. Notes: Only transfer students in their first or second semester at Mason are eligible to take this course. Only one of BIS 304, UNIV 300, UNIV 302, UNIV 303, UNIV 304, UNIV 305, or UNIV 308 may be taken for credit. Offered by Bachelor Individualized Study. Limited to three attempts. Equivalent to UNIV 304.

Schedule Type: Seminar

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)

BIS 390: The Research Process. 3 credits.

Focuses on skills to develop a research project, find and organize relevant information, examine and critique evidence, establish criteria, and create plan to complete senior project. Notes: Open only to pre-BIS students and BIS majors. Students cannot receive credit for both BIS 390 and 391. Offered by School of Integrative Studies (p. 574). Limited to three attempts. Equivalent to BIS 391.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: BIS 300 and grade of 2.0 or above in ENGL 302/ENGH 302.

Registration Restrictions:

Enrollment is limited to students with a major in Individualized Study.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)

BIS 391: The Research Process for Honors. 3 credits.

Focuses on skills to develop an honors-level research project, find and organize relevant information, examine and critique evidence, establish criteria, and create plan to complete Honors Senior Research Project (BIS 490). Approved research proposal required prior to registration in BIS 490. Notes: Students cannot receive credit for both BIS 390 and 391. Offered by School of Integrative Studies (p. 574). Limited to three attempts. Equivalent to BIS 390.

Recommended Prerequisite: Acceptance to pursue honors in the major.

Registration Restrictions:

Enrollment is limited to students with a major in Individualized Study.

Schedule Type: Seminar

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)

BIS 399: Special Topics. 1-3 credits.

Selected topics reflecting interest in specialized areas. Notes: May be repeated when topic is different. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:

Enrollment is limited to students with a major in Individualized Study.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)
400 Level Courses

BIS 489: Directed Readings and Research. 1-3 credits.
Readings and research on a topic directly relevant to student’s core concentration. Notes: Open only to pre-BIS students and BIS majors. Individualized sections by arrangement. Guided by instructor with expertise. Topics must be approved by instructor and BIS director prior to enrollment. Offered by School of Integrative Studies (p. 574). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Open only to degree students in the Bachelor of Individualized Study Program.
Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIS 490: RS: Senior Project. 4 credits.
Project or thesis on a topic directly relevant to student’s concentration, which will be formally presented to an audience of peers and faculty. Guided by student’s faculty advisor and 490 instructor. Notes: Open only to BIS majors. Individualized sections for BIS honors. Capstone course in BIS core concentration. Research proposals must be approved by faculty mentor, executive committee, and BIS director prior to enrollment. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Synthesis (p. 142)
Specialized Designation: Research/Scholarship Intensive
Recommended Prerequisite: BAS 390.
Registration Restrictions:
Enrollment limited to students in the UN-BAS-APLS program.
Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

BAS 491: Applied Sciences Capstone. 3 credits.
Students participate in an approved fieldwork study program and complete a research project as identified in BAS 490 Introduction to Research Methods. The Capstone project involves choosing and researching a workplace problem; designing, implementing and evaluating a specific plan of action; and formally presenting the project once completed. Offered by Provost’s Office (p. 1190). Limited to three attempts.

Mason Core: Capstone (p. 142)
Registration Restrictions:
Required Prerequisite: BAS 490C.
C Requires minimum grade of C.
Enrollment is limited to students with a major in Applied Science.
Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

Biodefense (BIOD)

600 Level Courses

BIOD 604: Emerging Infectious Diseases I: Bacteria and Toxins. 3 credits.
Covers the microbiology, pathogenesis, clinical effects, and epidemiology of bacteria and toxins that pose threats to global health or can be utilized as biological weapons. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Lecture**

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOD 605: Emerging Infectious Diseases II: Viral Agents.** 3 credits.
Covers the microbiology, pathogenesis, clinical effects, and epidemiology of viruses that pose threats to global health or can be utilized as biological weapons. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of instructor.
BIOD 621: Ethics and International Security. 3 credits.
Challenges students to wrestle with dilemmas raised by the desire to behave ethically in an international system in which consensus about ethical matters is absent. Students will develop, apply, and justify their own perspective on an ethical problem related to international security using ethical theory and social science research. Ethical issues related to nuclear, biological, and chemical weapons that confront researchers, policy makers, and practitioners will be addressed. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 622: Negotiating in the International Arena. 3 credits.
Provides students with the concepts and tools for analyzing complex negotiation processes and introduces them to the challenges facing international negotiators. Students will read about the frameworks and perspectives that have guided the scholarly research on negotiation, as well as the latest findings from that research; analyze complex cases of actual negotiations in the security, trade, and environmental areas; and negotiate key issues on the agendas of nations and international organizations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

BIOD 705: Intelligence: Theory and Practice. 3 credits.
Theory and practice of intelligence, including the intelligence cycle, organization of the intelligence community, and the origins and impact of recent reforms. Examines the capabilities and limitations of the different collection disciplines, analytic methodologies and pathologies, and the relationship between intelligence and policy. Analyzes challenges posed by collecting and analyzing intelligence on weapons of mass destruction programs conducted by states and terrorists. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and 605 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 706: Nuclear, Biological, and Chemical Weapons Policy and Security. 3 credits.
Explores the causes, conduct, and consequences of the proliferation of nuclear, biological, and chemical weapons. Covers the historical, technological, normative, and strategic factors that have promoted and restrained the spread of these weapons. Addresses the motives for states to develop these weapons and the debate over the security implications of nuclear, biological, and chemical weapon proliferation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and 605 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 707: Nonproliferation and Arms Control. 3 credits.
Examines the array of national and international measures used to slow, halt, and reverse the spread of nuclear, biological, chemical, and missile weapons. Explores the theory and practice of proliferation to provide insights into the supply and demand aspects of proliferation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and 605 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 708: Health Security Preparedness. 3 credits.
Examines national and international public health and medical preparedness for and response to natural disasters, terrorist acts, and disease outbreaks. Explores organizational and policy architecture, implementation challenges, and strategies for preventing, detecting, and mitigating these threats. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and 605 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 722: Examining Terrorist Groups. 3 credits.
Introduction to terrorism including the history and evolution of terrorism, case studies of key terrorist groups, the current nature of the terrorist threat and counterterrorism strategies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and 605 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 723: Legal Dimensions of Homeland Security. 3 credits.
Introduces the impact of legal issues on homeland security and biodefense. Topics include the origins of the Department of Homeland Security, the relationship between public health and law enforcement, the role of the military in homeland security, trade-offs between privacy and security, legal aspects of public-private cooperation in biodefense and homeland security, quarantine authority and enforcement, ensuring compliance with international treaties, and implementing biosecurity regulations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and 605 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 725: Terrorism and Weapons of Mass Destruction. 3 credits.
Examines the capabilities and intentions of terrorists to acquire and use chemical, biological, radiological, and nuclear (CBRN) weapons. The course provides an in-depth understanding of the history of CBRN terrorism, the current challenges posed by this threat, and the range of national and international policy tools available to address this threat. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and BIOD 605; or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 726: Food Security. 3 credits.
Analyzes threats to food security globally including those related to climate change and environmental degradation; animal and plant diseases; access to clean water; agricultural terrorism; and antimicrobial resistance. Explores the national and global health, economic, social, and ethical impacts of these disruptive forces. Examines strategies for enhancing the security of the global food production and supply systems. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and BIOD 605; or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 751: Biosurveillance. 3 credits.
Provides an understanding of the capabilities required to provide reliable early warning of disease outbreaks and identify their etiological agents. Assesses strengths and limitations of physicians, laboratories, epidemiologists, aerosol sensors, and syndromic surveillance systems. Considers challenges posed by the integration and analysis of the information collected by these sources. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and BIOD 605; or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOD 752: The Role of the Military in Homeland Security. 3 credits.
Analyzes the role that the armed forces play in homeland security, including historical and legal developments, the role of the National Guard, capabilities for crisis and consequence management, and case studies of military assistance to civilian authorities in response to riots, terrorist incidents, and natural disasters. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: BIOD 604 and 605; or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate, Non-Degree or Washington Consortium level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
**BIOD 760: National Security Technology and Policy.** 3 credits.
Introduces students to the intersection of science, technology, and policy in national security. Will examine the players in the formation of science policy; the roles they play; how the types, uncertainties, and availability of data affect science policy debates; and how science policy decisions are made. Topics to be covered include weapons of mass destruction, nonlethal weapons, nanotechnology, bioengineering, energy security, and pandemic influenza. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** BIOD 604 and 605; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate, Non-Degree or Washington Consortium level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOD 762: Biotechnology and Society.** 3 credits.
Examines the growing role of biotechnology in modern society, including benefits to human and animal health, industrial applications, and potential for misuse. Analyzes key variables influencing the revolution in biotechnology and impact in both developed and developing countries. Explores the political, economic, social, legal, security, and ethical implications of advances in life sciences and biotechnology. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Biodefense, Biological Threat and Defense or Microbial Biodefense.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOD 766: Development of Vaccines and Therapeutics.** 3 credits.
Analyzes the process of developing new medical countermeasures against biological weapons and emerging infectious diseases such as SARS and pandemic influenza. Special attention is paid to the scientific, technical, political, regulatory, and economic obstacles to developing new vaccines and therapeutics. Examines the causes and potential solutions of public and private sector failures. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**BIOD 793: Directed Studies in Biodefense.** 1-3 credits.
Individualized study of topics not otherwise available in graduate program. May involve reading assignments, tutorials, lectures, papers, presentations, or lab or field study, determined in consultation with instructor. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor and program director.

**Registration Restrictions:**
Enrollment is limited to graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)
**BIOD 798: Master's Research Project in Biodefense.** 3 credits.
Research project related to student’s concentration under supervision of faculty advisor. Student produces substantial and original contribution to the field of biodefense on the model of an article in a scholarly journal. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** 24 credits in BIOD and permission of project director.

**Registration Restrictions:**
Enrollment is limited to students with a major in Biodefense, Biological Threat and Defense or Microbial Biodefense.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**BIOD 810: Advanced Seminar in Biodefense.** 3 credits.
Explores issues of contemporary and emerging concern in biodefense and biosecurity. Topics may include legal, ethical, scientific, economic, and political aspects of biodefense and biosecurity. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** BIOD 604 and 605 or permission of adviser.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOD 890: Doctoral Supervised Internship.** 1-6 credits.
Internship under supervision of qualified biodefense professional at government agency, consulting firm, industrial firm, or other acceptable agency. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of program director or advisor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Biodefense, Biological Threat and Defense or Microbial Biodefense.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**BIOD 899: Directed Research in Biodefense.** 1-12 credits.
Research on a pertinent topic in biodefense; scope and subject determined by instructor. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** Approval of program director.

**Bioengineering (BENG)**

**100 Level Courses**

**BENG 101: Introduction to Bioengineering.** 3 credits.
This course introduces students to the field of Bioengineering in general and here at Mason and the use of technology and innovation in solving problems in biology and medicine with an emphasis on engineering tools and concepts. With its recitation, it also introduces mathematical modeling and analysis of bioengineering problems through the use of standard software packages for simulation. Topics include: exploration of the field of Bioengineering, Matlab and other software applications for modeling and analyzing biomedical problems, engineering design, career development, and ethics. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 200 Level Courses

**BENG 214: Physiology for Engineers.** 3 credits.
This course provides a broad introduction to the subject of human physiology, focusing on learning the subject matter from an engineering viewpoint. This course emphasizes organs and physiological systems (e.g., renal, cardiac) and applies engineering modeling concepts (using Matlab) to those systems. Offered by Bioengineering (p. 1032). Limited to two attempts. Equivalent to BENG 313.

**Registration Restrictions:**
**Required Prerequisites:** BENG 101<sup>C</sup>, BIOL 213<sup>C</sup> and MATH 114<sup>B</sup>.
- <sup>C</sup> Requires minimum grade of C.
- <sup>B</sup> Requires minimum grade of B.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 220: Physical Bases of Biomedical Systems.** 3 credits.
Introduces the physical basis of biomedical systems and signals. Demonstrates basic concepts of systems and signals theory, and shows their derivation from the biophysical concepts such as mechanics, fluid mechanics, pharmacokinetics and molecular biophysics which underlie the signals in living systems. Aims at providing the student with the mathematical and physical understanding to quantitatively describe biological systems. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (BENG 101<sup>C</sup>, MATH 203<sup>C</sup> and PHYS 160<sup>C</sup>) and (MATH 214<sup>C</sup> or 216<sup>B</sup>).
- <sup>A</sup> May be taken concurrently.
- <sup>C</sup> Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 230: Continuum Biomechanics and Transport I.** 3 credits.
This course introduces the fundamental concepts and mathematical equations describing biosolids, biofluids and biontransport phenomena; and their application to physiological problems encountered in biomedical engineering. Topics will include elasticity, biofluid flows, transport of mass, momentum, and heat in biological systems. Upon completion of this course students should have a fundamental understanding of the basic conservation laws describing biomechanical systems and should be able to apply these concepts to solve a variety of problems in bioengineering. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** PHYS 260<sup>C</sup>, MATH 203<sup>C</sup>, 213<sup>C</sup> and 214<sup>CTC</sup>.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 240: Biomaterials.** 3 credits.
This course is to introduce Biomaterials science and emphasize its importance in modern medicine. This course will also provide knowledge to students on specific techniques used to characterize biomaterials and on the biological response to implanted materials. This course will emphasize the multidisciplinary nature of biomaterials science and will focus on specific topics including an overview of existing biomaterials (ceramics, metal, polymers and hydrogels), drug delivery applications, development of nanobiomaterials, and the biocompatibility of these materials. Biological testing (in vitro and in vivo) of these biomaterials will also be covered in this course. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (CHEM 211<sup>C</sup> or 271<sup>C</sup>) and MATH 113<sup>C</sup> and BIOL 213<sup>CTC</sup>.
- <sup>C</sup> Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 241: Biomechanics and Biomaterials Laboratory.** 1 credit.
This lab course provides students opportunities to learn and get hands-on practice on the basic experimental skills and techniques required in both biomaterial and biomechanics laboratories. The students will begin to learn how to take measurements and properly report their results, in the following topics: mechanical testing, hydrogel experiments, biomaterial degradation, surface modification, nanomaterials for drug delivery, and biomaterial interaction with human body. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** BENG 240<sup>CTC</sup>.
- <sup>A</sup> May be taken concurrently.
- <sup>C</sup> Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 300 Level Courses

**BENG 301: Bioengineering Measurements.** 3 credits.
Introduces the basic concepts and tools for making biomedical measurements, describes instrumentation design and analysis considerations, and discusses several practical applications. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Bioengineering (BENG)**

**Required Prerequisites:** BENG 380\(^C\), 320\(^C\) and 313\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 302:** *Bioengineering Measurements Lab.* 1 credit.
Provides hands-on experience with sensors and instrumentation relevant to the analysis of living systems and related processes. Biomedical measurements include electrocardiograms, electromyograms, spirometry, pulse oximetry, and glucose monitoring. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** BENG 301\(^C\).
\(^*\) May be taken concurrently.
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 304:** *Modeling and Control of Physiological Systems.* 3 credits.
Introduces a systems-level understanding of biomedical systems. Emphasis on mathematical modeling of dynamic systems, including the role of feedback. Analogies between electrical and mechanical systems will be discussed. Examples covered will include multiple scales ranging from cells to organ systems. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
**Required Prerequisites:** MATH 214\(^C\) and PHYS 260\(^C\) and (BENG 320\(^C\) or SYST 320\(^C\)) and BENG 313\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 313:** *Physiology for Engineers.* 3 credits.
Provides a broad introduction to the subject of human physiology, focusing on learning the subject matter from an engineering viewpoint. Emphasis on organs and physiological systems where engineering has a significant role. Offered by Bioengineering (p. 1032). Limited to two attempts. Equivalent to BENG 214.

**Registration Restrictions:**
**Required Prerequisites:** (BENG 101\(^C\)) and (MATH 114\(^B\) or 116\(^B\)) and (BIOL 213\(^C\)).

\(^C\) Requires minimum grade of C.
\(^B\) Requires minimum grade of B-.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 320:** *Bioengineering Signals and Systems.* 3 credits.
Introduces the conversion of analog signals to digital ones and methods for using digitally processed signals in biomedical applications. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** BENG 101\(^C\), 220\(^C\) and MATH 214\(^B\).
\(^C\) Requires minimum grade of C.
\(^B\) Requires minimum grade of B-.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 322:** *Health Data Challenges.* 3 credits.
Covers methodology and tools used to work with health data structures supporting organizations’ needs for reliable data that are captured, stored, processed, integrated, and prepared for further querying, decision making, data mining and knowledge discovery for a variety of clinical and organizational purposes. Data security and privacy, data standards, data interoperability, health information exchange, and big data analytics are discussed. Offered by Bioengineering (p. 1032). Limited to two attempts. Equivalent to IT 322.

**Registration Restrictions:**
**Required Prerequisites:** IT 214\(^C\) and (STAT 250\(^C\) or 344\(^C\)).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 327:** *Cellular, Neurophysiological, and Pharmacological Neuroscience.* 3 credits.
What makes neurons different from other cells? What do they do and how do they work? How do they communicate with each other? In this course, we will answer these questions and many more. We will cover the basics of cellular, neurophysiological, and pharmacological neuroscience, including cellular anatomy and membrane function, electrical properties of neurons, intracellular and intercellular signaling, synaptic plasticity, and circuit connectivity. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** CHEM 211\(^{C}\).
\(^{C}\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 330: Computational Methods in Bioengineering.** 3 credits.
This course introduces students to the development of computational models for understanding physiological systems, and explores a variety of practical computational methods for biomedical problems. Topics include: introduction to scientific computing, linear and non-linear models, and finite difference methods for biomedical models based on ordinary and partial differential equations. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** CS 112\(^{C}\), MATH 214\(^{C}\) and BENG 230\(^{C}\).
\(^{C}\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 331: Computational Methods in Bioengineering Laboratory.** 1 credit.
This lab course complements BENG 330 to enhance students’ knowledge on developing and applying computational models for biomedical engineering problems. Students will be provided analytical problems to solve and computational problems to program in the laboratory. Topics include: introduction to scientific computing, linear and non-linear models, and finite difference methods for biomedical models based on ordinary and partial differential equations. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** BENG 330\(^{C}\).
\(^{C}\) May be taken concurrently.
\(^{C}\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 341: Introduction to Biomaterials.** 3 credits.
To provide a fundamental understanding of current, state of the art, and future directions of biomaterials. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Specialized Designation:** Scholarly Inquiry.

**Registration Restrictions:**
**Required Prerequisites:** (CHEM 251\(^{C}\) or 211\(^{C}\)) and (MATH 113\(^{C}\)) and (BIOL 213\(^{C}\)).

\(^{C}\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 350: Neural System Designs.** 3 credits.
This course introduces the essential "design principles" of various parts of the mammalian nervous system. The recurring theme is that Evolution successfully managed to re-arrange the same building blocks (neurons, synaptic transmission, and membrane physiology) in different networks exquisitely tuned to their functions, though often in incompletely understood ways. Topics include: neuronal biophysics, network architecture, cortical systems, neuroinformatics, and neurotechnology applications. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** BENG 313\(^{C}\) and BIOL 213\(^{C}\).
\(^{C}\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 360: Biomedical Imaging.** 3 credits.
This course introduces the physical and engineering foundations of modern medical imaging instruments and image processing methods. These methods enable us to see biological organisms at different levels, starting from the atom level and going all the way to seeing inside the human body. It allows a better understanding of how life and its processes work at different levels, and diagnose disease, monitor treatment and perform minimally-invasive interventions. Different modalities include: microscopy, x-rays, computerized tomography (CT), nuclear imaging, ultrasound, and magnetic resonance imaging (MRI). Topics include: underlying physics, basics of instrumentation, clinical applications, and presentation of case studies. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** PHYS 260\(^{C}\) and BENG 320\(^{C}\).
\(^{C}\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 370: Bioinstrumentation and Devices I.** 3 credits.
This course involves the design of instruments that allow engineers to both make measurements and intervene with living systems, including the human body. This course aims at providing the foundation for
understanding bioinstrumentation electronics, with a special emphasis on sensors and measurements. Topics include: circuit analysis, electronic circuit design, basic sensors and their applications in Bioengineering, as well as learn how to build and make measurements in electronic systems. Offered by Bioengineering. Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** BENG 320\(^C\) and 371\(^C\).

\(^A\) May be taken concurrently.

\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 371:** Bioinstrumentation and Devices Laboratory. 1 credit.

This course introduces the basic concepts and tools for making biomedical measurements, both at the level of electronics and at the device level. At the electronics level, students will learn about basic electronic components, using them to build basic circuits, with emphasis on instrumentation components. At the device level, students will learn to describe instrumentation design and analysis considerations, and discuss practical applications. Students will gain hands-on experience with circuits, basic bioinstrumentation and signal analysis techniques that are fundamental in Bioengineering. Offered by Bioengineering. Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisite:** BENG 370\(^C\).

\(^A\) May be taken concurrently.

\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Laboratory

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 380:** Introduction to Circuits and Electronics. 3 credits.

Builds on simple circuit concepts introduced in PHYS 260. Includes circuit analysis using superposition, equivalent circuits and transient analysis of RL, RC and RLC circuits; sinusoidal excitations, AC steady state analysis; frequency response; operational amplifiers; semiconductor devices such as diodes, field effect and bipolar transistors; and digital logic circuits. (Not intended for those majoring in electrical or computer engineering.) Offered by Bioengineering. Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (PHYS 260\(^C\) and MATH 214\(^B\)) and BENG 320\(^C\).

\(^A\) May be taken concurrently.

\(^C\) Requires minimum grade of C.

\(^B\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 381:** Circuits and Electronics Lab. 1 credit.

Lab associated with BENG 380. Provides laboratory experience in basic electronics emphasizing issues and considerations that are paramount for biomedical instrumentation. Not intended for those majoring in electrical or computer engineering. Note: Not intended for those majoring in electrical or computer engineering. Offered by Bioengineering. Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** PHYS 261\(^C\) and BENG 380\(^*C\).

\(^A\) May be taken concurrently.

\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Laboratory

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 390:** Engineering Design and Fabrication. 3 credits.

Project based course where students will design projects containing analog and digital components as well as mechanical parts. Students will simulate, build, and test their projects. Offered by Bioengineering. Limited to two attempts. Equivalent to ECE 390.

**Registration Restrictions:**

**Required Prerequisites:** (BENG 380\(^C\), ECE 280\(^C\) or 285\(^C\)).

\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 391:** Bioengineering Professional Development. 1 credit.

This course covers the variety of responsibilities of bioengineers to society and helps prepare them for the workplace and/or graduate or professional school. Topics include exploration of various career paths in biomedical/bioengineering and related fields, ethics and professionalism, job/grad/professional school searching, networking, interviewing, and other career preparation topics. Speakers include faculty, invited guests from industry and government, and alumni. Offered by Bioengineering. Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisite:** BENG 101\(^C\).

\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 395: RS: Mentored Research in Bioengineering.** 1-3 credits. Introduces the scientific research process through "hands on" experience: students are matched with faculty mentors who are actively involved in Bioengineering-related research. Requires no less than 60 hours per semester working with mentors. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 6 credits.

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** At least 60 credit hours applicable to the Bioengineering program.

**Registration Restrictions:**
Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**BENG 406: Introduction to Biomechanics.** 3 credits. This course introduces the fundamental principles of musculoskeletal biomechanics, computational simulation of movement, and OpenSim simulator. Topics include functions and models of the musculoskeletal structures, mathematical description of motion, kinetics, and simulation of movement using OpenSim. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (PHYS 160C or 243C) and MATH 203C and 214C and (BENG 220C, SYST 220C or ECE 220) and BENG 313C.

C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 413: Molecular Engineering Laboratory.** 3 credits. The course covers laboratory techniques in molecular and cellular engineering, such as Good Laboratory Practices according to industry standards, maintaining a laboratory notebook, equipment logbooks, NIST-traceable standards, use of statistics and a standard curve to calculate the concentration of an unknown, sensitivity of a laboratory assay, biomaterial-DNA interactions, imaging of cells and signal processing, interpreting data and writing a scientific report. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: BIOL 213C.

C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 414: Pathophysiology and the Role of New Technologies in Human Diseases.** 3 credits. This course provides examples from clinical medicine of how patients are diagnosed and treated for diseases of their cardiovascular and neurological systems, as well as for cancer and in acute care (emergency) units. The etiology and pathogenesis of disease processes and the current roles of technologies in diagnosis and treatment will be discussed. Unmet needs in these clinical areas that require research and technology development using engineering approaches will be identified and potential pathways towards clinical solutions will be investigated. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: BENG 214C.

C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 417: Bioengineering World Health.** 3 credits. This course covers the major types of medical equipment, including the principles of operation, the physiology underlying the measurement, the major functional (system) pieces for each instrument, and typical problems/applications of each instrument. Special focus is placed on making reliable and safe repairs in a low resource setting: Troubleshooting, creative problem solving, calibration and testing. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 420: Biomedical Data Analytics.** 3 credits. This course introduces the fundamental techniques and tools for analyzing biomedical data, important for many biomedical engineering problems. Topics include classification, regression, clustering, dimensionality reduction, data representation, and algorithm performance evaluation. Students will deepen their understanding of the concepts and gain hands-on experience on data analysis by applying algorithms to analyze and interpret various kinds of standard biological and biomedical data encountered in bioengineering fields. This course will be an innovative course leveraging hybrid learning through a combination of lectures, on-line content, and course project. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: CS 112C, STAT 350C and BENG 330C.

C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 421: Cell and Tissue Engineering. 3 credits.**
This course is designed to provide exposure to the concepts of cell/tissue functions and behavior and strategies to manipulate their responses, biomaterials to construct scaffolds, modern techniques of artificial organ development and wound healing and most importantly, the utilization of engineering principles for biomedical applications. The course schedule has been packaged to not only provide fundamental information on the above topics, but also to stimulate team working skills, awareness of the current scientific developments through literature review, real-time experiences through lab visits and demos, and career opportunities through industrial visits. Offered by Bioengineering (p. 1032). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: BENG 240C.
\( C \) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 426: Neural Engineering. 3 credits.**
This course is an overview of Neural Engineering. The sequence of topics are designed to cover from fundamentals of Neurophysiology through to applications of neural prosthesis such as retinal and cochlear implants. Other important aspects of Neural Engineering to be discussed include brain-machine interfaces, instrumentation for interfacing electronics to the nervous system, and sensors for neural research. Offered by Bioengineering (p. 1032). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: BENG 350C.
\( C \) Requires minimum grade of C.

Enrollment limited to students with the terminated from VSE major attribute.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 429: Mason-Inova Applied Technologies. 3 credits.**
This Mason-based class will provide students with the opportunity to learn fundamentals concepts in the classroom and interact with clinical technologies, through 3-hour practical experiences at the Fairfax Inova hospital every three to four weeks. Students will work with faculty and clinicians in both an academic and simulated clinical environment. Offered by Bioengineering (p. 1032). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: BENG 214C.
\( C \) Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 430: Continuum Biomechanics and Biotransport II. 3 credits.**
This course provides advanced and unifying treatment of the fundamental field equations describing the laws of continuum biomechanical systems including solids, fluids and transport phenomena in biological systems. Topics will include: blood and circulation, viscoelasticity, poroelasticity, thermoelasticity, and molecular and convective transport in biological systems. Offered by Bioengineering (p. 1032). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: BENG 230C and 330C.
\( C \) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 434: Computational Modelling of Neurons and Networks. 3 credits.**
Introduces the objectives, philosophy, and methodology of neuronal modeling. Instructs students in the use of some of the more popular neural modeling software packages. Students learn the syntax of several software packages, how to create neurons from subcellular components, and how to create networks by connecting neuron models. Offered by Bioengineering (p. 1032). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: BENG 327C.
\( C \) Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 435: Multi-scale Modeling and Simulation in Biomedicine. 3 credits.**
This course covers a variety of advanced computational methods for biomedical problems spanning multiple scales, from cells and molecules to tissues, organs and systems. Topics include: advanced computational techniques, finite difference methods, finite element methods, particle methods, stochastic simulations, agent-based methods, coupled problems and high-performance computing. Applications will be drawn from a variety of biomedical fields such as biosolid and biofluid mechanics, cell mechanics, pharmacokinetics, and physiologic systems. Offered by Bioengineering (p. 1032). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: BENG 230C and 330C.
\( C \) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
**BENG 437: Medical Image Processing.** 3 credits.
This course aims at familiarizing the student with the basic concepts of image processing as they are applied to medical imaging problems. The class consists of two parts. The first part provides a brief overview of basic image processing, including image enhancement and restoration techniques. The second part addresses problems that are central to medical image processing practice, including registration, segmentation and feature detection. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: BENG 360
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 438: Advanced Biomedical Imaging.** 3 credits.
This course will provide an introduction to the physical, mathematical and engineering foundations of modern medical imaging instruments and imaging physics principles that enable us to “see” inside the human body to diagnose disease, monitor treatment and perform minimally-invasive interventions. The emphasis will be on diagnostic ultrasound, x-ray (CT), and MRI imaging methods, although other modalities will also be discussed. The course will also provide an overview of recent developments in the field of medical imaging and discuss some of the challenges and controversies. The students will get hands on experience in applying the methods learnt in class to real-world problems and imaging data. There will be broad scope to individually and collaboratively explore current problems in medical imaging. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: BENG 360
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 451: Translation and Entrepreneurship in Bioengineering.** 3 credits.
This course focuses on teaching the process of translational research and on creating both a medical device and a company vision. Emphasis is made on creating a robust medical device prototype based on a deep understanding of the disease. Regulatory and reimbursement processes are also addressed in detail. This course will draw upon lectures and different guest speakers. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (BIOL 213 and CHEM 251 or 211)
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 470: Bioinstrumentation and Devices II.** 3 credits.
This course delves deeper into two aspects of bioinstrumentation: the theory and use of different sensors commonly encountered in Bioengineering devices, and the development of microcontroller-based circuits that interface with such sensors. Students will gain knowledge of microcontroller circuit design and programming, interfacing with sensors and their applications in Bioengineering. Students will demonstrate their understanding of the subject by designing a microcontroller-based device that performs a biomedically-relevant measurement. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: BENG 370
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Bioengineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
The course provides an understanding of 1) intellectual property focusing on patents and the patent process in the US and globally, 2) regulatory frameworks for product approval such as FDA and international regulations, standards (ANSI, ASTM, ISO, GCP,GLP) and 3) product development including ideation and concept development, quality systems, global business models, financing and transactions. An overarching team project will involve invention, proof of concept, patenting, regulatory pathways and product development to market in a global context. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: BENG 240\(^C\) or 414\(^C\).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 487: Neuroinformatics.** 3 credits.
This class is a hands-on introduction to available and developing neuroinformatics infrastructures focuses on data processing, literature mining, and metadata annotation, with a special emphasis on neuronal morphology and hippocampal neuron types. The aim is to provide students with sufficient practical understanding of basic concepts and representative tools to participate confidently and actively in neuroscience projects with a substantial component of digital data. Prior computational experience is not required, and attendees will start using their newly acquired knowledge immediately. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: BENG 350\(^C\).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 491: Bioengineering Senior Seminar I.** 1 credit.
Covers the variety of responsibilities of bioengineers to society. Topics include ethics, regulation, research, industry, entrepreneurship, and cost issues. Professional approaches to job searching and effective technical communication will also be discussed. Speakers include faculty, invited guests from industry and government, as well as students. Notes: Students cannot receive credit for BENG 491 and ECE 491. Offered by Bioengineering (p. 1032). Limited to two attempts. Equivalent to ECE 491.

**Registration Restrictions:**
Enrollment limited to students with a class of Senior Plus or Senior.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 492: Senior Advanced Design Project I.** 3 credits.
This course covers the whole engineering design process from the selection of a project to the design and construction of a prototype. Teams of students select a senior design project in bioengineering while considering the feasibility of the proposed project. The work includes identifying an engineering problem, establishing objectives and constraints, considering standards and requirements, developing preliminary design and a testable prototype (considering different design alternatives), as well as team management and organization. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Mason Core:** Capstone, Synthesis (p. 142)

**Specialized Designation:** Impact Associated.

**Recommended Prerequisite:** 90 credit hours applicable to the Bioengineering Program.

**Registration Restrictions:**
Required Prerequisites: (COMM 100\(^C\) or 101\(^C\)) and ENGH 302\(^C\).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 493: RS: Senior Advanced Design Project II.** 3 credits.
This course is the implementation of a senior design project for which preliminary work was done in BENG 492. It includes testing and refining the initial prototype, enhancing the design and construction of hardware and software, conducting tests via experiments or studies, evaluating/validating complete system. Requires oral presentations and written reports during project and at completion. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Mason Core:** Capstone, Synthesis (p. 142)

**Specialized Designation:** Research/Scholarship Intensive

**Registration Restrictions:**
Required Prerequisite: BENG 492\(^C\).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BENG 495: Bioengineering Senior Seminar II.** 1 credit.
Covers a variety of responsibilities of bioengineers to society. Topics include dealing with biomedical ethics, regulatory requirements, global considerations, and health care costs. Speakers will include faculty as well as guests from industry, government, and academia. Students are required to explore and then present some material themselves. Offered by Bioengineering (p. 1032). Limited to two attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** 90 credit hours applicable to the Bioengineering Program.

**Registration Restrictions:**
500 Level Courses

BENG 499: Special Topics in Bioengineering. 0-4 credits.
Topics of special interest to undergraduates. Notes: May be repeated if topics substantially differ. Offered by Bioengineering (p. 1032). May be repeated within the term for a maximum 11 credits.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BENG 501: Bioengineering Research Methods. 3 credits.
Examines approaches for scientific research with emphasis on bioengineering. Topics include biophysical origins of bioengineering measures, tools and technology for bioengineering data collection, basic principles of experimental design and statistical analyses, and interpretation of scientific results. Special attention will be given to ethical issues associated with the collection, use, and dissemination of data. Offered by Bioengineering (p. 1032). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Undergraduate level students.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BENG 514: Pathophysiology and the Role of New Technologies in Human Diseases. 3 credits.
This course will provide examples from clinical medicine of how patients are diagnosed and treated for diseases of their cardiovascular and neurological systems, as well as for cancer and in acute care (emergency) units. The etiology and pathogenesis of disease processes and the current roles of technologies in diagnosis and treatment will be discussed. Unmet needs in these clinical areas that require research and technology development will be identified and potential pathways towards clinical solutions investigated. Offered by Bioengineering (p. 1032). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: BENG 214C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BENG 520: Biomedical Data Analytics. 3 credits.
This course introduces the fundamental techniques and tools for analyzing biomedical data, important for many biomedical engineering problems. Topics include classification, regression, clustering, dimensionality reduction, data representation, and algorithm performance evaluation. Students will deepen their understanding of the concepts and gain hands-on experience on data analysis by applying algorithms to analyze and interpret various kinds of standard biological and biomedical data encountered in bioengineering fields. This course will be an innovative course leveraging hybrid learning through a combination of lectures, on-line content, and course project. Offered by Bioengineering (p. 1032). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: BENG 330C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BENG 521: Cell and Tissue Engineering. 3 credits.
This course is designed to provide exposure to the concepts of cell/tissue functions and behavior and strategies to manipulate their responses, biomaterials to construct scaffolds, modern techniques of artificial organ development and wound healing and most importantly, the utilization of engineering principles for biomedical applications. The course schedule has been packaged to not only provide fundamental information on the above topics, but also to stimulate team working skills, awareness of the current scientific developments through literature review, real-time experiences through lab visit and demo, and career opportunities through industrial visits. Offered by Bioengineering (p. 1032). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: BENG 240C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
**BENG 525: Neural Engineering.** 3 credits.
Provides an overview of topics in Neural Engineering. Topics covered range from sensory and motor prosthetic devices, stimulation of biological tissue, bioelectrodes and characterization techniques, brain-machine interfaces, and engineered devices to ameliorate neurodisorders. Prior knowledge in electrical or computer engineering disciplines required. Offered by Bioengineering (p. 1032). May not be repeated for credit. Equivalent to ECE 526.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 526: Neural Engineering.** 3 credits.
Provides an overview of topics in Neural Engineering. Topics covered range from sensory and motor prosthetic devices, stimulation of biological tissue, bioelectrodes and characterization techniques, brain-machine interfaces, and engineered devices to ameliorate neurodisorders. Prior knowledge in electrical or computer engineering disciplines required. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 530: Continuum Biomechanics and Biotransport II.** 3 credits.
This course provides and advanced and unifying treatment of the fundamental field equations describing the laws of continuum biomechanical systems including solids, fluids and transport phenomena in biological systems. Topics will include: blood and circulation, viscoelasticity, poroelasticity, thermoelasticity, and molecular and convective transport in biological systems. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 535: Multi-Scale Modeling and Simulation in Biomedicine.** 3 credits.
This course covers a variety of advanced computational methods for modeling biomedical systems spanning multiple scales, from cells and molecules to tissues, organs and systems. Topics include: modeling cell biomechanics, modeling biofluids including blood flows, modeling biotransport phenomena including bioheat and molecular diffusion, and modeling tissue biomechanics, and modeling organs and physiological systems. Computational techniques will include: discrete particle dynamics methods, finite differences and finite element methods, stochastic and agent-based modeling, and high-performance computing. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: BENG 230\textsuperscript{C} and 330\textsuperscript{C}.

\textsuperscript{C} Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 537: Medical Image Processing.** 3 credits.
This course aims at familiarizing the student with the basic concepts of image processing as they are applied to medical imaging problems. The first part of the course provides a brief overview of basic image processing, including image enhancement and restoration techniques. The second part of the course addresses problems that are central to medical image processing practice, including registration, segmentation and feature detection. This course also includes a project focused on biomedical image applications. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: BENG 360\textsuperscript{C}.

\textsuperscript{C} Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 538: Medical Imaging.** 3 credits.
Provides an introduction to the physical, mathematical and engineering foundations of modern medical imaging systems, medical image processing and analysis methods. In addition, this course introduces engineering students to clinical applications of medical imaging. The emphasis is on diagnostic ultrasound and magnetic resonance imaging methods, although several other modalities are covered. The course also provides an overview of recent developments and future trends in the field of medical imaging, discusses some of the challenges and controversies, and involves hands-on experience applying the methods
learned in class to real-world problems. Offered by Bioengineering (p. 1032). May not be repeated for credit. Equivalent to ECE 538.

**Recommended Prerequisite:** ECE 220 or equivalent

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

BENG 541: Biomaterials. 3 credits.
Covers the principles of biomaterials and biological interactions with materials, including an overview of biomaterials characterization, design and testing. Specific topics include the use of polymers, ceramics and metallics in biomaterials, drug delivery applications, tissue engineering from an orthopedic and vascular perspective, biocompatibility, acute and chronic biological response to implanted material, and in vitro and in vivo testing of biomaterials. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 213 or BENG 213 with a C or better CHEM 211 or CHEM 251 or BENG 201 with a C or better

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

BENG 551: Translational Bioengineering. 3 credits.
Demonstrates the process for the creation of both medical device prototypes and medical device companies. Focuses on designing and building a robust medical device prototype and writing a business plan. Also addresses cost of healthcare, reimbursement, regulatory processes, intellectual property, and marketing and sales aspects. Course will feature lectures, videos, and guest speakers who are successful medical device entrepreneurs. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

BENG 570: Bioinstrumentation and Devices II. 3 credits.
A major part of Bioengineering involves the design of instruments that allows us to both make measurements and intervene in living systems. This course delves deeper into two aspects of bioinstrumentation: the theory and use of different sensors commonly encountered in bioengineering devices, and the development of microcontroller-based circuits that interface with such sensors. Students will gain knowledge of microcontroller circuit design and programming, interfacing with sensors and their applications in Bioengineering. Students will demonstrate their understanding of the subject by designing a microcontroller-based device that performs a biomedically-relevant measurement. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
The course provides an understanding of i) intellectual property focusing on patents and the patent process in the US and globally, ii) regulatory frameworks for product approval such as FDA and international regulations, standards (ANSI, ASTM, ISO, GCP, GLP) and iii) product development including ideation and concept development, quality systems, global business models, financing and transactions. An overarching team project will involve invention, proof of concept, patenting, regulatory pathways and product development to market in a global context. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** BENG 240\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 590: Selected Topics in Bioengineering.** 3 credits.
Addresses selected topics from recent developments in various Bioengineering disciplines. Content may vary each semester depending on instructor and students' interests. Offered by Bioengineering (p. 1032). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**BENG 600: Bioengineering Seminar.** 0 credits.
Students are required to attend seminars, including talks by distinguished speakers, faculty candidates, and Mason faculty. Notes: Required attendance and participation in a minimum of 2 seminars per semester. Offered by Bioengineering (p. 1032). May be repeated within the degree.

**Recommended Prerequisite:** Admission to MS Bioengineering program.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**BENG 601: Collaborative Bioengineering Basic Science Research.** 3 credits.
This course provides exposure to research in the bioengineering department, provide a broad experience to interdisciplinary research, provide an overview of Biomedical Engineering to new graduate students, and connect students to faculty and scientists in other departments and institutions. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 602: Collaborative Bioengineering Clinical Science Research.** 3 credits.
This course provides exposure to biomedical research in the bioengineering department, provide a broad experience to interdisciplinary research, provide an overview of how biomedical engineering research can address clinical unmet needs to new graduate students, and connect students to faculty and clinicians in a hospital setting and different institutions. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 636: Advanced Biomedical Signal Processing.** 3 credits.
Provides an overview of advanced topics in biomedical signal processing with an emphasis on practical applications. Topics include introduction to physiological origins of biomedical signals, stochastic and adaptive signal processing, spectral estimation, signal modeling and analysis of nonstationary signals. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Recommended Prerequisite:** ECE 535 or equivalent; ECE 528 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BENG 641: Advanced Nanotechnology in Health. 3 credits.
Introduces interdisciplinary scientific and engineering approaches to solve relevant medical problems. Contents include polymer structure, composition, and material properties, natural and synthetic polymers, and their application to designing novel nanocarriers for controlled drug release, scaffolds for tissue engineering, and new vectors for vaccines. The relevance of nanotechnology to advance treatments for cancer, infectious and neurodegenerative diseases are discussed in depth. Offered by Bioengineering (p. 1032). May not be repeated for credit.

Recommended Prerequisite: BENG 541, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BENG 699: Advanced Topics in Bioengineering. 3 credits.
Advanced topics of current interest in bioengineering. Topics chosen so they do not duplicate other courses in department. Active participation encouraged in form of writing and presenting papers in research areas. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BENG 703: Bioengineering Laboratory Rotations. 0-9 credits.
Intensive introduction to a research laboratory in bioengineering. The student will read background material pertinent to the problem under study, learn and practice research methods of the laboratory, and formulate a short final project, which may be a proposal or an actual project, demonstrating some mastery of the techniques and approaches employed. Offered by Bioengineering (p. 1032). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BENG 725: Computational Motor Control. 3 credits.
Uses approaches from robotics, control theory, and neuroscience to understand biological motor systems. Contents include modeling muscles, reflexes and neural systems to understand how the central nervous system plans and controls movement of the eyes and limbs. The theoretical control problem is compared to known neuronal properties of the motor system and diseases of the motor system affecting movement control. Offered by Bioengineering (p. 1032). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BENG 738: Advanced Medical Image Processing. 3 credits.
Advanced Medical Image Processing covers advanced processing techniques used in modern medical imaging. The course aims at developing an understanding of the mathematical background, principles and application of techniques such as segmentation, registration, morphometry, general linear modeling, principal and independent component analysis. Offered by Bioengineering (p. 1032). May not be repeated for credit.

Recommended Prerequisite: BENG 320 (or equivalent), ECE 537 (or equivalent).

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BENG 745: Biomedical Systems and Microdevices. 3 credits.
Bio-micro-electro-mechanical systems (BioMEMS) provide a robust approach to mimic in vivo microenvironments within controlled in vitro settings. This course introduces students to the highly interdisciplinary field of Lab-on-a-Chip technologies with emphasis on its advanced applications in biological and biomedical engineering. In addition to the microfabrication processes, a variety of analytical techniques
Students in a Non-Degree Undergraduate degree may enroll. Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll. Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Recommended Prerequisite:**
May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 750:** Modeling and Simulation of Human Movement. 3 credits. Introduces the development and simulation of data-driven 3D neuromusculoskeletal models to quantitatively study human movement in health and disease. Topics include reconstructing 3D models from imaging data, estimating kinematics from motion data, simulating movement incorporating multimodality data, and analyzing muscle and joint forces. Students use computational biomechanics software. The course consists of lectures, article presentations, modeling assignments and a project. Offered by Bioengineering (p. 1032). May not be repeated for credit.

**Recommended Prerequisite:**
BENG 550 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Recommended Prerequisite:**
May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 798:** Independent Reading and Research in Bioengineering. 1-6 credits. Independent study in Bioengineering under the supervision of a faculty member, resulting in an acceptable technical report or presentation. This course may be repeated once for a total of 12 credit hours towards a graduate degree in Bioengineering. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Recommended Prerequisite:**
BENG 550 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**BENG 800:** Bioengineering Colloquium. 1 credit. Students are required to attend colloquia including talks by distinguished speakers, faculty candidates, and Mason faculty. Notes: Required attendance and participation in a minimum of 3 seminars per semester. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:**
Admission to PhD Bioengineering program.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Recommended Prerequisite:**
Admission to PhD Bioengineering program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**BENG 820:** Seminar in Neuroengineering. 3 credits. Selective analysis and discussion of topics in neuroengineering in areas of current research interest. Topics may include brain machine interfaces, advanced materials for implantable devices, computational neuroscience, neuronal biosensors and assays, and neuroprosthetics. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:**
Admission to PhD Bioengineering program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Recommended Prerequisite:**
Admission to PhD Bioengineering program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 830:** Seminar in Biomedical Imaging. 3 credits. Selective analysis and discussion of topics in biomedical imaging in areas of current research interest. Topics may include techniques and analyses for ultrasound, magnetic resonance imaging (MRI), functional MRI, nuclear imaging, computer assisted tomography, positron emission tomography, and emergent approaches to imaging for health and disease.
Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to PhD Bioengineering program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 840:** *Seminar in Nano-scale Bioengineering.* 3 credits.
Selective analysis and discussion of topics in nano-scale bioengineering in areas of current research interest. Topics may include nanoengineered materials, nanoscale devices and systems, and novel nano-scale fabrication and modeling approaches with application to biomedicine. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to PhD Bioengineering program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 850:** *Seminar in Biomechanics.* 3 credits.
Selective analysis and discussion of topics in biomechanics in areas of current research interest. Topics may include computational and physiological modeling for biomechanics, multiscale representation of biomechanical systems, data fusion techniques for biomechanics, and application of quantitative biomechanics for diagnostics or medical intervention. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to PhD Bioengineering program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BENG 998:** *Doctoral Dissertation Proposal.* 1-12 credits.
Work on research proposal that forms basis for doctoral dissertation. May be repeated as needed. Notes: No more than 24 credits of BENG 998 and 999 may be applied to doctoral degree requirements. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**BENG 999:** *Doctoral Dissertation.* 1-12 credits.
Formal record of commitment to doctoral dissertation research under direction of faculty member in bioengineering. May be repeated as needed. Notes: Once enrolled in 999, students must maintain continuous registration in 999 each semester until graduation, excluding summers. Students who defend in the summer must be registered for at least 1 credit of 999 in the summer. Offered by Bioengineering (p. 1032). May be repeated within the degree for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Bioinformatics (BINF)**

**300 Level Courses**

**BINF 334:** *Perl for Bioinformatics.* 3 credits.
Introduction into Perl programming language. Topics include data representation, control structures, file input/output, subroutines, regular expressions, debugging, relational databases. Emphasizes bioinformatics applications including DNA sequence analysis, parsing FASTA and GenBank files, processing BLAST output files, SQL or equivalent query language. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Recommended Prerequisite:** Knowledge of programming language or CS 112 or equivalent.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BINF 354:** *Foundations in Mathematical Biology.* 3 credits.
Interdisciplinary introduction to life sciences for physicists, chemists, engineers, and mathematicians. Combines knowledge from natural sciences, social and behavioral sciences, quantitative reasoning, and information technology. Covers selected topics in ecology, physiology, biochemistry, and behavior. May include biochemical reaction kinetics, Hodgkin-Huxley model for cellular electrical activity, continuous and discrete population interactions, and neural network models of learning.
Techniques utilized include ordinary differential equations, difference equations, algebraic equations, and computer simulations. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Mason Core:** Synthesis (p. 142)

**Recommended Prerequisite:** Completion or concurrent enrollment in all other required Mason Core courses (must include a chemistry course); MATH 114 or equivalent.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**BINF 401: Bioinformatics and Computational Biology I.** 3 credits.
Covers the following topics and related methodology: protein sequence, structure prediction, and modeling methods; nucleic acid sequence and structure prediction; gene structure prediction in prokaryotes and eukaryotes; elements of system biology. Students will learn programming approaches to solve bioinformatics problems. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Recommended Prerequisite:** BIOL 213, BIOL 214 and CDS 130 with a grade of C or better, or its equivalent, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BINF 402: Bioinformatics and Computational Biology II.** 3 credits.
Continuation of BINF 401 and studies in-depth several algorithms and methods used in bioinformatics and computational biology. Students will learn sequence alignment and assembly algorithms, hidden Markov models, classification and prediction methods, genome annotation. These techniques will then be applied to current bioinformatics problems. Programming assignments are incorporated in the course program. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Recommended Prerequisite:** BINF 401.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BINF 403: Bioinformatics and Computational Biology Lab I.** 1 credit.
Laboratories will introduce students to bioinformatics tools designed to answer research problems in the topics covered in lectures, such as sequence alignment, sequence pattern recognition, structural conformation modeling, phylogenetic analysis methods and image comparisons. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Recommended Corequisite:** BINF 401.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BINF 404: Bioinformatics and Computational Biology Lab II.** 1 credit.
Laboratories will introduce students to research bioinformatics tools relevant to lecture topics such as: the correspondence of measured fragments to parent biomolecules, inference methods for gene and protein networks, predicting system outputs given specified inputs. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Recommended Corequisite:** BINF 402

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BINF 450: Bioinformatics for Life Sciences.** 4 credits.
Teaches students how to understand the basis of and use of bioinformatics software in database searching, sequence analysis, gene identification, genomics, protein structure and phylogeny. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Recommended Prerequisite:** BIOL 213, and either BIOL 482 or CHEM 463 or BIOL 483.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BINF 470: Molecular Biophysics.** 3 credits.
Offers a broad introduction into molecular biophysics. Demonstrates that the application of methods of physics provides a unique opportunity to tackle complex biological problems. Designed for physics or chemistry majors; also useful for biology majors interested in bioinformatics and computational biology. Offered by School of Systems Biology (p. 786). Limited to three attempts. Equivalent to PHYS 370.

**Recommended Prerequisite:** PHYS 307 or CHEM 331, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BINF 490: Independent Senior Research in Bioinformatics and Computational Biology.** 3 credits.
Course offers individual research in bioinformatics and computational biology under the guidance of faculty member. Written report required upon course completion. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Recommended Prerequisite:** Permission of instructor.

**Schedule Type:** Research

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BINF 491: Senior Thesis in Bioinformatics.** 1 credit.
A project is chosen and completed under the guidance of a Bioinformatics Department faculty member. Notes: An oral progress report with a poster at the fall semester Bioinformatics Student Research Day is required. Offered by School of Systems Biology (p. 786). Limited to three attempts.

**Recommended Corequisite:** BINF 401.

**Schedule Type:** Research

**Grading:**
BINF 492: Senior Thesis in Bioinformatics. 1 credit.
A project is chosen and completed under the guidance of a
Bioinformatics Department faculty member. Notes: A written thesis
in standard format is required. Offered by School of Systems Biology
(p. 786). Limited to three attempts.

Recommended Corequisite: BINF 402.

Schedule Type: Research

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

BINF 530: Introduction to Bioinformatics Methods. 3 credits.
Introduction to methods and tools for pairwise sequence comparison,
multiple sequence alignment, phylogenetic analysis, protein structure
prediction and comparison, database similarity searches, and discovery
of conserved patterns in protein sequence and structures. Offered by
School of Systems Biology (p. 786). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Graduate, Non-Degree or Undergraduate level students may not enroll.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BINF 531: Molecular Cell Biology for Bioinformatics. 3 credits.
Intensive review of biochemistry, molecular biology, and cell biology
necessary OT begin research in bioinformatics. Topics include protein
biochemistry, nucleic acids biochemistry, DNA replication transcription,
and translation, recombinant DNA technology, genomics, molecular
structure of genes and chromosomes, and expression and control.
Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: Undergraduate 300 and 400 level courses in
biochemistry or cell biology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BINF 550: Introduction to Bioinformatics Database Design. 3 credits.
Students will acquire skills needed to exploit public biological databases,
and establish and maintain personal databases that support their own
research. Skills include learning underlying data models and the basics of
DBMS and SQL. Offered by School of Systems Biology (p. 786). May not
be repeated for credit.

Recommended Prerequisite: Introductory computer programming course,
or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BINF 630: Bioinformatics Methods. 3 credits.
Introduction to methods and tools for pairwise sequence comparison,
multiple sequence alignment, phylogenetic analysis, protein structure
prediction and comparison, database similarity searches, and discovery
of conserved patterns in protein sequence and structures. Offered by
School of Systems Biology (p. 786). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BINF 631: Molecular Cell Biology for Bioinformatics. 3 credits.
Intensive review of biochemistry, molecular biology, and cell biology
necessary to begin research in bioinformatics. Topics include protein
biochemistry, nucleic acids biochemistry, DNA replication transcription,
and translation, recombinant DNA technology, genomics, molecular
structure of genes and chromosomes, and gene expression and control.
Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: Undergraduate background in biochemistry,
or cell biology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 633: Molecular Biotechnology. 3 credits.**
Introduction to the theory and practice of molecular biotechnology, with emphasis on the application of tools in today's society. Includes study of recombinant DNA technology, genomics, and bioinformatics as applied to commercially important products. Lectures reflect more recent advances and applications in the commercial aspects of biology. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 634: Bioinformatics Programming. 3 credits.**
Data representation, control structures, file input/output, subroutines, regular expressions, debugging, introduction to relational databases. Emphasizes bioinformatics applications including DNA sequence analysis, parsing FASTA and GenBank files, processing BLAST output files, SQL, or equivalent query language. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 636: Microarray Methodology and Analysis. 3 credits.**
Theory and practice of genome analysis including genetics, biochemistry, and tools for analyzing global gene expression, and detection and quantification of genes and gene products. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BINF 633 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 637: Forensic DNA Sciences. 3 credits.**
Intensive introduction to parameters affecting data QC and analysis, including factors arising from biochemistry, chemistry, genetics, statistics, instrumentation, and software. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 639: Introduction to Biometrics. 3 credits.**
Introduction to methods for measuring humans. Topics include face, speaker, fingerprint, and shoeprint recognition; and handwriting analysis. Students develop computer programs to perform many of these tasks. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** CSI 603 and 604 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 641: Biomolecular Modeling. 3 credits.**
Introduction to basic principles and practice of computational biomolecular modeling. Students learn the elements of physical chemistry and molecular biology, which constitute the foundation of molecular modeling. Practical application of biomolecular software and development of related skills are emphasized through online lectures, homework, and course project. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Students are expected to be familiar with basic concepts of physics, calculus, and biology on undergraduate level.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture

BINF 650: *Introduction to Bioinformatics Database Design*. 3 credits.
Students will acquire skills needed to exploit public biological databases and establish and maintain personal databases that support their own research; such skills include learning underlying data models and the basics of DBMS and SQL. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: BINF 634 or equivalent, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BINF 690: *Numerical Methods for Bioinformatics*. 3 credits.
Computational techniques for solving scientific problems focusing on applications in bioinformatics and computational biology. Students develop the ability to convert a quantitative problem into computer programs to solve the problem. Emphasizes efficiency and readability of code. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: CS 112, MATH 113 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BINF 600 Level Courses

**BINF 701: Systems Biology.** 3 credits.
Systems biology seeks to understand how a complex biological system functions. This involves the use of computational methods and models to integrate information obtained about these systems through a wide range of methods that span multiple spatial and temporal scales. Current research examples will be used to motivate and demonstrate these approaches. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to BIOS 701.

**Recommended Prerequisite:** Admission to the Ph.D. program in Biosciences or Bioinformatics, CHEM 663 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BINF 702: *Biological Data Analysis*. 3 credits.
Trains students in research methodologies for life sciences. Covers the three phases of biological research projects: experimental design, data collection and data analysis. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Admission to PhD program in bioinformatics or biosciences or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BINF 703: *Bioinformatics Lab Rotation*. 1 credit.
Short-term introductory research on a specific topic in computational sciences and informatics under direction of faculty member. Offered by School of Systems Biology (p. 786). May be repeated within the term for a maximum 3 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Special scale. (p. 84)

BINF 704: *Colloquium in Bioinformatics*. 1 credit.
Seminar presentations in a variety of areas of bioinformatics and computational biology by COS faculty, staff, advanced PhD students, and professional visitors. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
\textbf{BINF 705: Research Ethics}. 1 credit.
Examines ethical issues in scientific research, reflecting on purpose and reviewing foundational principles for evaluating ethical issues. Provides skills for survival in scientific research through training in moral reasoning and teaching of responsible conduct. Students learn to apply critical-thinking skills to design, execution, and analysis of experiments and analysis of ethical issues in research, including use of animals and humans, standards in computer community, and research fraud. Guidelines for data ownership, manuscript preparation, and conduct of people in authority may be presented and discussed. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

\textbf{Recommended Prerequisite:} Permission of instructor.

\textbf{Registration Restrictions:}
Enrollment is limited to Graduate or Non-Degree level students.

\textbf{Students in a Non-Degree Undergraduate degree may not enroll.}

\textbf{Schedule Type:} Lecture

\textbf{Grading:}
This course is graded on the Graduate Regular scale. (p. 84)

\textbf{BINF 730: Biological Sequence and Genome Analysis}. 3 credits.
Fundamental methods for analyzing nucleic acid and protein sequences, including pairwise and multiple alignment, database search methods, profile searches, and phylogenetic inference. Development of probabilistic tools, including hidden Markov models and optimization algorithms. Survey of current software tools. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

\textbf{Recommended Prerequisite:} A course in molecular biology, a course in probability, and ability to program in a high-level language, or permission of instructor.

\textbf{Registration Restrictions:}
Enrollment is limited to Graduate or Non-Degree level students.

\textbf{Students in a Non-Degree Undergraduate degree may not enroll.}

\textbf{Schedule Type:} Lecture

\textbf{Grading:}
This course is graded on the Graduate Regular scale. (p. 84)

\textbf{BINF 731: Protein Structure Analysis}. 3 credits.
Computational methods for analyzing, classifying, and predicting three-dimensional protein structures. Covers theoretical approaches, techniques, and computational tools for protein structure analysis. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

\textbf{Recommended Prerequisite:} Permission of instructor, or previous courses in molecular biology, biochemistry, and computer programming.

\textbf{Registration Restrictions:}
Enrollment is limited to Graduate or Non-Degree level students.

\textbf{Students in a Non-Degree Undergraduate degree may not enroll.}

\textbf{Schedule Type:} Lecture

\textbf{Grading:}
This course is graded on the Graduate Regular scale. (p. 84)

\textbf{BINF 732: Genomics}. 3 credits.
Surveys computational tools and techniques to study whole genomes, and explores biological basis of genome analysis algorithms. Topics include genome mapping, comparative genomics, and functional genomics. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

\textbf{Recommended Prerequisite:} General biology, programming experience, CSI 700 or equivalent, CSI 731, or permission of instructor.

\textbf{Registration Restrictions:}
Enrollment is limited to Graduate or Non-Degree level students.

\textbf{Students in a Non-Degree Undergraduate degree may not enroll.}

\textbf{Schedule Type:} Lecture

\textbf{Grading:}
This course is graded on the Graduate Regular scale. (p. 84)

\textbf{BINF 733: Gene Expression Analysis}. 3 credits.
Analyzes gene expression data. Topics include cluster analysis and visualization of expression data, inference of genetic regulatory networks, and theoretical models of genetic networks. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

\textbf{Recommended Prerequisite:} Permission of instructor, ability to program in a high-level language and a course in molecular biology: S-Plus or Matlab experience recommended.

\textbf{Registration Restrictions:}
Enrollment is limited to Graduate or Non-Degree level students.

\textbf{Students in a Non-Degree Undergraduate degree may not enroll.}

\textbf{Schedule Type:} Lecture

\textbf{Grading:}
This course is graded on the Graduate Regular scale. (p. 84)

\textbf{BINF 734: Advanced Bioinformatics Programming}. 3 credits.
Topics include algorithm design, complex data structures, object oriented programming, relational databases, designing modules, and graphics and web programming. Students complete a bioinformatics programming project. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

\textbf{Recommended Prerequisite:} BINF 634, or permission of instructor.

\textbf{Registration Restrictions:}
Enrollment is limited to Graduate or Non-Degree level students.

\textbf{Students in a Non-Degree Undergraduate degree may not enroll.}

\textbf{Schedule Type:} Lecture

\textbf{Grading:}
This course is graded on the Graduate Regular scale. (p. 84)

\textbf{BINF 739: Topics in Bioinformatics}. 1-3 credits.
Selected topics in bioinformatics not covered in fixed-content bioinformatics courses. Offered by School of Systems Biology (p. 786). May be repeated within the term for a maximum 6 credits.

\textbf{Recommended Prerequisite:} Permission of instructor.

\textbf{Registration Restrictions:}
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 740:** *Introduction to Biophysics.* 3 credits.
Introduces biophysics, focusing on physical and chemical concepts and their relation to rapidly expanding interdisciplinary interfaces among biology, chemistry, and physics. Reveals multiscale nature of biophysics, and includes exploration of macroscopic and microscopic applications. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to PHYS 630.

**Recommended Prerequisite:** Undergraduate courses in General Physics, Calculus, and Biology.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 741:** *Introduction to Computer Simulations of Biomolecules.* 3 credits.
Details computational methods in biomolecular simulations, such as molecular dynamics and Monte Carlo algorithms. Special emphasis given to practical applications. Reviews most recent advances in biomolecular simulations. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Good programming skills, BINF 690 and 701, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 751:** *Biochemical and Cellular Systems Modeling.* 3 credits.
Mathematical and computational methods for analysis of cellular and subcellular processes. Topics may include ion channels, whole cell models, intracellular signaling, biochemical oscillations, pathway modeling, parameter estimation, and sensitivity analysis. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Calculus and knowledge of a computer programming language; and BINF 690 and 701; or permission of instructor. Course in differential equations is recommended.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 760:** *Machine Learning for Bioinformatics.* 3 credits.
Machine learning and data mining methods relevant to application to problems in computational biology. Methods include decision trees, random forests, rule learning methods, support vector machines, neural networks, genetic algorithms, instance-based learning, Bayesian networks, and evaluation metrics for learning systems. Applications include cancer prediction, gene finding, protein function classification, gene regulation network inference, and other recent bioinformatics applications selected from the literature. Notes: In addition to lectures from the instructor, students will present papers from the literature and complete a machine learning project. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BINF 630, BINF 631, and BINF 634, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 795:** *Bioinformatics Internship.* 1-3 credits.
Involves off-campus, professional work with approved agencies, institutions, non-profits, or businesses throughout the semester. The internship work must produce one or more products such as a comprehensive report, a departmental presentation, a research project, or an article. Internship placement and product type must be approved by the student’s faculty advisor. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Internship placement and parameters must be approved by the faculty advisor prior to registration.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 796:** *Directed Reading and Research.* 1-6 credits.
Reading and research on specific topic in computational sciences and informatics under direction of faculty member. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**BINF 798: Research Project.** 3 credits.
Project chosen and completed under guidance of graduate faculty member that results in acceptable technical report. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Twelve graduate credits and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**BINF 799: Master’s Thesis.** 1-6 credits.
Project chosen and completed under guidance of graduate faculty member that results in acceptable technical report (master’s thesis) and oral defense. Offered by School of Systems Biology (p. 786). May be repeated within the degree.

**Recommended Prerequisite:** Twelve graduate credits and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**BINF 820: Advanced Topics in Molecular Cell Biology.** 3 credits.
Topics may include cell structure, biomembranes and cell architecture, cell signaling, receptor activation, gene expression and control, protein targeting and trafficking, and cell cycle regulation. Notes: Advanced molecular and cellular biology foundation for BINF students. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BINF 631 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 831: Structural Genomics Project.** 3 credits.
Covers knowledge-based, large-scale protein structure analysis; classification and prediction of protein structure and function; and other current research topics in structural genomics. Projects address entire research enterprise from developing and defending proposal to peer-reviewed publication. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BINF 731, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 841: Research Topics in Biomolecular Simulations.** 3 credits.
Research-oriented course combining lectures and work on individual projects in biomolecular simulations. Topics include protein and peptide aggregation, binding, and unfolding and folding. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BINF 741, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**BINF 996: Doctoral Reading and Research.** 1-6 credits.
Reading and research on specific topic in computational sciences and informatics under direction of faculty member. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to doctoral program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BINF 998: Doctoral Dissertation Proposal.** 1-12 credits.
Covers development of research proposal, which forms basis for doctoral dissertation, under guidance of dissertation director and doctoral committee. Offered by School of Systems Biology (p. 786). May be repeated within the degree.

**Recommended Prerequisite:** Permission of advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**BINF 999: Doctoral Dissertation.** 1-12 credits.
Doctoral dissertation research under direction of dissertation director. Notes: No more than 24 credits in BINF 998 and 999 may be applied to doctoral degree requirements. Offered by School of Systems Biology (p. 786). May be repeated within the degree.

**Recommended Prerequisite:** Admission to doctoral candidacy. Students should contact the department for permission and CRN to register. Please indicate your major and semester in the subject heading.
**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy. Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Biology (BIOL)**

**100 Level Courses**

**BIOL 101: Biology Freshman Seminar.** 1 credit.
This course is for first-seminar freshman with a declared biology major. This elective will serve as a platform for freshman biology students to get practical advice and guidance for how to approach coursework, careers in biology, and professionalism. Offered by Biology (p. 641). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 103: Introductory Biology I.** 4 credits.
Topics include chemistry of life, cell structure and function, Mendelian genetics, evolution, and diversity of life. Notes: Survey course suitable for any major. May not be taken after BIOL 200-level or above courses have been taken. Offered by Biology (p. 641). Limited to three attempts. Equivalent to BIOL 103T, BIOL 105.

**Mason Core:** Natural Science with Lab (p. 142)

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 105: Introductory Biology I Laboratory.** 1 credit.
The chemical basis of life, the structure and function of the cell, Mendelian and human genetics, and the major animal phyla are presented. Notes: Not available to students who have taken BIOL 103 or the equivalent. Offered by Biology (p. 641). Limited to three attempts. Equivalent to BIOL 103.

**Recommended Prerequisite:** Permission of BIOL 103/104 coordinator and department chair.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 106: Introductory Biology II Laboratory.** 1 credit.
The structure and function of major organ systems of animals and an examination of the structure and function of plants, emphasizing the higher plants. Notes: Not available to students who have taken BIOL 104 or the equivalent. Offered by Biology (p. 641). Limited to three attempts. Equivalent to BIOL 104.

**Mason Core:** Natural Science with Lab (p. 142)

**Recommended Prerequisite:** Permission of BIOL 103/104 coordinator and department Chair.

**Registration Restrictions:**
**Required Prerequisites:** BIOL 107C or 104T C.
*May be taken concurrently.
**C Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 107: Intro Biology II Lecture.** 3 credits.
Topics include animal (including human) structure, function, homeostatic mechanisms, organ systems, behavior, higher plant systems, and major concepts in ecology. Note: Students are strongly urged to take BIOL 103 prior to BIOL 107. Survey course suitable for any major. May not be taken after BIOL 200-level or above courses have been taken. Offered by Biology (p. 641). Limited to three attempts.

**Mason Core:** Natural Science Overview (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 124: Human Anatomy and Physiology.** 4 credits.
Introduction to structure and function of body's major organ systems. Note: must be taken in sequence. Does not satisfy the natural science requirement in COS or CHSS. Course requires use of organisms. Not available for Biology major credit. Offered by Biology (p. 641). Limited to three attempts.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 125: Human Anatomy and Physiology.** 4 credits.
Introduction to structure and function of body's major organ systems. Notes: Does not satisfy the natural science requirement in COS or CHSS. Course requires the use of organisms. Not available for Biology major credit. Offered by Biology (p. 641). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** BIOL 124 C.
**C Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 140: Plants and People.** 3 credits.
An introduction to the interaction of plants and people from a biological perspective and the tools to continue life-long critical evaluation of emerging issues in human nutrition, agriculture, medicine, and global environmental change as they relate to plant biology. Designated a Green Leaf Course. Offered by Biology (p. 641). Limited to three attempts.

**Mason Core:** Natural Science Overview, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 140: Plants and People.** 3 credits.
An introduction to the interaction of plants and people from a biological perspective and the tools to continue life-long critical evaluation of emerging issues in human nutrition, agriculture, medicine, and global environmental change as they relate to plant biology. Designated a Green Leaf Course. Offered by Biology (p. 641). Limited to three attempts.

**Mason Core:** Natural Science Overview, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 177: Ecological Applications.** 3 credits.
This course introduces ecosystem concepts and applications to natural and managed ecosystems. This course will discuss the natural environment, ecological processes, and human interaction with and management of this environment. Humankind plays a major role in all worldwide environments and there is very little, if any, of the surface of this planet that remains untouched by human actions. Biologists, ecologists, environmental scientists, and policy makers, must provide for the needs of humanity while mitigating negative impacts on the natural environment. Offered by Biology (p. 641). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 200 Level Courses

**BIOL 213: Cell Structure and Function.** 4 credits.
For science majors and preprofessionals in life sciences. Introduction to cell chemistry, metabolism, and genetics. Note: for science majors and pre-professionals in the life sciences. Offered by Biology (p. 641). Limited to three attempts.

**Mason Core:** Natural Science with Lab (p. 142)

**Recommended Corequisite:** CHEM 211

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 214: Biostatistics for Biology Majors.** 4 credits.
An introduction to statistics used in the life sciences. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Corequisite:** BIOL 213

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 246: Introductory Microbiology.** 3 credits.
Introduction to microbial cell structure, physiology, and pathogenicity. Emphasizes control of microorganisms, host-parasite interactions including immunology, and viral and bacterial pathogens. Note: not available for Biology major credit or to students who have BIOL 305. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 124 and 125, one year of general biology, or permission of instructor.

**Recommended Corequisite:** BIOL 306.

**Registration Restrictions:**
Students cannot enroll who have a major in Biology.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 295: Summer Research in Biology.** 1-3 credits.
Students enrolled in this course study life science related topics in an approved research environment during the summer. This course may involve one or more of the following: reading peer reviewed literature, conducting a field or laboratory study, attending scientific seminars and workshops, writing an abstract, preparing and presenting a poster, or writing a research paper. Notes: May be taken for 1 to 3 credits and repeated once for a total of 3 credits. Total limit for BIOL 295 is 3 credits toward 44 credits for BS or BA (as long as the number of 100-200 level credits for the biology areas has not been exceeded). Offered by Biology (p. 641). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Permission of instructor and Biology Program Director.

**Schedule Type:** Research

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 300 Level Courses

**BIOL 300: BioDiversity.** 4 credits.
This course explores the fundamental principles governing organismal biology while introducing the three domains of life: the Archaea, the Bacteria, the Eukaryotes, plus viruses. Offered by Biology (p. 641). Limited to three attempts. Equivalent to BIOL 303, BIOL 304.

**Registration Restrictions:**

**Required Prerequisites:** BIOL 213 and/or BIOL 213.

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 301: Biology and Society.** 3 credits.
Biological problems facing society including pollution, cloning, emerging diseases, global warming, and overpopulation. Notes: Not available for biology major or minor elective credit. May be repeated if topic is different. Offered by Biology (p. 641). May be repeated within the term.

**Mason Core:** Synthesis (p. 142)

**Recommended Prerequisite:** BIOL 103 and 60 credits, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 302: Alternative Careers in Biology.** 1 credit.
This course will explore non-traditional careers that utilize a biology degree. Weekly seminars will allow biology undergraduates to discuss and explore the broad-range of career options that utilize a biology degree with professionals in those fields. Notes: Biology majors only. Offered by Biology (p. 641). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
BIOL 303: Animal Biology. 4 credits.
Emphasizes structure and function of vertebrates, but surveys all animal
groups and protozoa. Also covers evolutionary theory, and evolutionary
history of major animal groups. Course requires use of organisms.
Offered by Biology (p. 641). Limited to three attempts. Equivalent to
BIOL 300, BIOL 310.

Recommended Prerequisite: C or better in BIOL 213 or U213 or
permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 304: Plant Biology. 4 credits.
Introduction to study of plants, their structure, development, nutrition, and
ecology. Emphasizes flowering plants, but surveys all groups and their
phylogenetic relationships. Offered by Biology (p. 641). Limited to three
attempts. Equivalent to BIOL 310.

Recommended Prerequisite: C or better in BIOL 213 or U213, or
permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 305: Biology of Microorganisms. 3 credits.
Morphology, physiology, and pathogenicity of certain groups of bacteria,
fungi, and viruses; stresses host-parasite interactions. Offered by Biology
(p. 641). Limited to three attempts.

Recommended Corequisite: BIOL 306.

Registration Restrictions:
Required Prerequisites: (BIOL 213C or U213).
C Requires minimum grade of C.

Students cannot enroll who have a major in Nursing.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 306: Biology of Microorganisms Laboratory. 1 credit.
Laboratory techniques in culturing, staining, and identifying
microorganisms. Offered by Biology (p. 641). Limited to three attempts.

Recommended Corequisite: BIOL 305 or 246.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 308: Foundations of Ecology and Evolution. 5 credits.
An examination of the principles of ecology, evolution, and the impact
of humans on the world around them. Topics will include evolutionary
history, biological diversity, and analyzes of interactions among
organisms and between organisms and their environment. Offered by
Biology (p. 641). Limited to three attempts. Equivalent to BIOL 308T, BIOL
328, BIOL 338.

Specialized Designation: Scholarly Inquiry, Writing Intensive in Major

Recommended Prerequisite: BIOL 311.

Registration Restrictions:
Required Prerequisites: (BIOL 213C and 214C) or (EVPP 110C and
BIOL 214C).
C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 309: Introduction to Oceanography. 3 credits.
Introduction to chemical, biological, and geological aspects of oceanic
environment. May include field trips. Offered by Biology (p. 641). Limited
to three attempts. Equivalent to EVPP 309, GEOL 309.

Recommended Prerequisite: Two of the following lab sciences courses
are required for a total of 8 credits: [GEOL 101 or 102], [EVPP 110 or 111
or 210], CHEM 211 and 213, [BIOL 103 or 213], [PHYS 160 and 161 or 243
and 244].

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 310: Biodiversity. 3 credits.
Explores the fundamental principles governing organismal biology while
introducing the three domains of life: the Archaea, the Bacteria, the
Eukaryotes, plus viruses. One off-campus field trip is required. Notes:
BIOL 310 has replaced BIOL 303 and 304. Students who have taken
BIOL 310 may not receive credit toward the major for BIOL 303 and/or
BIOL 304. Offered by Biology (p. 641). May be repeated within the degree.
Equivalent to BIOL 303, BIOL 304.

Specialized Designation: Scholarly Inquiry.

Recommended Corequisite: BIOL 330.

Registration Restrictions:
Required Prerequisite: (BIOL 213C).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 311: General Genetics. 4 credits.
Basic principles of heredity and modern developments in this field.
Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 214.

Registration Restrictions:
Required Prerequisite: (BIOL 213C).
C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
BIOL 312: Biostatistics for Bioinformatics. 4 credits.
Use of probability and descriptive and inferential statistical techniques in interpreting biological data. Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 214 and CDS 130 with a grade of C or better, or its equivalent or permission of the instructor.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 314: Introduction to Research Design and Analysis. 4 credits.
Introduction to research design in a wide range of biological disciplines. Lecture will concentrate on how to design experiments with proper controls for statistical analysis, as well as obtaining permits and approvals from appropriate agencies. In recitation students will be given data sets to analyze. Offered by Biology (p. 641). Limited to three attempts.

Specialized Designation: Scholarly Inquiry.

Recommended Prerequisite: BIOL 213, BIOL 214 or 312 or equivalent introductory statistics course, BIOL 311, CHEM 211, 212, 213, 214; Completion of Biology core recommended; Must be enrolled in Biology Research Semester.

Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 318: Conservation Biology. 3 credits.
Introduction to science used to identify species in need of conservation and techniques to manage and protect organisms. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 318.

Recommended Prerequisite: BIOL 308 or BIOL 310, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 320: Comparative Chordate Anatomy. 4 credits.
Compares anatomy and morphology of major chordate groups. Lab emphasizes shark, mudpuppy, cat, and rabbit. Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 308 or BIOL 310 or permission of instructor.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 322: Developmental Biology. 3 credits.
Principles of embryonic development and differentiation in animal species at cellular, molecular, tissue, and whole organism levels. Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 213 or U213 and BIOL 311 or L311 or permission of instructor.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 323: Lab for Developmental Biology. 1 credit.
This laboratory will explore early developmental processes using classical and modern developmental, biology techniques. Students will have the opportunity to propose and carry out a small independent project using zebrafish as a model organism. Offered by Biology (p. 641). Limited to three attempts.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 326: Animal Physiology. 3 credits.
General consideration of animal function emphasizing common life problems and methods for solving them. Topics include intercellular communication (nervous and endocrine), metabolism, water and solute balance, and cardiovascular and respiratory physiology. Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 213 or U213 and BIOL 311 or L311, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 330: Biodiversity Lab and Recitation. 2 credits.
Explores the fundamental principles governing organismal biology while introducing the three domains of life: the Archaea, the Bacteria, the Eukaryotes, plus viruses. Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 213 or U213 with a grade of C or better or permission of instructor.

Recommended Corequisite: BIOL 310.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 331: Invertebrate Zoology. 4 credits.
Survey of invertebrate phyla, excluding insects, showing morphology, phylogeny, and general biology of these groups. Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 308 or BIOL 310 or permission of instructor.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 332: Insect Biology. 4 credits.
Survey of insects including taxonomy, morphology, physiology, behavior, ecology, and economic importance. Offered by Biology (p. 641). Limited to three attempts.
Recommended Prerequisite: BIOL 308 or BIOL 310, or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 334: Vertebrate Paleontology. 4 credits.
Vertebrate Paleontology explores the evolution of vertebrates from the early Paleozoic to Recent. The course will cover the systematics, anatomy, paleogeography, and ecology of extinct vertebrates. Discussions will include fishes, early tetrapods & amniotes, dinosaurs, birds and mammals. Lab portion includes paleontology techniques, analysis, and study of fossil specimens and casts. A weekend field trip is included. Offered by Biology (p. 641). Limited to three attempts. Equivalent to GEOL 334.

Recommended Prerequisite: Any two courses from the following list: GEOL 101, GEOL 102, BIOL 103, BIOL 104, BIOL 213, BIOL U213, BIOL 310 or the permission of the instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 335: Forensic Entomology. 3 credits.
Explores the use of insects and other arthropods in field of forensic science as it pertains to the investigations of human and animal deaths and abuse, food and other product contamination, thefts, the illegal drug trade and unethical entomological practices. The use and presentation of this information from such investigations in court room proceedings will be discussed. Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 213 or U 213 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 336: Invertebrate Paleontology. 4 credits.
Classification, evolutionary trends, and distribution of common invertebrate fossils. May include field trips. Notes: May include field trips. Offered by Biology (p. 641). Limited to three attempts. Equivalent to GEOL 312.

Recommended Prerequisite: Either GEOL 101 and GEOL 102; or BIOL 103 and BIOL 104; or BIOL 213 or U213 and BIOL 310.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 338: Lab for Fundamentals of Ecology and Evolution. 2 credits.
This is a writing intensive experience and laboratory for transfer students who have previously taken an equivalent course to BIOL 308 that did not have a lab and did not meet the writing intensive requirements in the biology major. This course is paired with BIOL 308. Offered by Biology (p. 641). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: BIOL 308 or BIOL 310, or permission of instructor.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 344: Plant Diversity and Evolution. 4 credits.
Investigates the diversity of vascular plants, including angiosperms, their evolutionary relationships, and the bases of their classification and identification. Offered by Biology (p. 641). Limited to three attempts.

Recommended Prerequisite: BIOL 308 or BIOL 310, or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 350: Freshwater Ecosystems. 4 credits.
Studies physical, chemical, and biological processes in lakes, streams, and wetlands. Lectures, field trips, and lab exercises teach physical and chemical aspects of aquatic systems and life cycles, and adaptations of aquatic organisms. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 350.

Recommended Prerequisite: CHEM 211/213 and CHEM 212/214 or CHEM 155/156 and BIOL 308 or EVPP 301.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 351: Conservation Seminar. 2 credits.
Examines key conservation issues, based on readings and discussions from the primary literature. Teaches professional development skills for scientists in conservation including fundraising, poster presentations, and interpretation of findings for diverse audiences. Develops skills for obtaining internships, jobs, or graduate positions. Offered by Biology (p. 641). May be repeated within the degree for a maximum 4 credits. Equivalent to CONS 400.

Recommended Prerequisite: EVPP 301 or EVPP 302 or BIOL 308 or INTS 401 (or equivalent course) or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 352: Monitoring and Assessment of Biodiversity.** 4-6 credits.
Assessment, monitoring and conservation of species and habitats. Use tools for sampling species and habitats as well as how to evaluate their effectiveness. Apply this practical, hands-on knowledge to prepare a series of reports and recommendations for future work. Offered by Biology (p. 641). Limited to three attempts. Equivalent to CONS 404.

**Recommended Prerequisite:** EVPP 301 or EVPP 302 or BIOL 308 or INTS 401 (or equivalent course) or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 353: Small Population Management.** 4 credits.
Investigates species vulnerability to extinction and the methodologies of preserving genetic diversity in small populations, both in the wild and in captivity. Teaches modeling and laboratory techniques that promote successful captive breeding, such as hormone analysis and assisted reproductive techniques. Examines captive species in the Smithsonian Conservation Biology Institute to learn husbandry practices and skills from keepers and biologists. Offered by Biology (p. 641). Limited to three attempts. Equivalent to CONS 406.

**Recommended Prerequisite:** EVPP 301 or EVPP 302 or BIOL 308 or INTS 401 (or equivalent course) or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 354: Research in Conservation.** 5 credits.
One-on-one research experience with a conservation practitioner over 5 weeks (about 36 hours per week) on a conservation research project associated with that practitioner’s program. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** EVPP 301 or EVPP 302 or BIOL 308 or INTS 401 (or equivalent course) or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 355: Ecological Engineering and Ecosystem Restoration.** 4 credits.
Provides definition, classification and practice of ecological engineering and ecosystem restoration. Describes general system ecology, ecosystem restoration, and the utilization of natural processes to provide ecosystem services to society and benefits to nature. Provides students with a systems-oriented perspective on environmental studies. Students will study principles in general system ecology and ecological engineering and explore practices in sustainable ecological design by carrying out a hands-on experimental design project with field microcosms/meocosms in a newly established Wetland Mesocosm Compound on the campus. This course will involve a field trip (1-2 days). Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** CHEM 211 and CHEM 213, BIOL 308 or EVPP 301, and PHYS 243.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 356: Landscape and Macrosystems Ecology.** 4 credits.
Detect and characterize patterns in landscapes. Investigate how they form and change over time, and with anthropogenic influences. Models populations and communities across landscapes, and ways of managing them to achieve goals in managing species and ecosystem processes at local, regional, and continental scales. Offered by Biology (p. 641). Limited to three attempts. Equivalent to CONS 405.

**Recommended Prerequisite:** (EVPP 301 and EVPP 302) or BIOL 308 or INTS 401 or equivalent course.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 357: Ecology Field Skills.** 4 credits.
In this course, you will be introduced to a variety of field techniques used in ecological research through occasional classroom lectures and intensive field activities. You start with an overview of sampling methodologies common to the discipline and progress to hands-on and remote sampling techniques for plants, insects, amphibians, reptiles, birds and mammals. You will become familiar with Virginia's flora and fauna, gain experience in sampling and identifying representative plants, invertebrates and vertebrates, and obtain experience in making observations and characterizing ecological interactions related to population, community, and behavioral ecology. Also, you will maintain a field journal and complete a research proposal following adapted guidelines of Mason's OSCAR program. Come to Front Royal ready to work hard and to spend long days in the field. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 308 or BIOL 310 (or equivalent) or INTS 401

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 374: Biogeography: Space, Time, and Life.** 3 credits.
A survey of the relationship between the distribution of plants and animals on the earth surface and the physical geography and environmental characteristics. Offered by Biology (p. 641). Limited to three attempts. Equivalent to GGS 321.

**Recommended Prerequisite:** One of the following: BIOL 310, GGS 122, GGS 102, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Introduction to ecosystem concepts and their applications to natural and managed ecosystems. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 377.

**Schedule Type:** Lecture
BIOL 379: RS: Ecological Sustainability. 4 credits.
Introduces the concepts and applications of several important topics relating to ecological sustainability. Focuses on the role of soils in maintaining and managing environmental quality. Teaches students how to understand and interpret scientific data presented in various types of literature covering ecological sustainability. Offered by Biology. Limited to three attempts. Equivalent to EVPP 378.

Mason Core: Capstone (p. 142)

Specialized Designation: Green Leaf Focused Course, Research/ Scholarship Intensive

Recommended Prerequisite: BIOL 308 or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 382: Introduction to Virology. 3 credits.
An introduction to the fundamental nature of viruses, their classification, morphology, chemistry and their role in human disease. Offered by Biology. Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (BIOL 305C or L305) or (BIOL L246 or 246C).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 385: Biotechnology and Genetic Engineering. 3 credits.
Emphasizes theory and applications, including significance and societal implications of biotechnology applied to medicine, agriculture, and environment. Offered by Biology. Limited to three attempts.

Registration Restrictions:
Required Prerequisites: BIOL 311C or L311.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

BIOL 401: Phage Discovery. 3 credits.
Discovery-based undergraduate research course where students purify phage from soil, use a variety of microbiology techniques, annotate phage genomes and use bioinformatics analyses. Offered by Biology. Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (BIOL 305C, L305, L246 or 246C) and (BIOL L306 or 306C).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 402: Applied and Industrial Microbiology. 3 credits.
Biology of microorganisms of ecological and industrial significance. Includes food production, spoilage and preservation, fermentation technology, waste disposal, water purification, biodeterioration, and decomposition. Offered by Biology. Limited to three attempts.

Registration Restrictions:
Required Prerequisites: BIOL 305C, L305, 246C or L246.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 403: Techniques in Applied and Industrial Microbiology. 1 credit.
Lab exercises illustrate basic and applied methodologies, including isolation of commercially useful strains. Discusses production and purification of industrial products. Offered by Biology. Limited to three attempts.

Recommended Prerequisite: BIOL 213 or U213, BIOL 305 or L305, BIOL 306 or L306, CHEM 211/213, CHEM 212/214; BIOL 402 (concurrent enrollment is permitted) or permission of instructor.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 404: Medical Microbiology. 3 credits.
Basic principles of infectious diseases caused by bacteria and viruses. Discusses genetics and molecular mechanisms of pathogenicity. Offered by Biology. Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (BIOL 305C or L305) or (BIOL 246C or L246).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 405: Microbial Genetics. 4 credits.

Registration Restrictions:
Required Prerequisites: (BIOL 305C or L305) and (BIOL 306C or L306).
C Requires minimum grade of C.
**BIOL 305: Mushrooms, Molds and Society.** 3 credits. Provides a modern, comprehensive knowledge of fungal biology including classification, phylogeny, structure, physiology/metabolism, growth and development, genetics, industrial applications including biotechnology, ecological roles including pathogenic interactions with plants, animals, and man. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 408.

**Recommended Prerequisite:** EVPP 110 and 111 or EVPP 210 or BIOL 213.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 306: Advanced General Genetics.** 3 credits. Topics include quantitative genetics, extrachromosomal inheritance, and special techniques such as mutation screening, developmental genetics, cancer genetics, behavior genetics, evolutionary genetics, and ethics of genetic technology. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** C or better in BIOL 311 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 311: Microbial Diversity.** 4 credits. Stresses evolution of microbial species, biochemical cycling, and species interactions. Laboratory stresses use of cultural, biochemical, and phylogenetic methods to study microbial isolation, metabolism, and identification. Offered by Biology (p. 641). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** (BIOL 305C or L305) and (BIOL 306C or L306).
C Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 312: Medical Mycology.** 3 credits. Provides the student with current knowledge of both the medical and microbiological aspects of fungal diseases in humans, including the etiologic agents, geographic distribution, epidemiology, transmission, determinants of pathogenicity, laboratory detection, and therapy associated with the major human mycoses. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 409.

**Recommended Prerequisite:** BIOL 213 or U213 with a grade of C or better.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 313: Histotechniques.** 3 credits. Introduces theory and methods for the preparation of tissue samples from animal or plant specimens for examination with light or electron microscopy. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 311 and permission of instructor. May not be combined with BIOL 572 for credit. For Biology majors only. Undergraduate courses in biology and chemistry or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 314: Selected Topics in Molecular and Cellular Biology.** 1-4 credits. Study of current topics in molecular and cellular biology. Lecture, laboratory. Notes: Topics vary. Offered by Biology (p. 641). May be repeated within the term for a maximum 8 credits.

**Recommended Prerequisite:** BIOL 311 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 315: Advanced General Genetics.** 3 credits. Topics include quantitative genetics, extrachromosomal inheritance, and special techniques such as mutation screening, developmental genetics, cancer genetics, behavior genetics, evolutionary genetics, and ethics of genetic technology. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** C or better in BIOL 311 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 316: Current Topics in Microbiology.** 3 credits. Study of current topics in microbiology. Notes: Topics vary. Offered by Biology (p. 641). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** BIOL 305 or BIOL L305.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**Registration Restrictions:**
**Required Prerequisites:** (BIOL 305C or L305) and (BIOL 246C or L246). **C** Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 421: Genetics of Human Diseases. 3 credits.** Emphasizes strategies used for identification of genes involved in human genetic diseases. Both monogenic and complex human genetic diseases, as well as principles of genetic screening and counseling, will be presented. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 311.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 422: Stem Cell Biology and Regenerative Medicine. 3 credits.** A broad overview of the biological principles governing stem cell populations. The functional roles stem cells play in regulating normal development and contributing to disease-state pathologies. An examination of the therapeutic potential of stem cells through "regenerative medicine." Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 311.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 423: Biology of Obesity and Weight Loss. 3 credits.** This course covers the causes and consequences of obesity and weight loss, including the general epidemiology and pathology of co-morbid conditions associated with obesity. The relative contributions of genetic and environmental factors influencing weight gain will be covered as well as recent trends in obesity research. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 213 or U213 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 425: Human Physiology. 3 credits.** Organ system approach to study of homeostasis, including cardiovascular, respiratory, renal, digestive, endocrine, and nervous system functions. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 213 or U213 or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 426: Mechanisms of Aging. 3 credits.** A course where students will demonstrate knowledge of cellular and molecular mechanisms which drive the systematic changes that result in aging, and to understand the overall biological processes involved in complex biological systems. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 213 or U213 and BIOL 311 or L311 or equivalent; or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 427: Disease Ecology and Conservation. 3 credits.** Presents the trans-disciplinary discipline of conservation medicine, the study of relationships between organism and ecosystem health and environmental conditions. Topics include infectious and noninfectious diseases, pathogens, processes, and impacts on human, biotic, and ecosystem health, and how to address the consequences of diseases to populations and ecological communities. Notes: This course will co-meet with EVPP 527. Undergraduate students in this course will have separate (shorter) reading and writing assignments and will be graded according to a different rubric than the graduate students. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 427.

**Recommended Prerequisite:** 60 credits and BIOL 213 or BIOL/ EVPP 305/306 and BIOL 308 or EVPP 301, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 430: Advanced Human Anatomy and Physiology I. 4 credits.** Organ system approach to studying the structure and function of the human organism and maintenance of homeostasis. Detailed discussion of anatomical structures and their functions of the endocrine, nervous, muscular, skeletal, and integumentary systems following introduction to the cellular and tissue levels of organization. Topics also include selected pathology for each organ system; current therapeutic interventions are addressed. Notes: Biology 124 is not approved for Biology Majors. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** 60 credits.

**Registration Restrictions:**
**Required Prerequisite:** BIOL 213C. **C** Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 431: Advanced Human Anatomy and Physiology II. 4 credits.** Continued study of the structure and function of the human organism and maintenance of homeostasis. Detailed discussion of anatomical structures and their functions of the cardiovascular, lymphatic, respiratory, urinary, digestive and reproductive organ systems. Topics
also include selected disorders for each organ system to illustrate disruption of homeostasis. Offered by Biology (p. 641). Limited to three attempts.

**Registration Restrictions:**

**Required Prerequisite:** BIOL 430\(^C\).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 433: *Selected Topics in Plant Biology.* 1-4 credits.
Lecture or field course in botany. Topic varies with instructor’s specialty. Offered by Biology (p. 641). May be repeated within the degree for a maximum 8 credits.

**Recommended Prerequisite:** BIOL 310 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 435: *Selected Topics in Biology.* 4 credits.
Topics vary with instructor’s specialty. Offered by Biology (p. 641). May be repeated within the degree for a maximum 8 credits.

**Recommended Prerequisite:** Permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 437: *Ornithology.* 4 credits.
Study of evolution, systematics, physiology, ecology and behavior of birds, emphasizing field work. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 308 or equivalent or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 438: *Mammalogy.* 4 credits.
Study of evolution, systematics, physiology, ecology and behavior of mammals, emphasizing field work. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 308 or equivalent or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 439: *Herpetology.* 4 credits.
Study of evolution, systematics, physiology, ecology and behavior of reptiles, emphasizing field work. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 308 or equivalent or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 440: Field Biology.** 0-4 credits.
Directed field studies emphasizing ecology and behavior. Topics vary but include design of field manipulations, data collection and analysis, and introduction to organisms of study site. May include field trips. Notes: Students bear cost of required field trips. May be repeated with permission of Biology Program. Total limit of 4 credits. This course does not satisfy requirements of the BA degree or BS degree, which state that students must complete at least one (BA degree) or two (BS degree) upper division courses that include a laboratory. Offered by Biology (p. 641). May be repeated within the degree for a maximum 4 credits. Equivalent to EVPP 440.

**Recommended Prerequisite:** BIOL 308 or BIOL 310 or permission of instructor.

**Schedule Type:** Fieldwork

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 442: Urban Ecosystems and Processes.** 4 credits.
Overview and introduction of challenges and opportunities that urban environments present to the plants and animals inhabiting cities and the ways that those organisms and entire ecosystems respond. Ecosystem ecology for engineered ecosystems along with reviews of urban metabolism, energy budgets, water cycles, and soil ecology taught. Creating and restoring green infrastructures is discussed. Note: the course will involve students to design and conduct a small-scale green infrastructure experiment/project on the campus. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 442.

**Recommended Prerequisite:** CHEM 211 and CHEM 213 and MATH 113 or equivalent and BIOL 308 and PHYS 243 or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 443: Tropical Ecology.** 3 credits.
An introduction to the abiotic and biotic factors that define tropical habitats. The course emphasizes evolution, taxonomic diversity, and plant-animal interactions in terrestrial tropical forests. Offered by Biology (p. 641). Limited to three attempts.

**Registration Restrictions:**

**Required Prerequisites:** BIOL 308\(^C\) or 310\(^C\).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
BIOL 444: *Tropical Ecology Laboratory.* 1 credit.
An introduction to field-based scientific research. This course focuses on methods for testing hypotheses related to tropical plant and animal biology. Offered by Biology (p. 641). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** BIOL 308\(^C\) or 310\(^C\).
\(^C\) Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 446: *Ecological and Evolutionary Physiology.* 3 credits.
Physiological responses organisms use to survive and reproduce successfully in their ever-changing environments. Responses to temperature, salinity, low oxygen levels and diet will be covered from a phylogenetic and energetic perspective. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 308 or BIOL 310, and BIOL 326 or BIOL 430 and BIOL 431, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Biology.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 449: *Marine Ecology.* 3 credits.
Plants and animals of marine environments and physical and chemical conditions that affect their existence. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 449.

**Recommended Prerequisite:** BIOL 308 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 450: *Marine Conservation.* 3 credits.
Provides an overview of threats to the marine environment, and discusses the scientific, socioeconomic, and political issues behind marine conservation. covers categories of marine pollutants (chemical, biological, and physical contaminants) and their impacts on the marine ecosystem, as well as impacts on humans (health, social, and economic), threats to key marine species (e.g., coral, sharks, turtles, and marine mammals) and initiatives and laws developed to reduce these threats. Scientific and socioeconomic problems that hinder sustainable fisheries management and the science and policy behind the global warming debate are also discussed. The course also provides an overview of marine environmental law and policy issues related to marine conservation policy. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 421.

**Recommended Prerequisite:** BIOL 309 or equivalent, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 452: *Immunology.* 3 credits.
Topics include structure and function of immunoglobulins, role of cell-mediated immunity, protective role of immune system, and disease and injury related to malfunctions of immune system. Offered by Biology (p. 641). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry.

**Recommended Prerequisite:** BIOL 311.

**Registration Restrictions:**
**Required Prerequisites:** BIOL 213\(^C\) and (BIOL 305\(^C\) or L305) and (BIOL L306 or 306\(^C\)).
\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 453: *Immunology Laboratory.* 1 credit.
Techniques relevant to BIOL 452, including enzyme-linked immunoabsorbant assay, immunodiffusion, protein electrophoresis, and immune fixation. Offered by Biology (p. 641). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry.

**Recommended Prerequisite:** BIOL 452 (concurrent enrollment is also permitted).

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 454: *Marine Mammal Biology and Conservation.* 3 credits.
Covers the evolution, biology, ecology, and behavior of marine mammals from polar bears and sea otters to whales and dolphins. Marine mammal conservation and policy is also a major component of the course; several, lecture sessions are devoted to the issue of whaling, threats to marine mammal populations, and recent conservation issues such as marine mammals and noise pollution. The course also includes a number of guest lectures from a variety of international marine mammal experts. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 419.

**Recommended Prerequisite:** BIOL 309 or BIOL 449 or equivalent; or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

BIOL 455: *Marine Mammal Biology and Conservation Field Course.* 1 credit.
Provides laboratory, seminar sessions and field work to accompany BIOL 454-001 - marine mammal biology and conservation. Field work includes several day-long boat trips. May take place in the US or abroad. The two week residential field course takes place in Scotland at the University (of London) Marine Biological Station, which is equipped with boats and laboratories. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 420.

**Recommended Corequisite:** EVPP 419 or 454
**BIOL 457: Reproductive Strategies.** 3 credits.
Introduction to the research and evolutionary theory of sex and reproduction. Covers topics from the evolution of sex and gender to the evolution of complex reproductive strategies involving behaviors such as mate recognition, courtship displays, territoriality, polygamy, and offspring care. Lectures focus primarily on multi-cellular animals but also include discussions of unicellular prokaryotes and eukaryotes as well as plants. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 307 or 308 and 60 hours.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 459: Fungi and Ecosystems.** 3 credits.
Considers impact of fungi on ecosystems in terms of biogeochemical cycling, primary and secondary production, and regulating community structure and populations of individual species through their activities as symbionts and parasites. Discusses role of fungi in ameliorating pollutants produced by anthropogenic activities. Offered by Biology (p. 641). Limited to three attempts. Equivalent to BIOL 559, EVPP 551.

**Recommended Prerequisite:** BIOL 308 or BIOL 310 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 460: Infectious Diseases Wildlife.** 3 credits.
During this course, diseases of wildlife will be examined with emphasis on causes and mechanisms, pathobiology, ecology and epidemiology and population significance. We will explore methods of diagnosis, control, prevention and outbreak investigation as they apply to management and conservation of wildlife populations. Also, diseases crossing species barriers will be examined. Offered by Biology (p. 641). Limited to three attempts. Equivalent to EVPP 460.

**Recommended Prerequisite:** 60 credits and BIOL 308 or EVPP 301 or permission of the instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 465: Histology.** 4 credits.
Microscopic structure of animal tissues and organs, with emphasis on vertebrates. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 308 or 310.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 468: Vertebrate Natural History.** 4 credits.
Introduces vertebrates with emphasis on systematic, evolution, life history, behavior and ecology. Laboratory emphasis on identification, taxonomy, and natural history of local vertebrates. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 308 or permission of the instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 470: Dinosaur Biology.** 3 credits.
Introduction to the evolution, diversity, and biology of the dinosaurs and their descendants. Emphasis on how current biological knowledge is used to estimate and inter the morphology, physiology and ecology of these extinct animals. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 308 or BIOL 310 or permission of instructor.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 471: Evolution.** 3 credits.
Process of evolution emphasizing role of genetics, properties of populations, and population differentiations. Offered by Biology (p. 641). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** (BIOL 308
C).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 472: Introductory Animal Behavior.** 3 credits.

**Recommended Prerequisite:** BIOL 308 or BIOL 310 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 473: Introductory Laboratory in Animal Behavior.** 1 credit.
Field or laboratory study in animal behavior with emphasis on mechanisms, functions, and evolution of behavior. Stresses experimental design and analysis of data. Writing-intensive laboratory. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 472 (concurrent enrollment also permitted).

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 480: The Diversity of Fishes.** 3 credits.
This course delves into the biology and ecology of fishes. Subjects of this class include fish anatomy, taxonomy, evolution, habitat adaptations, community dynamics, and ecosystem interactions. The course will also touch on human impacts on fishes, and conservation. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 309, BIOL 310, and BIOL 350/ EVPP 350.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 482: Introduction to Molecular Genetics.** 3 credits.
Basic concepts of structure and function of genetic material at molecular level. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 213 or U213, BIOL 311 or L311 or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 483: General Biochemistry.** 4 credits.

**Registration Restrictions:**
**Required Prerequisites:** (BIOL 213C or U213C) and (CHEM 313C or L313C).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 484: Cell Signaling and Disease.** 3 credits.
Expands on the key concepts of eukaryotic cell biology including the cell cycle, the cytoskeleton, cellular transport, the membrane and protein trafficking and cellular signaling. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 483 or permission of instructor.

**Registration Restrictions:**
**Required Prerequisite:** BIOL 311C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 485: Cell Signaling Laboratory.** 2-3 credits.
Introduction research method application via techniques of cellular and molecular biology including: tissue culture, western blotting, PCR, microscopy, cellular transfection and transformation. Offered by Biology (p. 641). Limited to three attempts. Equivalent to BIOL 585.

**Recommended Corequisite:** BIOL 484 or permission of instructor.

**Schedule Type:** Laboratory

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 486: Molecular Biology and Biotechnology Laboratory.** 2 credits.
Introduction to theory, techniques, and practices used in modern molecular biotechnology laboratories. Offered by Biology (p. 641). Limited to three attempts.

**Recommended Prerequisite:** BIOL 385 or BIOL 482.

**Schedule Type:** Laboratory

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 489: Teaching Practicum.** 1-3 credits.
Student gains teaching experience in a lecture, laboratory or field environment under the supervision of a faculty member. Student responsibilities may include a lecturing component, but may also include lab preparation, design of course materials, tutoring and grading. Course may be repeated once. Offered by Biology (p. 641). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** BIOL 213 or U213, 311 or L311, 60 credit hours and permission of instructor, course coordinator (where applicable) and Program Director.

**Schedule Type:** Internship

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 492: Senior Seminar.** 1 credit.
Weekly seminar course dealing with recent advances in biology. Topics selected from recent publications in the field. May be repeated for credit. Offered by Biology (p. 641). May be repeated within the degree for a maximum 2 credits.

**Recommended Prerequisite:** BIOL 311 and 90 credit hours, or permission of instructor.

**Registration Restrictions:** Enrollment is limited to students with a major in Biology.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 493: Honors Research in Biology.** 1-2 credits.
Laboratory of field investigation under guidance of faculty member. Notes: Total limit for BIOL 493, 495 and 497 is 6 credits toward the 44 credit hours required for the Biology BS degree and only 3 credits toward the 32 hours required for the BA degree. Combined 493, 495 and 497 may not exceed 4 credit hours in any one semester. Offered by Biology (p. 641). May be repeated within the degree for a maximum 2 credits.

**Recommended Prerequisite:** Admission to the Biology Honors Program, permission of instructor and Biology Program Program Director.

**Registration Restrictions:** Enrollment is limited to students with a major in Biology.
Enrollment limited to students in the College of Science college.

**Schedule Type:** Research

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 494: Honors Seminar in Biology.** 1 credit.
Weekly seminar course dealing with recent advances in biology. Notes: Topics selected from recent publications in field. Offered by Biology (p. 641). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Acceptance into Biology honors program and permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 495: Directed Studies in Biology.** 1-2 credits.
Study of a topic not otherwise available to student. May involve reading assignments, tutorials, lectures, papers, presentations, or field study, determined in consultation with instructor. May be taken for 1 to 2 credits and repeated once for a total of 2 credits. Total limit for combination of 495 and 497 is 6 credits toward 44 credits for BS and 3 credits toward 32 credits for BA. This course does not satisfy requirements of the BA degree or BS degree. Offered by Biology (p. 641). May be repeated within the degree for a maximum 2 credits.

**Recommended Prerequisite:** Permission of instructor and Biology Program Director.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 497:** Special Problems in Biology. 1-3 credits.
Lab or field project leading to written report of research. Research and paper completed under instructor’s guidance. Notes: Total limit for 495 and 497 combined is 6 credits toward the 44 credits required for BS and 3 credits toward 32 credits for BA. Combined BIOL 493, 495, 497 may not exceed 4 credit hours in any one semester. This course does not satisfy requirements of the BA degree or BS degree, which state that students must complete at least one (BA degree) or two (BS degree) upper division courses that include a laboratory. Offered by Biology (p. 641). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 60 credits and permission of instructor and chair.

**Schedule Type:** Research

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 498:** Research Seminar. 2 credits.
Seminar discussing current scientific literature and literature related to research project undertaken by student as part of the research semester. Note: Must be enrolled in Biology Research Semester. Registration must be approved by a faculty sponsor and by the Biology Program Director and is limited to students who are enrolled concurrently in BIOL 499. For students in the Biology Honors Program, this course may be used to substitute for one credit of BIOL 494: Honors Seminar in Biology. Offered by Biology (p. 641). Limited to three attempts.

**Specialized Designation:** Impact Associated.

**Recommended Prerequisite:** BIOL 213 or U213, BIOL 214 or 312 or equivalent introductory statistics course, BIOL 311 or L311, CHEM 211/213-212/214; Completion of Biology core recommended.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BIOL 499:** RS: Research in Biology. 6-9 credits.
Laboratory or field investigation under faculty guidance. Students will earn 6-9 credits toward the BA or BS degrees in Biology. Note: Must be enrolled in Biology Research Semester. Registration requires successful application and approval by Biology Program and faculty sponsor. Student receiving 9 credits for 499 will not be allowed to use BIOL 440, BIOL 495 and/or 497 neither toward the 32 BIOL hours needed for the BA degree, nor toward the 44 BIOL hours needed for the BS degree. This course will satisfy one upper division laboratory requirement for both the BA and BS degrees in Biology. Offered by Biology (p. 641). Limited to three attempts.

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** BIOL 213 or U213, BIOL 214 or 312 or equivalent introductory statistics course, BIOL 311 or L311, CHEM 211/213-212/214; Completion of Biology core recommended.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**BIOL 501:** Microbial Diversity: An Organismal Approach. 3 credits.
In-depth study of nonpathogenic microbial world, emphasizing detection, enumeration, and classification of microorganisms; their physiological and evolutionary relationships; and biotechnological applications. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** An undergraduate course in microbiology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 506:** Selected Topics in Microbiology. 1-4 credits.
Topic depends on instructor’s specialty. Notes: May be repeated only with permission of department chair. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 8 credits.
Recommended Prerequisite: BIOL 305 or L305 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 507: Selected Topics in Ecology. 0-4 credits.
Topic depends on instructor’s specialty. Notes: May be repeated only with permission of department chair. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: Course in Ecology and permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 508: Selected Topics in Animal Biology. 1-4 credits.
Topic depends on instructor’s specialty. Notes: May be repeated only with permission of department chair. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: BIOL 303 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 509: DNA Analysis of Biological Evidence. 3 credits.
Historical development of DNA profiling methods, current DNA typing techniques and the ongoing development of new forensic DNA typing methods. Emphasis will be placed on various analytical techniques used in the analysis of forensic evidence. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: BIOL 311 or permission of instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 510: Forensic DNA Analysis Laboratory. 1 credit.
Provides hands-on experience with the methodology of forensic DNA analysis. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: BIOL 311

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 515: Developmental Neurobiology. 3 credits.
Introduction to developmental neurobiology with overview of embryological development of the nervous system. Topics include neural induction, patterning/cell fate specification, and neural circuit assembly together with modern molecular methods for exploring neural development. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: Completion of 60 hours, including PSYC 372 or BIOL 213 or BIOL U213 and BIOL 310.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 516: Mammalian Neurobiology. 3 credits.
Functional anatomy of mammal brains emphasizing regional and systems neuroanatomy of humans. Correlates with material from clinical neurology, where possible. Laboratory component includes brain
dissections and clinical correlations. Offered by School of Systems Biology. May not be repeated for credit. Equivalent to PSYC 531.

**Recommended Prerequisite:** BIOL 515.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 522: Animal Behavior.** 3 credits.
Ecological aspects of animal behavior. Offered by School of Systems Biology. May not be repeated for credit.

**Recommended Prerequisite:** BIOL 324 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 532: Selected Topics in Plant Biology.** 1-4 credits.
Topic depends on instructor’s specialty. Notes: May be repeated only with permission of department chair. Offered by School of Systems Biology. May be repeated within the degree for a maximum 8 credits.

**Recommended Prerequisite:** Course in plant biology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**BIOL 537: Ornithology.** 4 credits.
Study of evolution, systematics, physiology, ecology, and behavior of birds, emphasizing field work. Offered by School of Systems Biology. May not be repeated for credit.

**Recommended Prerequisite:** Course in Ecology, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
BIOL 538: Mammalogy. 4 credits.
Study of evolution, systematics, physiology, ecology, and behavior of mammals, emphasizing field work. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 538.

Recommended Prerequisite: Course in ecology or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 539: Herpetology. 4 credits.
Study of evolution, systematics, physiology, ecology, and behavior of amphibians and reptiles, emphasizing field work. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: Course in ecology or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 543: Tropical Ecosystems. 4 credits.
Terrestrial, aquatic, and marine ecosystems in tropics, emphasizing plant communities, plant-animal interactions, and role of humans in the tropics. Notes: Field trip to tropics required as part of laboratory. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 543.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 550: Waterscape Ecology and Management. 3 credits.
Field and laboratory approaches to freshwater ecology with emphasis on study design, sampling methods, laboratory and data analysis, and report writing. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 550.

Recommended Prerequisite: General Chemistry and a course in ecology.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 553: Advanced Topics in Immunology. 3 credits.
Comprehensive study of immunologic mechanisms as they pertain to immunologic diseases and transplantation. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: BIOL 452 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 555: Lab in Waterscape Ecology. 1 credit.
Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 555.

Recommended Prerequisite: BIOL 550 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory
Grading:
This course is graded on the Graduate Regular scale. (p. 84)
**BIOL 556: Advanced Topics in Microbial Physiology and Metabolism.** 3 credits.

Comprehensive study of microorganisms including growth, nutrition, transport, autotrophic and heterotrophic metabolism, regulation, and differentiation. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 305 or L305 and 306 or L306 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 559: Fungi and Ecosystems.** 3 credits.

Considers impact of fungi on ecosystems in terms of their effects on biogeochemical cycling, primary and secondary production, and regulating community structure and populations of individual species through their activities as symbionts and parasites. Discusses role of fungi in ameliorating pollutants produced by anthropogenic activities. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to BIOL 459.

**Recommended Prerequisite:** BIOL 304 and/or a course in microbiology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 560: Infectious Diseases of Wildlife.** 3 credits.

During this course, diseases of wildlife will be examined with emphasis on causes and mechanisms, pathobiology, ecology and epidemiology and population significance. We will explore methods of diagnosis, control, prevention and outbreak investigation as they apply to management and conservation of wildlife populations. Also, diseases crossing species barriers will be examined. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 560.

**Recommended Prerequisite:** Courses on evolution, ecology, zoology and conservation biology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 561: Comparative Animal Physiology.** 3 credits.

Detailed study of selected physiological systems of invertebrates and vertebrates, emphasizing current research. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 326 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 562: Personalized Medicine.** 3 credits.

Covers basic principles of molecular medicine, including the definition and the need for individualized diagnostics and therapeutics. Students will study the application of proteomics, genomics and bioinformatics as they relate to individualized therapy, and review the major advances in these fields which have relevance to molecular medicine of the future. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Advanced undergraduate coursework in Genetics and Molecular Cell Biology.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduation Deadline Extended, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 563: Virology.** 3 credits.

Fundamental concepts of nature of viruses, virus classification, cultivation, and biochemistry. Emphasizes bacteriophage and animal viruses. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 482 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 564: Techniques in Virology.** 2 credits.
Basic techniques of animal virus propagation, isolation, and quantitation. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 563 (concurrent enrollment is also permitted) or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 566: Cancer Genomics.** 3 credits.
Review of modern concepts in cancer biology including taxonomy of human tumors, common cancer syndromes, and genome instability. Genetic and molecular studies of tumor cell proliferation, migration, invasion, and death. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** A course in genetics or biochemistry.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 572: Human Genetics.** 3 credits.
Inheritance of humans emphasizing current problems, including genetic control of metabolic diseases, effects of radiation and chemical agents in environment, and directed genetic change. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 311 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 573: Developmental Genetics.** 3 credits.
Genetic approaches to problem of eukaryotic development, emphasizing current research on regulation of gene enzyme systems. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 311 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 574: Population Genetics.** 3 credits.
Genetic structure and dynamics of populations, both real and ideal. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 308 and 311, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 575:** Selected Topics in Genetics. 1-4 credits.
Different topics in different years, including molecular, developmental, physiological, and classical genetics, emphasizing current problems and research. Notes: May be repeated once with permission of department chair. Offered by School of Systems Biology (p. 786). May be repeated within the term for a maximum 8 credits.

**Recommended Prerequisite:** BIOL 311, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 577:** Biogeochemistry: A Global Perspective. 3 credits.
Structure and function of ecosystems, their interactions as components of landscapes, and contributions to global environment. Emphasizes biogeochemical cycles of natural, disturbed, and managed ecosystems, and their integration at landscape and global level as related to current ecological problems such as transfer of nonpoint source pollutants, atmospheric deposition, stratospheric ozone depletion, and global change. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 307, CHEM 211, 212 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 578:** Mutation, DNA Repair, and Environmental Contamination. 3 credits.
Overview of relationship between environmental contamination and genetic damage. Covers types of contamination that result in mutations, and molecular mechanisms of DNA damage and repair. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 307 and 311.

**Recommended Corequisite:** BIOL 471, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 580:** Computer Applications for the Life Sciences. 3 credits.
Studies computer use in biological sciences. Combines lectures, supervised exercises on mainframe and microcomputers. Students present seminars on advanced application and complete project using computers to fulfill a major assignment associated with another course or employment. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** 12 hours of biology and one year of college mathematics, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**BIOL 581: Estuarine and Coastal Ecology.** 3 credits.
Emphasizes marine biology of estuarine and coastal habitats of Chesapeake Bay region, and factors affecting distribution and abundance of organisms. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 581.

**Recommended Prerequisite:** Course in ecology and permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 585: Eukaryotic Cell Biology Laboratory.** 1-2 credits.
Selected topics of laboratory procedures used in the study of eukaryotic cells. Notes: May be repeated one time with permission of program director. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to BIOL 485.

**Recommended Prerequisite:** BIOL 484 or BIOL 682 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 589: Teaching Practicum.** 1 credit.
Experience teaching biology in laboratory or in field under supervision of faculty member. Notes: Undergraduate assists instructor. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor, chair, and course coordinator.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
600 Level Courses

BIOL 607: Fundamentals of Ecology. 3 credits.
Overview of concepts in physiological, population, community, and ecosystem ecology. Restricted to graduate students with little or no background in ecology. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 607.

Recommended Prerequisite: Permission of department.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 608: Topics in Biology. 1-4 credits.
In-service course to strengthen and update teacher's knowledge of biology. Topics include organismal biology, cell biology, ecology, microbiology, or genetics. Notes: Not available for credit toward MS in biology, or PhD in environmental science and public policy. May be repeated for credit with permission of department chair. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Employment or anticipated employment as a science teacher.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 610: Bioremediation: Theory and Applications. 3 credits.
Provides basis for understanding proper application of bioremedial technologies to treatment for hazardous wastes. Includes evaluation of data to determine successful treatment. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 610.

Recommended Prerequisite: Course in microbiology and either organic chemistry or microbial physiology or equivalent or permission of instructor.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 611: Techniques in Environmental Microbiology. 2 credits.
Laboratory exercises illustrate techniques to demonstrate microbial degradation, detection of microbes, isolation, and evaluation of physiological and genetic characteristics. Notes: Open first to those enrolled in BIOL 610. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: A laboratory course in microbiology or permission of instructor.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 643: Microbial Ecology. 4 credits.
Study of relationships between microorganisms and their natural environment, and methodology for observing their natural environment and biochemical activities in that environment. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 643.

Recommended Prerequisite: Course in microbiology or permission of instructor.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 644: Wetland Ecology and Management. 4 credits.
Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: CHEM 211, 212, BIOL 307, PHYS 106 and 107 or permission of instructor.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 645:** *Freshwater Ecology.* 3 credits.
Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** EVPP 550 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 648:** *Population Ecology.* 3 credits.
Survey of ecological models and theory. Topics include population growth and regulation; competition; predator-prey, herbivore-plant, and parasite-host interactions; mutualism; and metapopulation ecology. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 648.

**Recommended Prerequisite:** Course in ecology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 649:** *Biological Resource Management.* 3 credits.
Applies modern ecological theories and methods to biological resource management in developing and developed countries. Explores problems in achieving optimum productivity of specific resources and application of systems analysis. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Course in ecology, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 650:** *Environment Analysis and Modeling.* 4 credits.
Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 650.

**Recommended Prerequisite:** 8 hours of ecology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 665:** *Environmental Hazards to Human Health.* 3 credits.
Health effects of chemical contaminants of air, water, and food resulting from industrialized society. Includes identifying, evaluating, and controlling hazards. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Courses in animal physiology and organic chemistry, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 666:** *Human Genetics Concepts for Health Care.* 3 credits.
Principles of genetically determined diseases with emphasis on clinical aspects of these diseases, genetic counseling, and laboratory methods used in human genetics. Extended studies students preparing to enter medical or dental school are welcome. Notes: Course in cell or molecular biology. Not available to students who have taken BIOL 572. Offered by School of Systems Biology (p. 786). May not be repeated for credit.
**Recommended Prerequisite:** BS degree or enrollment in accelerated MS program. Course in cell or molecular biology.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 668:** Advanced Techniques in Molecular Biology. 4 credits.
Experimental studies using current methods for purification and characterization of biologically important compounds. Provides training for research in molecular biology. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 568 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 669:** Pathogenic Microbiology. 3 credits.
Molecular mechanisms of bacterial pathogenicity and immune response in infectious diseases. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Courses in microbiology and biochemistry.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 675:** Aerosol Biology. 4 credits.
Provides students with familiarity with the state of the art aerosol equipment and techniques used in laboratory-based research pertaining to biological warfare or terrorism threats. Emphasis will be placed on biosafety procedures, techniques, and equipment used in conducting experiments with infectious organisms in a contained environment.

Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Undergraduate courses in physics, math, and microbiology, and permission of the Director of the Center for Biodefense.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 678:** Cell-Based Assays. 2 credits.
Focus on 1) basics of eukaryotic cell culture; 2) various cell based assay techniques; 3) Real-Time PCR based functional analysis of the signaling pathways. Students will maintain their cell cultures for the duration of the experiments, perform at least one functional assay and analyze the resultant data. Students are expected to learn the properties and limitations of each cell based assay and should be able to explain their results regardless of the outcome. Each student will be responsible for submitting a written report summarizing the design of their experiments and its results. Each report will include the following sections: Introduction, Methods, Results and Discussion, and a special Troubleshooting section. Notes: A lab fee of $300 will be charged per student for lab supplies. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Permission of Instructor. 400-level coursework in cell or molecular biology.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment limited to students in the SC-MS-BCB, SC-MS-BIOL or SC-NDG-UNDE programs.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 680:** Experimental Design and Analysis for the Life Sciences. 4 credits.
Advanced course in applying probability and statistics to research in life sciences. Examples drawn from environmental, medical, physiological, genetic, and chemical biology. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Course in biostatistics or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 682:** Advanced Eukaryotic Cell Biology. 3 credits.
Structure and function of biomembranes, cytoskeleton, and transport systems. Also discusses protein trafficking, cell cycle, and cell adhesion molecules. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 483, CHEM 313, CHEM 314, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Biology or Biosciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 685:** Emerging Infectious Diseases. 3 credits.
Students will gain an understanding of the pathogenesis of emerging and/or re-emerging infectious diseases in terms of immune response and systemic alterations. Factors contributing to emergence and virulence for each pathogen will be emphasized. Epidemiology, disease progression, treatment strategies and/or control measures of identified emerging infectious diseases will be discussed. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 213 or U213 and 311 or L311, 482 or equivalent; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Biology or Biosciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 690:** Introduction to Graduate Studies in Biology. 1-2 credits.
Required of all new MS students in biology. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 691:** Current Topics in Biology. 1-4 credits.
Study of current topics in biology as determined by instructor. Topics vary and center on emerging areas of investigation in the biological sciences. Offered by School of Systems Biology (p. 786). May be repeated within the term for a maximum 8 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 692:** Seminar in Biology. 1 credit.
Topics vary. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 2 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOL 693:** Directed Studies in Biology. 1-8 credits.
Study of topic not otherwise available in graduate program. May involve any combination of reading assignments, tutorials, lectures, papers, presentations, or laboratory or field study, determined in consultation with instructor. Notes: May not be used to fulfill explicit undergraduate prerequisites for graduate work. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 8 credits.

**Recommended Prerequisite:** Permission of instructor and graduate committee.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research

Grading:
This course is graded on the Graduate Special scale. (p. 84)

BIOL 695: Seminar in Molecular, Microbial, and Cellular Biology. 1 credit. Review and discussion of recent literature in specialized area. Includes student presentations. Offered by School of Systems Biology (p. 786). May be repeated within the term for a maximum 2 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

BIOL 715: Microbial Physiology. 3 credits.
Comprehensive study of functioning of microbial cells, with emphasis on pathogens. Stresses growth, transport, cell-to-cell signaling, biofilm formation, antibiotic resistance, and secondary metabolites. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: An undergraduate lecture/lab course in microbiology, and a course in biochemistry.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BIOL 718: Techniques in Microbial Pathogenesis. 3 credits.
Laboratory-based class in which students perform current techniques in microbial pathogenesis. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

Recommended Prerequisite: Admission to the PhD biosciences program, the MS biology program, or permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research

Grading:
This course is graded on the Graduate Special scale. (p. 84)

BIOL 793: Research in Biology. 1-3 credits.
Library, laboratory, or field investigation under supervisor’s guidance. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: 8 hours of graduate hours in BIOL and permission of instructor and chair.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research

Grading:
This course is graded on the Graduate Special scale. (p. 84)

BIOL 798: Master's Research Project. 1-3 credits.
Experimental or theoretical research project chosen and completed under guidance of graduate faculty member. Comprehensive report acceptable to student’s advisory committee is required. Notes: Students who take BIOL 793 may not receive more than 6 credits total for both BIOL 793
and 798. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor and chair.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**BIOL 799:** Thesis. 1-6 credits.
Thesis research under direction of supervisor. Notes: Students who take BIOL 793 may not receive more than 6 credits total for both BIOL 793 and 799. Offered by School of Systems Biology (p. 786). May be repeated within the degree.

**Recommended Prerequisite:** 8 graduate hours in BIOL and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Biomedical Sciences (BMED)**

**500 Level Courses**

**BMED 550:** Special Topics in Biomedicine. 2 credits.
This course presents various topics in biomedicine in a lecture/seminar format. Students build on the ABS Certificate curriculum to enhance their understanding of biomedical issues and better prepare for careers in the health professions. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Successful completion of first semester of the ABS Certificate curriculum (Biochemistry, Biostatistics, Histology).

**Recommended Corequisite:** Spring ABS Certificate courses (Human Anatomy, Human Physiology).

**Registration Restrictions:**
Enrollment limited to students in the SC-CERG-ABS program.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 601:** Biochemistry and Molecular Biology. 4 credits.
Principles of biochemistry and cell signaling and current concepts regarding physiological processes at the cellular and molecular levels. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Recommended Corequisite:** Spring ABS Certificate courses (Human Anatomy, Human Physiology).

**Registration Restrictions:**
Enrollment limited to students in a Non-Degree Undergraduate degree. Graduates, Non-Degree or Undergraduate level students may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 603:** Cell Biology and Microscopic Anatomy. 3 credits.
Examines basic histological techniques, ultrastructure of the cell, basic tissue types and histology of specific organ systems. Structure-functional and clinical correlations are described. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Successful completion of first semester of the ABS Certificate curriculum (Biochemistry, Biostatistics, Histology).

**Recommended Corequisite:** Spring ABS Certificate courses (Human Anatomy, Human Physiology).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Registration Restrictions:**
Enrollment limited to students with a major in Advanced Biomedical Sciences.

**Recommended Corequisite:** Spring ABS Certificate courses (Human Anatomy, Human Physiology).

**Registration Restrictions:**
Enrollment limited to Graduate, Non-Degree or Undergraduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 604:** Fundamentals of Human Physiology. 5 credits.
Essential concepts of physiology and mechanisms of body function are presented at various levels of organization, ranging from cellular and molecular to tissue and organ system levels. Emphasis is placed
on understanding the integrated regulation of various body processes among the major systems. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 605:** *Introduction to Human Anatomy.* 3 credits.
Principles of anatomy as well as the pertinent anatomy associated with the thorax, abdomen, and pelvic cavities. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 610:** *Principles of Systems Biology.* 2 credits.
Students will build on their knowledge of cellular and molecular biology, genetics, and physiology to understand how these components combine to give rise to complex systems function found in biology. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Sciences master's degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 611:** *Molecular Genetics.* 2 credits.
Students will build on their knowledge of molecular biology and genetics to understand how these components' functions are altered during the inception and course of human disease. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Sciences master's degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 612:** *Principles of Gross Anatomy.* 1 credit.
Principles of anatomy as well as the pertinent anatomy associated with the thorax, abdomen, and pelvic cavities. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Science's master's program

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 613:** *Pathophysiology.* 3 credits.
Students build on knowledge of physiologic principles and apply the information to pathologic conditions. A higher understanding of the molecular and genetic basis of pathology will be developed as the mechanisms of disease are studied. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Sciences master's program

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 614: Introduction to Neuroscience.** 3 credits.
Achieve specific knowledge of the developmental and evolutionary aspects of the nervous system, to introduce systems neurobiology through study of the visual system and motor system pathways. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Science's master's program

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 651: Physician and Society.** 1 credit.
Seminar series explores the cultural, social, economic and ethical factors that affect the practice of medicine in the 21st century. Offered by College of Science (p. 613). May be repeated within the degree for a maximum 2 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BMED 652: Biomedical Career Pathways.** 1 credit.
Series of workshops, presentations and field trips. Students will learn study and interview skills to become better prepared to complete AMCAS and secondary applications to medical schools. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences or Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 700 Level Courses**

**BIOS 701: Systems Biology.** 3 credits.
Introduces biochemical systems to investigate complex, multicomponent, dynamic functions of cellular systems. Readings include articles from current literature in molecular biosciences. Application of molecular techniques within biosciences is now universal, and the underlying question remains "What is the structure of a cell, and how does it function?" Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to BINF 701.

**Recommended Prerequisite:** General Biochemistry.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 702: Research Methods.** 3 credits.
Trains students in research methodologies, techniques, and data analysis in life sciences. Divided into three modules that introduce separate but equally significant components of any research project: parameters required to outline and synthesize a problem, techniques of measurement and analysis used by life scientists, and approaches for data analysis and interpretations. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD program in Biosciences

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 703: Laboratory Rotation.** 3 credits.
Intensive introduction to research laboratory in biosciences. Students read background material pertinent to problem under study, learn and practice research methods of laboratory, and formulate short final project that may be proposal or actual project, demonstrating some mastery of techniques and approaches employed. Notes: Should be repeated three times (except by permission of concentration director). Offered by School of Systems Biology (p. 786). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Admission to the PhD program in Biosciences.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**BIOS 704: Topics in Biosciences.** 1 credit.
Combines invited seminars from internal and external faculty with graduate student seminars. Seminar presentation required for advancement to candidacy, generally given in last semester before candidacy. Includes discussion section led by course coordinator. Notes: Required of all students during each semester prior to advancement to candidacy. Should be repeated three times (except by permission of concentration director). Offered by School of Systems Biology (p. 786). May be repeated within the term for a maximum 3 credits.

**Recommended Prerequisite:** Admission to the PhD program in Biosciences.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 710: Current Topics in Bioscience.** 1-3 credits.
Studies current topic in biosciences. Notes: Topics vary. May be repeated for credit with permission of concentration director. Offered by School of Systems Biology (p. 786). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Admission to the PhD program in Biosciences or to the MS program in biology.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 715: Molecular Ecology.** 3 credits.
Introduces students to basic concepts of molecular biology, genetics, molecular evolution, bioinformatics, NextGen Sequencing and Technology. Students should have prior background in genetics and evolution. Offered by School of Systems Biology (p. 786). May not be repeated for credit. Equivalent to EVPP 515.

**Recommended Prerequisite:** Undergraduate course in Genetics and Chemistry or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 716: Methods in Evolutionary Biology.** 4 credits.
Intended for students who plan to do research in Molecular Ecology, Molecular Evolution, Conservation Genetics, Genomics or Biocomplexity. The lecture reviews basic concepts while the lab provides students the opportunity to experience the detailed protocols necessary for research in molecular biology. The course integrates theory, protocols, analysis and bioinformatics. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOS 715 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 719: Extremophiles.** 5 credits.
Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 740: Laboratory Methods in Functional Genomics and Biotechnology.** 3 credits.
Current laboratory techniques in molecular biology and genomics, including nucleic acid isolation, gene cloning and sequencing, gel blot analysis, PCR, in vitro mutagenesis, and theory and practice of DNA
microarray analysis of gene expression. Topics may vary from year to year depending on advances in field. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Graduate standing and undergraduate courses in genetics and molecular biology.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 741: Genomics.** 3 credits.
Genetic structure and function at whole genome level. Includes some sequence analysis, comparative genomics, classical genetics, and developmental genetics, as well as analysis of synteny groups, isochores, gene families, genetic complexity, C value paradox, directed discovery of gene functions, and animal models of human disease. Readings from recent texts and primary research literature. Students expected to give one or two oral presentations of primary research papers, as well as complete midterm and final exams. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** At least one undergraduate course in genetics and molecular biology, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 742: Biotechnology.** 3 credits.
Theory and applications of biotechnology. Includes promoter design, gene fusions, protein targeting, techniques of protein purification, construction of transgenic organisms, cloning of animals and plants, ethical and legal issues. This is a relatively new area of study that is rapidly changing; course strives to keep students abreast of current literature. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Undergraduate coursework in genetics and molecular biology.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 743: Genomics, Proteomics, and Bioinformatics.** 3 credits.
Fundamental methods for analyzing genomic and proteomic data, including nucleic acid and protein sequences, pair-wise and multiple alignment, database search methods, clustering and presentation of data, prediction modeling, and survey of available software and freeware tools. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Admission to PhD program in biosciences or to MS program in biology.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 744: Molecular Genetics.** 3 credits.
Develops understanding of principles of modern molecular genetics and methods of investigation of genomes of pro- and eukaryotes, including types of genetic manipulations conducted in research laboratories today. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Undergraduate coursework including BIOL 311; CHEM 313, 314, 315, and 318; equivalents; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 760: Seminar in Molecular Systematics.** 1-3 credits.
Presentations and discussion by students and faculty of research papers and projects. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Undergraduate coursework including BIOS 741; CHEM 313, 314, 315, and 318; equivalents; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 761: Dispersal Patterns of Biological Agents.** 3 credits.
Introduces military and terrorist methods of dispersal patterns. Covers physics of aerosols, engineering and mechanics of building ventilation systems, and mechanical dissemination including handheld, automatic, vehicle, and truck-mounted systems. Also covers viability of specific agents involved. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** Admission to PhD Biosciences program or MS/Biology program, and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 762: Phylogenetic Analysis.** 4 credits.
A consideration of molecular systematics techniques in biology, especially cladistics and phenetics methods. Species concepts, biological nomenclature, and classifications will also be discussed. Laboratory will emphasize phylogenetic methods using online sources of comparative data. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 765: Molecular Systematics.** 4 credits.
Comparative evolutionary techniques applied to molecular data. Use of molecular techniques, molecular databases, and analytical techniques will be covered. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 767: Molecular Evolution.** 3 credits.
A review of the diversity and organization of genomes and evolutionary processes that operate at the molecular level. Emphasis will be placed on processes of molecular evolution and techniques used to analyze these processes. Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BIOS 782: Interdisciplinary Issues in Bioethics: Law and Policy.** 3 credits.
Offered by School of Systems Biology (p. 786). May not be repeated for credit.

**Recommended Prerequisite:** BIOS 780 and 781.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**800 Level Courses**

**BIOS 898: Directed Studies in Biosciences.** 1-12 credits.
Studies of specialized topics in biosciences. Specific arrangements for designing scope and area of study to be determined in consultation with instructor. May involve literature searches and review, workshops, or tutorials. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 24 credits.

**Recommended Prerequisite:** Permission of Research Advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**BIOS 899: Directed Research in Biosciences.** 1-12 credits.
Research on a pertinent topic in biosciences. Scope and subject of research to be determined by instructor. Offered by School of Systems Biology (p. 786). May be repeated within the degree for a maximum 24 credits.

**Recommended Prerequisite:** Permission of Research Advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**900 Level Courses**

**BIOS 998: Doctoral Dissertation Proposal.** 1-6 credits.
Research and writing of research proposal for doctoral dissertation. Offered by School of Systems Biology (p. 786). May be repeated within the degree.

**Recommended Prerequisite:** Permission of research advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**BIOS 999: Doctoral Dissertation Research.** 1-12 credits.
Research in concentration pertinent to students’ program of study. Notes: Maximum of 24 credits can be applied toward degree. Offered by School of Systems Biology (p. 786). May be repeated within the degree.

**Recommended Prerequisite:** Permission of research advisor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.
Schedule Type: Dissertation

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

Business (BUS)

100 Level Courses

BUS 100: Business and Society. 3 credits.
Provides students with a foundation for understanding the role of business in society by exploring the nature and history of business enterprise, the social context of business, and the interaction of individuals with business by selecting current events in business and analyzing the content as well as the impact of the reported activities. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Recommended Prerequisite: Degree status.

Registration Restrictions: Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

BUS 103: Develop Professional Skills I: Foundational Elements. 3 credits.
Students will investigate and develop their professional skill set. Topics include introduction to the business school and business world, what it means to be professional, how to consume the business press, and how to research business issues. Develop professional writing and presentation skills, explore career options and the job search process, and develop personal educational and professional development plans. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions: Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

BUS 200: Global Environment of Business. 3 credits.
As world becomes increasingly connected, business serves as core institution that mediates relations between individuals across national boundaries. Provides overview of global environment of business through study of political economy, international institutions and international trade theories, and global conflicts and cooperation around issues (natural resources, labor, human rights, distribution of income, and the environment). Addresses implications of topics for business. Designated a Green Leaf Course. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Mason Core: Global Understanding, Encore: Sustainability (p. 142)

Specialized Designation: Green Leaf Related Course

Registration Restrictions: Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

BUS 210: Business Analytics I. 3 credits.
Course introduces business analytics and why businesses use analytics to create and sustain competitive advantage. Topics include data types, summarization and graphical display of data, application of basic probability rules, and probability distributions. Introduces fundamentals of spreadsheets and their use in business applications. Learn how to apply appropriate analytical tools to gain useful insights from real-life datasets. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions: Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

BUS 292: Internship for Academic Credit. 3 credits.
This is general elective course is designed to give students the opportunity to gain practical and professional experience in conjunction with their academic development. The internship must be completed within the same academic semester to receive course credit. Offered by School of Business (p. 888). Limited to two attempts.

Recommended Prerequisite: 24 credit hours

Registration Restrictions: Required Prerequisite: BUS 103®

B® Requires minimum grade of B-.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Internship

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

BUS 303: Develop Professional Skills II: Advanced Elements. 3 credits.
In this course, students will continue to develop their professional skill set. Topics covered include understanding the modern work environment, business ethics and professional responsibilities, and professional judgment. Students will also continue to hone their professional writing and presentation skills, prepare for the job search process, and develop personal job search and professional development plans. Notes: School of Business students will not be permitted to make more than three attempts to achieve a C or higher in BUS 303. The third attempt requires School of Business academic advisor approval. Those who do not successfully complete this course within three attempts will be
terminated from their major and will not be eligible to receive a degree from the School of Business. For more information about this, see the "Termination from the Major" section under Academic Policies. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (BUS 103\(^C\) or U103).
\(^C\) Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BUS 310: Business Analytics II.** 3 credits.
Introduces modeling relationships contained in data and linear models to make predictions in business. Topics include estimation, hypotheses testing, statistical inference, analysis of variance and linear regression techniques. Fundamentals of linear programming to solve optimization problems in business. Apply analytical tools to gain insights from real-life datasets. Hands-on experience and application of the methods to data sets using spreadsheet software. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** BUS 210\(^C\), U210 or 210T.
\(^C\) Requires minimum grade of C.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BUS 315: Introduction to the Government Contracting Industry.** 3 credits.
The course provides students with a foundational knowledge of the government contracting (GovCon) industry. By explaining key concepts of the field, students will be able to understand how to leverage their knowledge immediately, upon hire in a GovCon-related opportunity by understanding the link between GovCon concepts and non-GovCon business concepts. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** MGMT 303\(^C\) and BULE 303\(^C\).
\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**
**BUS 491: Special Topics in Business.** 1-6 credits.
Advanced study of special topics in business Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BUS 492: Internship in Business.** 3 credits.
Opportunity to gain practical, professional experience in conjunction with academic development. An internship is an important part of academic and career preparation. May be used as elective credit, but may not be repeated. Notes: No more than 6 credits of School of Business internship coursework (BUS 492 or ACCT 492) can be applied towards a student’s 120 (BU) degree applicable credits. Students must receive departmental approval in order to register for this course; please contact the School of Business Office of Career Services for internal eligibility requirements. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to ACCT 492, FNAN 492, MGMT 492, MIS 492, MKTG 492, OM 492, OSCM 492.

**Recommended Prerequisite:** 75 credit hours

**Registration Restrictions:**
**Required Prerequisites:** ((MIS 301\(^B\) or 303\(^B\)) and (OM 301\(^B\) or 303\(^B\))) or (ACCT 301\(^B\) or 330\(^B\)) or (MKTG 301\(^C\) or 303\(^C\)).
\(^B\) Requires minimum grade of B-.
\(^C\) Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**BUS 498: Capstone Course: Advanced Business Models.** 3 credits.
Advanced integrated exploration of business models and industry dynamics that uses case analyses to assess competition, organizational strategy, and firm performance. Students examine strategic change in organizations from multiple perspectives, integrating knowledge from core course work into several papers and major presentation. Students receive coaching from area business leaders as they complete their presentations. Students must earn a C or higher in order to meet the Business Core and Foundations degree requirements. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Mason Core:** Capstone (p. 142)

**Registration Restrictions:**
**Required Prerequisites:** (ACCT 301\(^C\); 303\(^C\); 330\(^C\); L301, L303 or L330) and (BULE 302\(^C\); 303\(^C\); L302 or L303) and (BUS 303\(^C\); L303; SOM 301\(^C\) or
L301) and (FNAN 301C, 303C, L301 or L303) and (MGMT 301C, 303C, L301 or L303) and (MIS 301C, 303C, L301 or L303) and (OM 301C, 303C, L301, DESC 301C, L301 or OM L303) and (BUS 310C, L310, OM 210C, DESC 210C, U210 or OM U210). Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 700 Level Courses

**BUS 701: Professional Practicum.** 3 credits.
This course is designed to teach the practice of teaching, research, and philosophy of science. Classroom teaching, business research and other professional responsibilities common to business academics will be covered. This course will also introduce students to tools for the philosophical analysis of science. Students will learn about issues in observation, experiment, and reasoning, questions about the aims of science, scientific change, and the relations between science and values. This course should be taken in the first year of the program. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the School of Business college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BUS 702: Writing for Business PhD Students.** 3 credits.
This course emphasizes a “learning by doing” approach to writing. It is run as a writing practicum with a focus on the procedural aspects of writing. Students will engage the writing process intensively and deliberately, both in and outside class. Students will read and evaluate different writings in business, providing evaluation and critique of them in the process of honing and refining their own writing skills. Students will develop strategies for writing regularly, for managing anxiety about writing, and developing critical, but constructive strategies of self-evaluation. Students will gain practice in different types of writing including research reports, scholarly journal articles, and research proposals. Students will read examples of the range of writings by business scholars, identifying persuasive argument, how to advance a claim and the productive use of evidence. This course should be taken in the second year of the program. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the School of Business college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**BUS 703: Research Project.** 3 credits.
Student must complete a two-semester long research project on an approved topic under the guidance of a faculty advisor, and write a research paper that will be presented as a departmental seminar and be submitted to an academic journal. This course must be completed no later than the end of the fourth semester in the PhD program. 6 credits combined from taking this course twice will apply to the PhD degree. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the School of Business college.

**Schedule Type:** Research

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### 800 Level Courses

**BUS 801: Field Research in Business.** 3 credits.
Student must complete a one-semester long independent study with their faculty advisor where they take the lead on a field research project. This course is more advanced than BUS 798: Research Project as the design of this course is such that the student is the project lead. This course will be ideally completed in the third year. The rationale behind this course is that the student takes the lead on gaining access to the problem to be solved. This could involve gaining access to collect primary data from a business or organization, acquiring historical data, or developing an analytical model. The goal is for the student to understand the research problem as it situated in practice. The deliverable for this course is not a finished paper. Deliverables could include, but are not limited to: progress in securing data access, development of analytical models, demonstration of data organization, culling valuable business contacts, and making applied presentations to business and academic. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the School of Business college.

**Schedule Type:** Research

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### 900 Level Courses

**BUS 998: Doctoral Dissertation Proposal.** 1-6 credits.
Work on research proposal that forms basis for doctoral dissertation. Note: Students must complete a minimum of 3 credits of BUS 998. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)
BUS 999: Doctoral Dissertation Research. 1-18 credits. Research on approved dissertation topic under direction of dissertation committee. Notes: Students must complete a minimum of 3 credits of BUS 999. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 18 credits.

Registration Restrictions: Enrollment limited to Graduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Dissertation

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

Business Management (BMGT)

600 Level Courses

BMGT 603: Economics for Successful Firm Management. 3 credits. Provides fundamental understanding of applying microeconomics concepts to managerial decision making. Explores principles of microeconomic theory, including market supply and demand, production and cost functions, industry structure, and product and resource pricing. Due to the presentation and application of course material, this course can only be taken by students enrolled in the Master of Science in Management Program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

BMGT 612: Performance Evaluation Through Cost Management. 3 credits. Examines impact of cost and cost allocation on performance and evaluation. Due to the presentation and application of course material, this course can only be taken by students enrolled in the Master of Science in Management Program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

BMGT 613: Financial Reporting and Firm Analysis. 3 credits. Foundation course focusing on economics and analysis of business transactions and financial reporting issues. Topics include introduction to accounting framework in financial reporting; analysis of financial statements, economic events and impact on financial reports, and impact of accounting methods on financial reports. Due to presentation and application of course material, course only open to students enrolled in the Master of Science in Management Program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

BMGT 623: Marketing and Firm Performance. 3 credits. Develops market-based knowledge and skills for effective marketing decision making, strategy design, implementation, and evaluation in variety of institutional and competitive situations. Addresses importance of companies being market-driven and customer-focused. Emphasis on case studies, team work, and projects. Due to the presentation and application of course material, this course is only open to students enrolled in the Master of Science in Management Program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions: Enrollment limited to students with a class of Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

BMGT 633: Statistical Analysis for Management. 3 credits. Use statistical methods as analytical tools for understanding and solving business problems and supporting business decision making. Includes descriptive statistics, sampling, inferencing and regression. Extensive use of applied business scenarios to illustrate concepts and computer software for data analysis. Due to presentation and application of course material, this course can only be taken by students in the Master of Science in Management Program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BMGT 638: Managing Business Operations in a Global Environment. 3 credits.
Focuses on design, planning, and control activities to produce and deliver goods/services in organizations. Introduces operations management decisions; operations strategy, process analysis and design, capacity planning, supply chain management, total quality management, and project management. Uses quantitative modeling, case studies, and computer software to analyze/solve problems. Due to the presentation and application of course material, course only open to Master of Science in Management students. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BMGT 643: Financial Management in a Global Environment. 3 credits.
Introduces theory and practice of finance within corporations. Topics include intertemporal choice, valuation, capital budgeting and structure, working capital management, and risk and return analysis. Due to the presentation and application of course material, this course can only be taken by students enrolled in the Master of Science in Management Program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BMGT 653: Fundamentals of Behavior in Organizations. 3 credits.
Emphasizes development of conceptual tools for understanding and analyzing individual and group behavior in organizations and organizational processes. Considerable focus on developing relevant skills for working in groups and teams. Lectures, discussions, case analyses, and class exercises. Due to the presentation and application of course material, this course can only be taken by students enrolled in the Master of Science in Management program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BMGT 662: Management of Information Technology. 3 credits.
Strategic, economic and managerial aspects of managing organization’s IT assets are covered. Business value of IT is understood and assessed in context of its impact on organization’s structure and strategy. Includes discussion on major issues pertaining management of IT infrastructure. Due to presentation and application of course material, course is only open to students enrolled in the Master of Science in Management Program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

BMGT 678: Business Strategy and Firm Leadership. 3 credits.
Capstone focusing on strategy development at business unit and corporate level. Cases, readings, and project format familiarize students with strategic management function and help develop analytical, organizational, and managerial skills to analyze complex business situations. Opportunities to integrate knowledge gained in prior course work. Due to presentation and application of course material, course only open to students enrolled in the Master of Science in Management program. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to BMGT program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**BMGT 692:** *Professional Development Experience.* 1-3 credits.
Professional experience in conjunction with academic development. Hands-on experience is an important part of academic and career preparation and may be completed by an internship, consulting project, independent study or additional global experience. Must involve an average of 15 hours per week and be approved by program director. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to TECM 611.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Management.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Enrollment is limited to students in a Master of Science degree.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**BMGT 695:** *Global Business Perspectives.* 3 credits.
Includes a weeklong international student study tour lead by a full-time School of Business professor. Students interact with business and government leaders, participate in seminars, and visit sites of local or multinational companies. Focus on developing an increased understanding of global markets, competition, business strategy, and business opportunities in addition to the social and cultural dimensions of global business. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Management.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Enrollment limited to students in a Master of Science degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

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**Business Management of Secure Information Systems (MSIS)**

**600 Level Courses**

**MSIS 611:** *Leadership and Change Management.* 2 credits.
Distinguishes between leadership and management, and focuses on the critical roles and functions of leadership, including communication ability, use of power and influence, providing direction, aligning an organization's systems, motivating a workforce, and creating a culture for effectiveness. It also focuses on strategies for developing oneself as an effective leader. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to TECM 611.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Management of Secure Info Syst or Technology Management.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSIS 614:** *Financial and Cost Accounting.* 2 credits.
Provides managers with an overview of the purpose and importance of accounting within the organization and the financial valuation of information technology companies, projects, and product line. Students focus on the economics and analysis of business transactions and their related financial reporting issues from internal and external stakeholder perspectives. Students improve their skills in analyzing financial issues and presenting results in a case analysis framework. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to TECM 614.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Management of Secure Info Syst or Technology Management.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSIS 620:** *Economics of Technology Management.* 2 credits.
Enables students to build and evaluate economic and business models that can be used to analyze real managerial questions that affect all types of institutions, especially firms in the information technology industry. Students develop a better understanding of the operation of markets in general and the use of various quantitative and qualitative...
methods when making decisions within the firm. The use of economic analysis allows students to identify and evaluate decision alternatives, the competitive environments of firms, and the factors that influence firm performance, especially in the information technology industry. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to TECM 620.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Management of Secure Info Syst or Technology Management.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSIS 635: Decision Models and Methods.** 2 credits.
Explores current metrics and metric development for quality, intangible assets, and project management as required within information technology companies. Applies statistical tools of best use with these metrics. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to TECM 635.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSIS 643: Managerial Finance.** 2 credits.
Surveys the theory and practice of corporate financial management with specific application to the technology sector. Students develop an understanding of key elements required in the valuation of project alternatives; including their strategic importance. Students evaluate and use financial management models and gain an understanding of how finance can be employed as a source of potential competitive advantage. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to TECM 643.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Management of Secure Info Syst or Technology Management.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSIS 641: Innovation, Commercialization and Entrepreneurship.** 2 credits.
Cybersecurity is a field with both tremendous opportunity and need for innovations and commercialization of new technologies. In addition, there is tremendous opportunity and success by cybersecurity startup firms in US and internationally. Course investigates technology and cybersecurity innovation and commercialization and keys to success for cybersecurity entrepreneurship. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSIS 696: Directed Studies in Management of Secure Information Systems.** 1-3 credits.
Approval by faculty member and program director required prior to registration. Studies specialized topics in business not otherwise available in the curriculum. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 4 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Management of Secure Info Syst.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSIS 697: Special Topics in Management of Secure Information Systems.** 1-3 credits.
Sections established as necessary to focus on various topical issues that emerge in practice of management of secure information systems. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to students with a major in Management of Secure Info Syst.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

### 700 Level Courses

**MSIS 711: Deriving Strategic Value from IT Investments.** 2 credits.
Prepares students to be educated consumers of information technology to maximize strategic advantage of IT to an organization. Information technologies, architectures, and products are categorized and analyzed with a view to develop and maintain the most favorable IT asset portfolio to successfully carry out business goals and strategies. Techniques for making group technology assessments, outsourcing decisions, project bidding, and contract negotiations. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to TECM 711.

**Registration Restrictions:**
Enrollment is limited to students with a major in Management of Secure Info Syst or Technology Management.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSIS 735: Capstone Project.** 1-3 credits.
Teams undertake a strategic evaluation and plan for IT-driven business initiatives. Presentation includes analysis of competitive forces and the value chain; recommendations, including changes in goals and organizational design; plan of action integrating marketing, human resource development, organizational design, finance, and information technology; and implementation plan using theories of communication and change management, to include business case and business plan. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to TECM 735.

**Registration Restrictions:**
Enrollment is limited to students with a major in Management of Secure Info Syst.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MSIS 747: Enterprise Information Security Audit.** 2 credits.
Focuses on defining a control framework, control objectives and the logging, monitoring and reporting and subsequent change management for an enterprise relying on secure information systems to its business objectives. Students will learn the process of creating a control structure with goals and objectives, audit a given IT infrastructure against it, and if found inadequate, establish a systematic remediation procedure. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** C or higher in MSEC 510 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

Students spend a week in an international residency. Emphasizes dealing with technological changes across international markets and amid global developments, virtual organizations, and project management across cultures. Corporate site visits combined with presentations by professors from universities outside the United States and relevant practitioners. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Management of Secure Info Syst.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

### Business and Legal Studies (BULE)

#### 300 Level Courses

**BULE 303: Legal Environment of Business.** 3 credits.
Survey of the legal environment of business, emphasizing legal concepts and legal reasoning to prepare students to recognize legal problems and formulate appropriate responses. Topics include the federal and state court systems, constitutional and administrative law, business torts and crimes, contracts and business ethics. Lecture, discussion, cases. Notes: School of Business students will not be permitted to make more than three attempts to achieve a C or higher in BULE 303. The third attempt requires School of Business academic advisor approval. Those who do not successfully complete this course within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. For more information about this, see the “Termination from the Major” section under Academic Policies. Students cannot receive credit for both BULE 302 and BULE 303. Offered by School of Business (p. 888). Limited to two attempts.

**Recommended Prerequisite:** Degree status; sophomore standing

**Registration Restrictions:**
Students with a class of Freshman may not enroll.

Non-Degree or Washington Consortium level students may not enroll.

Students with the terminated from BU major attribute may not enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses
BULE 402: Commercial Law. 3 credits.
Survey of commercial law emphasizing the Uniform Commercial Code. Lecture, discussion, cases. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: BULE 302C, L302, 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Chemistry (CHEM)

100 Level Courses
CHEM 101: Introduction to Modern Chemistry. 3 credits.
Physical and chemical discoveries and properties of matter presented along with their application and impact on way of life. Topics include atomic and molecular structure, nuclear chemistry, and chemistry in Earth and atmosphere. Note: does not fulfill the requirement for a laboratory course in chemistry. Not for chemistry majors. No credit given for both CHEM 101 and CHEM 103 or for both CHEM 101 and CHEM 211-212. Limited to three attempts.

Mason Core: Natural Science Overview (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 102: Chemistry for Changing Times. 3 credits.
Modern course to explore and discover chemistry in the 21st century with an emphasis on current societal concerns. Examines carbon-containing compounds such as polymers, biomolecules, drugs, and fuels, which play a central role in medicine, manufacturing, green energy, and forensic science. Topics include examples from organic chemistry, conformational analysis, stereochemistry, genetics, and protein-protein interactions. (CHEM 102 does not require concomitant registration in a 104 lab section.) Notes: Not open to students majoring in Chemistry, not intended for science majors. Offered by Chemistry (p. 661). Limited to three attempts.

Mason Core: Natural Science Overview (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 103: Chemical Science in a Modern Society. 4 credits.
Terminal course in chemistry for non-science and nursing majors. Principles and application of chemistry. Notes: CHEM 103 and CHEM 101 are taught simultaneously in the same room. CHEM 101 is for those students who are not required to complete the lab component of CHEM 103. Not open to students majoring in chemistry. Credit will not be given for both this course and CHEM 211, 212. Topics are those described for CHEM 101 and 102 but with lab to enhance scientific experience. Offered by Chemistry (p. 661). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 104: Chemistry for Changing Times. 4 credits.
Modern course in to explore and discover chemistry in the 21st century with an emphasis on current societal concerns. Examines carbon-containing compounds such as, polymers, biomolecules, drugs, and fuels, which play a central role in medicine, manufacturing, green energy, and forensic science. Topics include examples from organic chemistry, conformational analysis, stereochemistry, genetics, and protein-protein interactions. (CHEM 104 requires concomitant registration in a 104 lab section.) Notes: Not open to students majoring in Chemistry, not intended for science majors or credit for 211 and 213. Offered by Chemistry (p. 661). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 105: Introductory Chemistry Laboratory I. 1 credit.
Introductory laboratory course to demonstrate principles and application of chemistry. Notes: Not open to students majoring in chemistry. Credit will not be given for both this course and CHEM 211, 212. Students will enroll in CHEM 105 by Individualized Section and attend one of the CHEM 103 lab sections. Offered by Chemistry (p. 661). Limited to three attempts.

Recommended Prerequisite: CHEM 101.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 106: Introductory Chemistry Laboratory II. 1 credit.
1-credit laboratory course for non-science majors. Laboratory experience to demonstrate principles and application of chemistry. Notes: Not open to students majoring in chemistry. Credit will not be given for both this course and CHEM 211, 212. Students will enroll in CHEM 106 by Individualized Section and attend one of the CHEM 104 lab sections. Offered by Chemistry (p. 661). Limited to three attempts.

Recommended Prerequisite: CHEM 102.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 155: Introduction to Environmental Chemistry I.** 4 credits.
Basic chemical principles of Earth’s water, air, and soil systems; presented in the context of understanding environmental issues. Includes Saturday morning field trips to sites of past and present environmental contamination, alternating with Saturday morning laboratory activities. Notes: Credit will not be given for this course and CHEM 103, 104. Offered by Chemistry (p. 661). Limited to three attempts.

**Mason Core:** Natural Science with Lab, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 156: Introduction to Environmental Chemistry II.** 4 credits.
Basic chemical principles of Earth’s water, air, and soil systems; presented in the context of understanding environmental issues. Includes Saturday morning field trips to sites of past and present environmental contamination, alternating with Saturday morning laboratory activities. Notes: Credit will not be given for this course and CHEM 103, 104. Offered by Chemistry (p. 661). Limited to three attempts.

**Mason Core:** Natural Science with Lab, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Recommended Prerequisite:** CHEM 155 or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**CHEM 211: General Chemistry I.** 3 credits.
Fundamental principles of atomic and molecular structure; chemical bonding; basic concepts of chemical reactions and thermochromistry; properties of gases, liquids, and solids. Notes: Credit will not be given for this course and CHEM 103, 104. Students majoring in science, engineering, or mathematics should choose this course sequence. CHEM 211 is a prerequisite to CHEM 212. Offered by Chemistry (p. 661). Limited to three attempts. Equivalent to CHEM 105, CHEM 106, CHEM 201.

**Mason Core:** Natural Science with Lab (p. 142)

**Registration Restrictions:**
Required Prerequisites: CHEM 213\(^C\), U213\(^*\) or 213T\(^*\).
\(\*) May be taken concurrently.
\(\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 212: General Chemistry II.** 3 credits.
Fundamentals of colligative properties, reaction rates and equilibrium. Topics include kinetics, properties of solutions, ionic equilibrium, chemical thermodynamics, electrochemistry, and nuclear chemistry. Notes: Credit will not be given for this course and CHEM 103, 104. Students majoring in science, engineering, or mathematics should choose this course sequence. Offered by Chemistry (p. 661). Limited to three attempts. Equivalent to CHEM 202.

**Mason Core:** Natural Science with Lab (p. 142)

**Registration Restrictions:**
Required Prerequisites: CHEM 211\(^C\), 211T or U211) and (CHEM 213\(^C\), 213T or U213) and (CHEM 214\(^C\), 214T\(^*\) or U214\(^*\)).
\(\)* May be taken concurrently.
\(\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 213: General Chemistry Laboratory I.** 1 credit.
General Chemistry laboratory course for students majoring in science, engineering, or mathematics. Laboratory experience will demonstrate general chemistry principles and applications. Notes: Students majoring in science, engineering, or mathematics should choose this course sequence. Credit will not be given for this course and CHEM 103. Offered by Chemistry (p. 661). Limited to three attempts.

**Mason Core:** Natural Science with Lab (p. 142)

**Registration Restrictions:**
Required Prerequisites: CHEM 211\(^T\), U211\(^*\) or 211T\(^*\).
\(\) Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 214: General Chemistry Laboratory II.** 1 credit.
General Chemistry laboratory course for students majoring in science, engineering, or mathematics. Laboratory experience will demonstrate general chemistry principles and applications. Notes: Credit will not be given for this course and CHEM 103, CHEM 104. Students majoring in science, engineering, or mathematics should choose this course sequence. Offered by Chemistry (p. 661). Limited to three attempts. Equivalent to CHEM 204.

**Mason Core:** Natural Science with Lab (p. 142)

**Registration Restrictions:**
Required Prerequisites: (CHEM 212\(^T\), U212\(^*\) or 212T\(^*\)) and (CHEM 211\(^C\), 211T or U211) and (CHEM 213\(^C\), 213T or U213).
\(\) May be taken concurrently.
\(\) Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 271: General Chemistry for Engineers Lecture.** 3 credits.
Fundamental principles of chemical structure and reactivity including atomic and molecular structure; chemical bonding; structures of ionic, covalent, and metallic lattices; oxidation reduction; electrochemistry and chemistry of metals; and introduction to organic chemistry and polymers. Notes: Enrollment restricted to students intending to major in engineering. Students who need two semesters of chemistry should...
enroll in CHEM 211/CHEM 213 and CHEM 212/CHEM 214. Credit will not be given for this course and CHEM 211/CHEM 213. Offered by Chemistry. May not be repeated for credit. Corequisite CHEM 272. Offered by Chemistry (p. 661). Limited to two attempts.

**Mason Core:** Natural Science Overview (p. 142)

**Registration Restrictions:**
- **Required Prerequisite:** CHEM 272<sup>C</sup>.
- <sup>*</sup>May be taken concurrently.
- <sup>C</sup>Requires minimum grade of C.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 272: General Chemistry for Engineers Lab.** 1 credit.
Lab course to accompany CHEM 271 Lecture. General Chemistry laboratory course for students majoring in engineering. Laboratory experience will demonstrate general chemistry principles and applications. Corequisite CHEM 271. Offered by Chemistry (p. 661). Limited to two attempts.

**Mason Core:** Natural Science with Lab (p. 142)

**Registration Restrictions:**
- **Required Prerequisite:** CHEM 271<sup>C</sup>.
- <sup>*</sup>May be taken concurrently.
- <sup>C</sup>Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 300 Level Courses

**CHEM 300: Chemistry of Semiconductor Processing.** 3 credits.
Chemical aspects of the manufacture of semiconductor devices. Topics include oxidation of silicon, photoresists, plasma etching, removal of metal contaminants by acid etching, and analysis of semiconductor thin films. Notes: Does not satisfy chemistry course requirements for BS in biology. Cannot be used as a chemistry elective toward BA, BS, or minor in chemistry, and does not fulfill premedical requirements. Offered by Chemistry (p. 661). Limited to three attempts.

**Recommended Prerequisite:** 30 credit hours or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 310: Survey of Organic Chemistry.** 3 credits.
A one-semester survey of the chemistry of organic compounds with emphasis on structure, properties, stereochemistry, nomenclature, synthesis, and reactions of the major functional group families. Applications and compounds of importance to biology and biochemistry stressed. Credit will not be given for this course and CHEM 313; credit will not be given for this course and CHEM 314. Offered by Chemistry (p. 661). Limited to three attempts.

**Registration Restrictions:**
- **Required Prerequisites:** (CHEM 271<sup>C</sup> and 272<sup>C</sup>) or (CHEM 211<sup>C</sup>, 213<sup>C</sup>, 212<sup>C</sup> and 214<sup>C</sup>).</p>  
- <sup>C</sup>Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 313: Organic Chemistry I.** 3 credits.
Theoretical, synthetic, industrial, and biological aspects of the chemistry of carbon compounds. Offered by Chemistry (p. 661). Limited to three attempts.

**Recommended Corequisite:** CHEM 315.

**Registration Restrictions:**
- **Required Prerequisites:** (CHEM 212<sup>C</sup> or U212).
- <sup>C</sup>Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 314: Organic Chemistry II.** 3 credits.
Theoretical, synthetic, industrial, and biological aspects of the chemistry of carbon compounds. Offered by Chemistry (p. 661). Limited to three attempts.

**Recommended Corequisite:** CHEM 318.

**Registration Restrictions:**
- **Required Prerequisites:** (CHEM 313<sup>C</sup> or L313).
- <sup>C</sup>Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 315: Organic Chemistry Lab I.** 2 credits.
Lab techniques and reactions arranged to accompany CHEM 313. Notes: One-hour recitation. Offered by Chemistry (p. 661). Limited to three attempts.

**Registration Restrictions:**
- **Required Prerequisites:** (CHEM 313<sup>C</sup> or L313<sup>*</sup>).
- <sup>*</sup>May be taken concurrently.
- <sup>C</sup>Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 318: Organic Chemistry Lab II.** 2 credits.
Continuation of CHEM 315, arranged to accompany CHEM 314. Notes: One-hour recitation. Offered by Chemistry (p. 661). Limited to two attempts.

**Recommended Corequisite:** CHEM 314.

**Registration Restrictions:**
- **Required Prerequisites:** (CHEM 315<sup>C</sup> or L315<sup>C</sup>).  
- <sup>C</sup>Requires minimum grade of C.
Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 321: Quantitative Chemical Analysis. 4 credits.
Principles of chemical analysis emphasizing ionic equilibria. Lab consists of gravimetric, volumetric, and instrumental methods illustrating principal types of quantitative determinations. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: CHEM 212C, MATH 113C, CHEM 211C and MATH 114C.
May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 331: Physical Chemistry I. 3 credits.
Yearlong survey covering topics including thermodynamics, equilibria, kinetics, solution properties, elementary quantum theory, electrochemistry, atomic and molecular structure, and nuclear chemistry. Offered by Chemistry (p. 661). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CHEM 212C, 211C, 213C and 214C) and (MATH 114C or 116C) and (PHYS 243C or 160C).
May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 332: Physical Chemistry II. 3 credits.
Yearlong survey covering topics including thermodynamics, equilibria, kinetics, solution properties, elementary quantum theory, electrochemistry, atomic and molecular structure, and nuclear chemistry. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (MATH 114C and CHEM 331C) and (PHYS 243C or 160C) and (PHYS 244C or 260C).
May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 336: Physical Chemistry Lab I. 2 credits.
Quantitative experimental study of physicochemical principles. CHEM 336 and 337 constitute an introduction to the practice and theory of experimental physical chemistry. Notes: One-hour recitation. Offered by Chemistry (p. 661). Limited to two attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: CHEM 212C, 321C and 331C and (PHYS 243C or 160C) and (MATH 114C or 116C).
May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 337: Physical Chemistry Lab II. 2 credits.
Continuation of CHEM 336. Notes: One-hour recitation. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (CHEM 331C or L331) and (CHEM 332C or L332) and (CHEM 336C or L336).
May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 355: Undergraduate Research. 1-3 credits.
Original research project. May involve lab study, computer modeling and analysis, or other original research as appropriate. Research formulated and completed under instructor's guidance. Culminates in a written and oral final report. May be repeated for a total of 6 credits. Offered by Chemistry (p. 661). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: CHEM 313C, 315C, MATH 113C, PHYS 243C and 244C.
C Requires minimum grade of C.

Schedule Type: Research

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

CHEM 413: Synthetic and Mechanistic Organic Chemistry. 3 credits.
General review of synthetic pathways and applications to new topics, emphasizing fused ring aromatics, heterocyclics, natural products, and biologically active compounds. Includes relationship of applied organic chemistry to consumer products, including drugs and agricultural chemicals. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (CHEM 314C or 314L) and (CHEM 318C or 318L) and CHEM 331C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
CHEM 422: Instrumental Methods of Chemical Analysis. 3 credits.
Introduces theories of analysis by instrumental methods. Basic electronics applied to chemical measurements. Topics include introduction to theory of spectroscopy including ultraviolet, visible, and infrared, and electrochemical methods of analysis; theory of Fourier transform techniques such as FT-IR and FT-NMR; and theory of advanced pulse techniques. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: CHEM 321C, 332C and 337C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 423: Instrumental Methods of Chemical Analysis Laboratory. 2 credits.
Laboratory-based introduction to quantitative analysis of organic and inorganic substances by using modern analytical instrumentation. Laboratory highlights practice of atomic and molecular spectroscopy, spectrophotometry, chromatography, voltammetry, and potentiometry in relation to chemical experimentation. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: CHEM 422C.
C Requires minimum grade of C.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 424: Principles of Chemical Separation. 3 credits.
Theories and models of separation with applications to analyses of a wide range of chemical, biological, and environmental samples. Topics include high-resolution gas and high-performance liquid chromatography. Emphasizes theory of reverse phase, normal phase, ion exchange, size exclusion, and affinity based separations. Also presents instrumentation including high-resolution gas and high-performance liquid chromatography. Offered by Chemistry (p. 661). Limited to three attempts.

Recommended Prerequisite: CHEM 332 or CHEM 422 or Permission of instructor

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 425: Electroanalytical Chemistry. 3 credits.
Review of basic electrochemistry. Emphasizes analysis and research for applications of modern electrochemical techniques such as chronoamperometry; cyclic, stripping, and AC voltammetry; pulse polarography; coulometry; electrochemical sensors; and instrumentation. Offered by Chemistry (p. 661). Limited to three attempts.

Recommended Prerequisite: CHEM 332 or CHEM 422 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 427: Aquatic Environmental Chemistry. 3 credits.
Thermodynamic and kinetic processes regulating the chemistry of surface and groundwater in natural and polluted environments with particular emphasis in explaining the aqueous concentrations of chemical species and controlling geochemical factors in the hydrosphere. Structure, sources and transformations of organic matter in the aquatic environment and interactions with aqueous solutes will be covered as related to contemporary issues in water quality. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: CHEM 321C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 438: Atmospheric Chemistry. 3 credits.
The fundamental chemical processes of the Earth's atmosphere including chemical cycles, thermodynamics, reaction kinetics, photochemistry, radiative balance, ozone chemistry and environmental issues, including air pollution, acid rain and global change. Offered by Chemistry (p. 661). Limited to three attempts. Equivalent to CLIM 438.

Registration Restrictions:
Required Prerequisite: CHEM 332C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 439: RS: Atmospheric Chemistry II: Air Analysis Techniques. 3 credits.
The theory, design and implementation of air sampling and analysis techniques for investigating GMU and regional air quality. Offered by Chemistry (p. 661). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive
Recommended Prerequisite: CHEM 438 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 441: Properties and Bonding of Inorganic Compounds. 3 credits.
Interpretation of physical and chemical properties of inorganic compounds in terms of currently used bonding concepts. Topics include molecular symmetry and applications of symmetry, structure and bonding in ionic solids; reactions and characterizations of solids; electronic and magnetic properties and applications of solids. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: CHEM 332C and 337C.
C Requires minimum grade of C.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 445: Inorganic Preparations and Techniques. 2 credits.
Application of techniques of inorganic chemistry to preparation,
membrane purification, and spectroscopic characterization of selected substances.
Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: CHEM 441C.
C Requires minimum grade of C.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 446: Bioinorganic Chemistry. 3 credits.
Application of inorganic coordination chemistry and physical methods
in study of structure and function of metal ion sites in biomolecules.
Properties of transition metal ions, ligand field theory. Topics include
iron cytochromes, zinc and copper enzymes, cobalamins, iron sulfur proteins,
oxygen transport, iron storage, electron transfer, inorganic model compounds,
metals in medicine, and toxicity of inorganic species. Offered by Chemistry (p. 661). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (CHEM 463C or BIOL 483C) and CHEM 331C and 336C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 451: Special Projects in Chemistry. 1-3 credits.
Introduction to chemical research or development. Includes literature
search, conferences, and lab. Notes: Written and oral technical reports
required. Offered by Chemistry (p. 661). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CHEM 314C, 318C, 321C, 331C and 336C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Chemistry.

Schedule Type: Research
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 455: Honors Research in Chemistry. 3 credits.
Introduction to research on current problem in chemical sciences under
supervision of faculty advisor. Includes literature search, laboratory or
theoretical work, conferences with faculty advisor, attendance at regularly
scheduled seminars, and oral and written presentations. Notes: Credit
will not be given for both these courses and CHEM 451, 452. Offered by Chemistry (p. 661). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CHEM 313C, 314C, 315C, 318C, 331C, 336C and 490C.
C May be taken concurrently.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major in Chemistry.

Enrollment limited to students with the Honors Coll Schlrshp Confirmd,
Honors College. or Honors in the Major. attributes.

Schedule Type: Research
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 456: Honors Research in Chemistry. 3 credits.
Introduction to research on current problem in chemical sciences under
supervision of faculty advisor. Includes literature search, laboratory or
theoretical work, conferences with faculty advisor, attendance at regularly
scheduled seminars, and oral and written presentations. Notes: Credit
will not be given for both these courses and CHEM 451, 452. Offered by Chemistry (p. 661). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CHEM 455C and 490*C.
C May be taken concurrently.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major in Chemistry.

Enrollment limited to students with the Honors Coll Schlrshp Confirmd,
Honors College. or Honors in the Major. attributes.

Schedule Type: Research
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 458: Chemical Oceanography. 3 credits.
The world's oceans, including a variety of closed basins and estuaries,
comprise a complex and dynamic system of chemical processes that
interact with biological, geological, physical, and atmospheric processes
to play a significant role in defining the earth's fragile environment. This
course will present an overview of the origin, occurrence, and distribution
of the chemical components in sea water and an introduction to the basic principles of the chemical processes taking place in the marine environment. Designated a Green Leaf Course. Offered by Chemistry (p. 661). Limited to three attempts. Equivalent to GEOL 458.

**Specialized Designation:** Green Leaf Related Course

**Registration Restrictions:**

**Required Prerequisites:** CHEM 211\(^C\) and 212\(^C\) and (CHEM 321\(^C\) or GEOL 309\(^C\)).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 463: *General Biochemistry I.* 4 credits.
Brief introduction to biochemistry, followed by in-depth look at amino acids and proteins, 3-D structure, folding and dynamics, their specialized function, and primary metabolism. Emphasizes enzymes and their chemical mechanisms, and metabolism. Offered by Chemistry (p. 661). Limited to three attempts. Equivalent to BIOL 483.

**Registration Restrictions:**

**Required Prerequisites:** (CHEM 313\(^C\) or L313) and BIOL 213\(^C\).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 464: *General Biochemistry II.* 3 credits.
Continuation of general biochemistry, focusing on secondary metabolism, cell signaling, and processes of replication, transcription, and translation. Emphasizes important biochemistry research topics; much material drawn from current biochemical literature. Offered by Chemistry (p. 661). Limited to three attempts.

**Registration Restrictions:**

**Required Prerequisites:** CHEM 463\(^C\) or (BIOL 483\(^C\) and (CHEM 314\(^C\) or L314)).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 465: *Biochemistry Lab.* 2 credits.
Introduction to modern biochemical experimental methods of studying chemical and physical properties of biological molecules. Includes separation, identification, and characterization of biomolecules. Offered by Chemistry (p. 661). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** Grade of C or better in CHEM 315 and CHEM 463.

**Recommended Corequisite:** CHEM 463.

**Registration Restrictions:**

**Required Prerequisites:** (CHEM 463\(^C\) or BIOL 483\(^C\)) and (CHEM 315\(^C\) or L315).

\(^C\) May be taken concurrently.

\(^C\) Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 467: *The Chemistry of Enzyme-Catalyzed Reactions.* 3 credits.
Examples of enzyme mechanisms demonstrate how chemical principles are employed by living organisms. Specific enzyme mechanisms used to illustrate principles from organic, inorganic, and physical chemistry. Discusses techniques to monitor enzyme reactions. Offered by Chemistry (p. 661). Limited to three attempts.

**Registration Restrictions:**

**Required Prerequisites:** CHEM 463\(^C\), 464\(^C\), 314\(^C\) and 331\(^C\).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 468: *Bioorganic Chemistry.* 3 credits.
Basic understanding of chemical nature of biomolecules and biomacromolecules. Introduces biomolecules such as amino acids, proteins, carbohydrates, and lipids. Lectures focus on biophysical properties and synthesis, using practical examples and visual aids. Offered by Chemistry (p. 661). Limited to three attempts.

**Registration Restrictions:**

**Required Prerequisites:** CHEM 463\(^C\), 464\(^C\) and 314\(^C\).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 470: *Laboratory Instructional Methods for Chemistry.* 3 credits.
Lecture and laboratory experience teaching chemistry in laboratory. Students work closely with faculty members and are responsible for all aspects of teaching undergraduate laboratory techniques. Students also learn techniques for acquisition and storage of chemicals and laboratory apparatus, safety, disposal of chemical waste, and literature of chemical education. Offered by Chemistry (p. 661). Limited to three attempts.

**Recommended Prerequisite:** CHEM 314.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

CHEM 490: *Undergraduate Seminar.* 1 credit.
Selected topics from recent chemical theory and applications, generally consisting of research presentations by invited faculty from other institutions. Attendance is required at 80% of the seminars and students must write up a one-page summary of each talk attended. This course will also be used to teach students how to give effective presentations. May be repeated for a total of 2 credits. Offered by Chemistry (p. 661). May be repeated within the degree for a maximum 2 credits.

**Registration Restrictions:**

**Required Prerequisites:** (CHEM 331\(^C\) or 336\(^C\)).
Chemistry (CHEM)

C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Chemistry.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

CHEM 500: Selected Topics in Modern Chemistry. 3 credits.
Topics of interest in analytical, biological, environmental, geological, geochimical, inorganic, organic, and physical chemistry. Notes: Credit not allowed toward major in chemistry. Credit not allowed toward minor in chemistry. Offered by Chemistry (p. 661). May not be repeated for credit.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CHEM 513: Synthetic and Mechanistic Organic Chemistry. 3 credits.
General review of synthetic pathways and applications to new topics, emphasizing fused ring aromatics, heterocyclics, natural products, and biologically active compounds. Includes relationship of applied organic chemistry to consumer products, including drugs and agricultural chemicals. Organic core course. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite: Grade of C or better in CHEM 314, CHEM 318 and CHEM 331.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduates and Undergraduates.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CHEM 563: General Biochemistry I. 4 credits.
Brief introduction to biochemistry, followed by an in-depth look at amino acids and proteins, 3-D structure, folding and dynamics, their specialized function and primary metabolism. Emphasizes enzymes and their chemical mechanisms and metabolism. Students will be assigned papers from the primary literature and be required to answer questions from these papers on exams. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite: CHEM 313, BIOL 213.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduates and Undergraduates.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CHEM 564: General Biochemistry II. 3 credits.
Previous course in biology recommended but not required. Important biological compounds, including proteins, carbohydrates, lipids, and nucleic acids, and their interrelations. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite: CHEM 563 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduates and Undergraduates.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
CHEM 567: The Chemistry of Enzyme-Catalyzed Reactions. 3 credits.
Examples of enzyme mechanisms demonstrate how chemical principles are employed by living organisms. Specific enzyme mechanisms used to illustrate principles from organic, inorganic, and physical chemistry. Discusses techniques to monitor enzyme reactions. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite: CHEM 313 and 463 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses
CHEM 613: Modern Polymer Chemistry. 3 credits.
Synthetic and analytical chemistry of synthetic macromolecules. Topics include polymer solutions, molecular weight determination, spectroscopy, thermal analysis, x-ray crystallinity, polymerization types, and commercial and electroactive polymers. Organic core course. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite:
CHEM 314 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CHEM 614: Physical Organic Chemistry. 3 credits.
Principles underlying molecular structure, reactivity, and reaction mechanisms. Topics include valence-bond and molecular-orbital theory, electronic interpretation of organic reactions, stereochemistry, conformational analysis, kinetics and thermodynamics of organic reactions, and photochemistry. Organic core course. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite:
CHEM 314 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CHEM 620: Modern Instrumentation. 3 credits.
Methods of sensing and measurement of radiation, particles, pressure, concentrations of specific elements and compounds. Topics include basic operational amplifier circuits for analog signals, digitizing devices and computerized data collection, noise and noise-reduction methods, and specialized instrumentation systems for various areas of chemistry and physics. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite:
CHEM 332 or CHEM 422 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 624: Principles of Chemical Separation.** 3 credits.
Theories and models of separation with applications to analyses of a wide range of chemical, biological, and environmental samples. Topics include high-resolution gas and high-performance liquid chromatography. Emphasizes theory of reverse phase, normal phase, ion exchange, size exclusion, and affinity based separations. Also presents instrumentation such as detectors, pumps, and columns, and data acquisition. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 332 or CHEM 422 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 625: Electroanalytical Chemistry.** 3 credits.
Review of basic electrochemistry. Emphasizes analysis and research for applications of modern electrochemical techniques such as chronoamperometry; cyclic, stripping, and AC voltammetry; pulse polarography; coulometry; electrochemical sensors; and instrumentation. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 332 or CHEM 422 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 627: Aquatic Environmental Chemistry.** 3 credits.
Thermodynamic and kinetic processes regulating the chemistry of surface and groundwater in natural and polluted environments with particular emphasis in explaining the aqueous concentrations of chemical species and controlling geochemical factors in the hydrosphere. Structure, sources and transformations of organic matter in the aquatic environment and interactions with aqueous solutes will be covered as related to contemporary issues in water quality. Students will be assigned papers from the primary literature and be required to answer questions from these papers on exams. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 321 or GEOL 302 or equivalent courses or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 633: Chemical Thermodynamics and Kinetics.** 3 credits.
Advanced study covering application of kinetics to the elucidation of reaction mechanisms and application of statistical thermodynamics to theory of elementary reaction rates. Physical core course. Offered by Chemistry (p. 661). May not be repeated for credit. Equivalent to CSI 711.

**Recommended Prerequisite:** CHEM 331 and 332.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 641: Solid State Chemistry.** 3 credits.
Focuses on the design and synthesis, structure and bonding of solid state compounds; physical properties and characterization of solids. Topics of current interest will also be included. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 441 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
CHEM 646: Bioinorganic Chemistry. 3 credits.
Applies inorganic coordination chemistry and physical methods to understand structure and function of metal ion sites in biomolecules. Biochemical roles of metal centers in oxygen transport, metalloenzymes, and electron transfer. Topics include iron cytochromes, zinc and copper enzymes, cobalamins, iron sulfur proteins, inorganic model compounds, and metals in medicine. Inorganic core course. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite: CHEM 441, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CHEM 651: Environmental Chemistry of Organic Substances. 3 credits.
Study of principles governing multimedia distribution and fate of organic chemicals in environment. Overview of origin and occurrence of major classes of natural and anthropogenic organic chemicals in environment. Environmental core course. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite: One semester of Physical Chemistry, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CHEM 660: Protein Biochemistry. 3 credits.
Proteins play critical roles in most biological processes. Therefore, to understand these processes, it is necessary to understand proteins. This course will introduce students to proteins, their biosynthesis/ biodegradation and their biophysical and biochemical properties. Biochemistry core course. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite: CHEM 463 or equivalent or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CHEM 665: Protein-Protein Interactions: Methods and Applications. 3 credits.
Introduction to the fundamental principles of protein-protein interactions, including experimental design considerations and methods for quantification of these interactions. Offered by Chemistry (p. 661). May not be repeated for credit.

Recommended Prerequisite: CHEM 463 (or equivalent), or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 670: Teaching Practicum.** 2 credits.
Pre-laboratory lecture and laboratory teaching in chemistry. Students work closely with faculty and are responsible for all aspects of teaching undergraduate laboratory techniques. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** Enrollment in the graduate program and permission of Chair.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**700 Level Courses**

**CHEM 728: Introduction to Solid Surfaces.** 3 credits.
Introduces properties of solid surfaces. Topics include gas absorption isotherms, surface area measurement techniques, real and clean surfaces, physisorption and chemisorption, methods of gas adsorption and desorption, measurement of heats of adsorption, desorption kinetics, electron spectroscopies and surface sensitivities, instrumentation; and principles of vacuum technology. Offered by Chemistry (p. 661). May not be repeated for credit. Equivalent to CSI 712.

**Recommended Prerequisite:** CHEM 422 or equivalent.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 735: Astrophysical Chemistry of Planetary Bodies.** 3 credits.
In depth review of the chemistry of planets, comets and other bodies in the Solar System. Emphasis will be placed on the laboratory techniques and measurements made in order to understand and predict astronomical observations. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 331, or ASTR 403, or permission of instructor.

**Registration Restrictions:**

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 736: Computational Quantum Mechanics.** 3 credits.
Study of fundamental concepts of quantum mechanics from computational point of view, review of systems with spherically symmetric potentials, electron-atom solutions to Schrodinger’s equation, electron spin in many electron systems, atomic structure calculations, algebra of many electron calculations, Hartree-Fock, self-consistent field method, molecular structure calculations, scattering theory computations, and solid-state computations. Offered by Chemistry (p. 661). May not be repeated for credit. Equivalent to CSI 783, PHYS 736.

**Recommended Prerequisite:** PHYS 502, 510, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 767: Industrial Biochemistry.** 3 credits.
An introduction to industrial biochemistry. Includes a mechanistic examination of the biosynthesis of several industrially important secondary metabolites, the industrial scale process of obtaining commercially valuable biochemical products, and the regulations that oversee the industrial biochemical process. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 463 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 790: Graduate Seminar.** 1 credit.
Selected topics from recent chemical theory and applications, generally consisting of research presentations by invited faculty from other institutions. Attendance is required at 80% of the seminars and students must write up a 1-page summary of each talk attended. Course also used to teach students effective presentation methods. Notes: Requires, in last semester, seminar presentation on student’s research or another topic acceptable to department. Three credits of CHEM 790 required for MS degree; an additional 3 credits required after admission to PhD program. Offered by Chemistry (p. 661). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Admission to a graduate program in Chemistry and Biochemistry, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 796:** Directed Reading and Research. 1-6 credits.
Reading and research on a specific topic in chemistry or biochemistry under direction of a faculty member. Offered by Chemistry (p. 661). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** Admission to a graduate program in Chemistry and Biochemistry or affiliated programs.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 798:** Research Project. 3-6 credits.
Experimental or theoretical research project chosen and completed under guidance of graduate faculty member. Notes: Requires comprehensive report acceptable to advisory committee, and final oral exam on report. Offered by Chemistry (p. 661). May be repeated within the degree for a maximum 6 credits.

**Recommended Corequisite:** Permission of department; 6 credits of CHEM 798 or 799 (credit will not be given for both).

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CHEM 799:** Master's Thesis. 1-6 credits.
Laboratory thesis research and writing under direction of supervisor. Notes: Minimum of 3 credits for first two enrollment periods. Offered by Chemistry (p. 661). May be repeated within the degree.

**Recommended Corequisite:** Permission of the department.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**CHEM 814:** Advanced Bioorganic Chemistry. 3 credits.
Introduces the chemical nature of biomolecules, with a focus on their organic properties. Focuses on the chemical principals that underlie the diverse structures, properties and reactions of biomolecules. Core course in the Chemistry and Biochemistry doctoral program. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 313, 314, and 463 or equivalent; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 817:** Organic Structural Spectroscopy. 3 credits.
Spectroscopic determination of organic molecular structure using 1H, 13H, 19F, and 31P nuclear magnetic resonance, infrared, ultraviolet, visible, and Raman spectroscopy, and mass spectrometry. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 314 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 821:** Theory of Analytical Processes. 3 credits.
Theory and application of contemporary analytical processes and methods used in chemistry research. Emphasis on analytical signals and accompanying noise, sample preparation techniques, and quality assurance in measurements. Core course in the Chemistry and Biochemistry doctoral program. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Chemistry and Biochemistry doctoral program.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 833:** Physical Chemistry and Biochemistry. 3 credits.
The theory and practical use of thermodynamics, kinetics, spectroscopy and quantum chemistry in chemical and biochemical research. Core course in the Chemistry and Biochemistry doctoral program. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 331 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**CHEM 891: Doctoral Scientific Critique, Writing and Presentation.** 3 credits. Development of skills associated with scientific communication and research such as oral presentation of scientific material, analysis of scientific research and preparation of scientific proposals. In preparing scientific proposals, students will learn how to identify scientific questions of interest and how to plan a course of experiments to address these questions. Core course in the Chemistry and Biochemistry doctoral program. Offered by Chemistry (p. 661). May not be repeated for credit.

**Recommended Prerequisite:** Permission of academic advisor, research advisor and/or research committee

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHEM 896: Doctoral Directed Reading and Research.** 1-6 credits. Reading and research on a specific topic in Chemistry or Biochemistry under direction of a faculty member. Offered by Chemistry (p. 661). May be repeated within the degree for a maximum 15 credits.

**Recommended Prerequisite:** Admission to the PhD in Chemistry and Biochemistry or affiliated programs.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**CHEM 998: Doctoral Dissertation Proposal.** 1-12 credits. Development of a research proposal under the guidance of the research advisor and graduate committee. The resulting proposal, once approved by the student's research advisor and committee, forms the basis of the student's doctoral dissertation. May be repeated for credit, but no more than 24 combined credits from CHEM 998 and CHEM 999 may be applied toward satisfying doctoral degree requirements, with no more than 12 credits of CHEM 998. Offered by Chemistry (p. 661). May be repeated within the degree.

**Recommended Prerequisite:** Admission to candidacy in Chemistry and Biochemistry Doctoral Program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### Chinese (CHIN)

#### 100 Level Courses

**CHIN 101: Elementary Chinese.** 3 credits. Introduction to Mandarin, including basic grammar, oral expression, listening comprehension, reading, and writing. Notes: Students may not receive credit for CHIN 101 and CHIN 109 or 110. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to CHIN 109, CHIN 110.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHIN 102: Elementary Chinese.** 3 credits. Continuation of CHIN 101. Notes: Students may not receive credit for CHIN 102 and CHIN 109 or 110. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to CHIN 109, CHIN 110.

**Recommended Prerequisite:** CHIN 101.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHIN 110: Elementary Chinese.** 6 credits. Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Notes: Lab work required. Students may not receive credit for CHIN 110 and CHIN 101, 102, or 109. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to CHIN 101, CHIN 102, CHIN 109.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

#### 200 Level Courses

**CHIN 201: Intermediate Chinese I.** 3 credits. Further development of skills acquired in CHIN 101 and 102, including grammar, oral expression, listening comprehension, reading, and writing. Notes: CHIN 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** CHIN 101 and 102, or CHIN 110.
CHIN 202: Intermediate Chinese II. 3 credits.
Continuation of CHIN 201. CHIN 201 and 202 must be taken in sequence.
Notes: Students may not receive credit for CHIN 202 and CHIN 209.
Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: CHIN 201.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHIN 209: Intensive Intermediate Chinese. 6 credits.
Recommended for students who desire training in Chinese to an intermediate level of competence in a relatively short period of time.
Notes: Equivalent to CHIN 201 and 202 taught in single semester.
Students may not receive credit for CHIN 209 and the CHIN 201/202 sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: CHIN 102, 109, appropriate placement score, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses
CHIN 300: Reading Skills Development. 3 credits.
Develops reading proficiency, emphasizing vocabulary and grammar of standard written Chinese. Introduces discourse structure, sociolinguistic and cultural knowledge, and strategies for reading Chinese at an advanced level. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: CHIN 202, appropriate placement score, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHIN 301: Advanced Grammar and Syntax. 3 credits.
In-depth review of Chinese grammar and syntax. Provides extensive practice in controlled and free writing, emphasizing fundamental difficulties and points of interference between English and Chinese.
Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: CHIN 202 or equivalent, appropriate placement score, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHIN 305: Chinese for the Business World. 3 credits.
Introduces terminology and structure of business Chinese. Emphasizes acquiring vocabulary and developing facility in Chinese business articles and correspondence. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: CHIN 202 or equivalent; appropriate placement score; or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHIN 310: Survey of Chinese Literature. 3 credits.
Introduces outlines of Chinese literature to the 19th century, presented through literary sources arranged in roughly chronological order.
Readings include poetry, fiction, personal essays, documents of philosophy, history, and religion, and transcribed oral records.
Notes: Knowledge of Chinese helpful but not required. May be repeated when topic is different with approval of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Mason Core: Literature (p. 142)
Recommended Prerequisite: ENGL 101/ENGH 101, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHIN 311: Modern Chinese Literature in Translation. 3 credits.
Introduction of outlines of modern Chinese literature from early 20th century to post-Mao era, presented through literary sources arranged in roughly chronological order.
Readings include poetry, fiction, personal essays.
Notes: Knowledge of Chinese helpful but not required. May be repeated when topic is different with approval of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

Mason Core: Literature (p. 142)
Recommended Prerequisite: ENGL 101/ENGH 101 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHIN 318: Introduction to Classical Chinese. 3 credits.
Introduces basic structures and vocabulary of Classical Chinese, which still has a significant influence on the formal written prose of modern newspapers and documents.
Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Capstone (p. 142)
Specialized Designation: Non-Western Culture

Recommended Prerequisite: CHIN 202, appropriate placement score, or permission of instructor.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHIN 320: Contemporary Chinese Film.** 3 credits.
Explores China from 1949 to present through cinematic and literary representations. Discussions focus on representations of cultural, social, and political changes in the movies. Also introduces critical readings that address issues of gender and youth, family, ethnicity, modernity, and the nation, as well as visuality and memory. Notes: Knowledge of Chinese language helpful but not required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** CHIN 300 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHIN 325: Major Chinese Writers.** 3 credits.
Studies works of major Chinese writers. Writers studied may vary. Notes: Knowledge of Chinese helpful but not required. May be repeated when topic is different with approval of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Mason Core:** Literature (p. 142)

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** ENGL 101/ENGH 101, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHIN 328: Asian American Women Writers.** 3 credits.
Introduction to selected works by female writers of Chinese, Filipino, Indian, Japanese, and Korean descent. Analyzes themes, form, style, language, and structure of a variety of works, mainly novels and short stories. Assesses role and significance of writings as part of ethnic American and women's literature by exploring questions of identity formation and disintegration, and how they are rooted in gender, social status, ethnicity, community, geography, and generational conflict. Notes: Knowledge of Asian languages not required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Mason Core:** Literature (p. 142)

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**CHIN 335: Readings in Chinese Poetry and Poetics.** 3 credits.
Close readings and discussions of primary texts covering major periods in Chinese poetry to 1949. Analyzes variety of themes, forms, and styles. Notes: May be repeated when readings are different with permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Mason Core:** Capstone (p. 142)
CHIN 481: Fourth-Year Chinese II. 3 credits.
Advanced work in major grammatical and lexical topics of Chinese.
Applies theoretical principles to guided written and oral exercises. Offered
by Modern & Classical Languages (p. 424). Limited to three attempts.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CHIN 485: China on Stage: Introduction to Chinese Theatrical Dramas in the
20th Century. 3 credits.
Literature-based Chinese language course open to students who want to
learn about Chinese drama and further develop their Chinese language
proficiency at advanced levels. Students read, discuss and perform seven
classic twentieth-century Chinese plays in order to understand modern
and contemporary Chinese society and the lives of ordinary Chinese
people. Offered by Modern & Classical Languages (p. 424). Limited to
three attempts.
Recommended Prerequisite: Two CHIN 300-level courses and one CHIN
400-level course
Recommended Corequisite: CHIN 400-level courses
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Work with schools, social service programs, government agencies,
interest groups, museums, or corporations locally and in Chinese-
speaking regions. With a faculty supervisor, students develop an
internship contract, which requires the approval of the director.
For each credit, student works on site at least 45 hours. Notes: Contact
the department one semester prior to enrollment. Offered by Modern
& Classical Languages (p. 424). May be repeated within the term for a
maximum 9 credits.
Recommended Prerequisite: CHIN 202 or equivalent.
Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Civil and Infrastructure Engineering (CEIE)

100 Level Courses

CEIE 100: Environmental Engineering around the World. 3 credits.
Society's relationship with the environment is: (1) fundamental to
its success; (2) complex, involving economics, finance, law, culture,
religion, politics, education, science, technology, and engineering; (3)
widespread, often with impacts not just locally but regionally, nationally
or globally; and (4) constantly changing with potentially enormous short-
term and long-term benefits and costs that may be in conflict. This
relationship can drive a society to thrive or decline. Humans today have
unprecedented ability to affect the environment both locally and globally,
and to be affected by it. Technology and engineering are key drivers in
society's efforts to manage our environment. This course will examine
the history of various societies' interactions—including our own—with the
environment; explore our ability to affect the environment—in small and
enormous ways—through modern science, technology and engineering;
and foster debate on today's critical environmental issues. Offered by
Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.
Mason Core: Global Understanding, Encore: Sustainability (p. 142)
Specialized Designation: Green Leaf Related Course
Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 101: Introduction to Civil Engineering. 2 credits.
This course introduces the profession of civil engineering, with specific
emphasis on modern challenges and solutions that are internal and
external to the domain of civil engineering. Topics include broad coverage
on technology-driven solutions to traditional engineering problems such
as geodesy and georeferencing; global positioning systems; remote
sensing; infrastructure security; civil engineering; big data; structural
health monitoring; and cyber-physical systems. Using the principles
taught in the course, for the term project students will develop solutions
to meet the United Nations Sustainable Development Goals to Transform
the World. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to
two attempts.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

CEIE 203: Geomantics and Engineering Graphics. 3 credits.
Introduces topographic surveying and engineering drawing for civil
engineering applications. Topics include surveying, GPS, GIS, digital
terrain modeling, design of horizontal and vertical curve geometry for
road applications, engineering drawing concepts, and drawing with CAD-
based software. Fieldwork required on selected topics. Offered by Civil,
Environ & Infrastr Engr (p. 1177). Limited to two attempts.
Registration Restrictions:
Required Prerequisites: (CEIE 117\textsuperscript{C} or CDS 130\textsuperscript{C}).
C Requires minimum grade of C.
Students with the terminated from VSE major attribute may not enroll.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 210: Statics. 3 credits.
Covers force vectors and operations in 2D and 3D; equilibrium of a
particle, moment of a force vector; equilibrium of a rigid body; truss
analysis; center of gravity, centroid and moment of inertia; shear force
and bending moment diagrams; dry friction; virtual work. Offered by Civil,
Environ & Infrastr Engr (p. 1177). Limited to two attempts.
Registration Restrictions:
Required Prerequisites: (PHYS 160\textsuperscript{C}) and (MATH 114\textsuperscript{C} or 116\textsuperscript{C}).
C Requires minimum grade of C.
Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 240: Hydraulics.** 3 credits.
Principles of fluids in equilibrium and motion. Topics include hydrostatic pressure; continuity, Bernoulli, and momentum equations; viscosity flow problems; pressure pipe flow and turbomachinery; measuring instruments; and applications to closed conduits and open channels. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: (PHYS 160\(^C\)).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**CEIE 301: Engineering and Economic Models in Civil Engineering.** 3 credits.
Applies planning, analysis, control, and engineering economic models to life cycle of physical infrastructure. Introduces infrastructure design process and application of quantitative and probabilistic models. Presents applications of model building for engineering economics; decision making; forecasting; resource scheduling and allocation; estimating; work measurement and materials; and quality and process control in water, transportation, environmental, energy, and telecommunications infrastructure systems and the built environment. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
Required Prerequisites: (STAT 344\(^C\) or L344) and (ENGL 302\(^C\), ENGH 302\(^C\), ENGL L302, ENGH L302 or HNRS 353\(^C\)).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 304: Jr Engineering Competency Exam.** 0 credits.
Assess student preparation for the Fundamentals of Engineering exam after completing engineering science requirements for a BS degree in engineering. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the term for a maximum 0 credits.

**Registration Restrictions:**
Required Prerequisites: (MATH 114\(^C\) or 116\(^C\)) and (PHYS 160\(^C\)).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Civil and Infrastructure Engr.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CEIE 310: Mechanics of Materials.** 3 credits.

**Registration Restrictions:**
Required Prerequisites: (ENGR 210\(^C\) or CEIE 210\(^C\)).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 311: Structural Analysis.** 3 credits.
Basic concepts and assumptions of structural analysis, including statical and geometric redundancy. Analysis, by integration of deformation of simple structural members. Virtual work method for the analysis of deformations of simple structural systems such as articulate beams, trusses, frames, and arches. Method of forces to analyze statically indeterminate systems, method of displacements to analyze geometrically indeterminate systems, and symmetry and antisymmetry in structural analysis. Uses computer programs for structural analysis. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (ENGR 310\(^C\), L310, CEIE 310\(^C\) or L310).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Civil and Infrastructure Engr.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 331: Soil Mechanics.** 3 credits.
Covers soil classification, soil properties and engineering characteristics of soils. Includes seepage effects, effective stresses, soil strength and deformation characteristics. Also, the determination of immediate and consolidation settlement, lateral earth pressures and bearing capacities. Introduces foundation design fundamentals. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (ENGR 210\(^C\) or CEIE 210\(^C\)) and (CEIE 230\(^C\) or 240\(^C\)).
\(^C\) Requires minimum grade of C.
Enrollment is limited to students with a major in Civil and Infrastructure Engr.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 340: Water Resource Engineering. 3 credits.
Introduces principles and practice of water resources engineering. Topics include hydrology, governing principles, design and evaluation methods, common models, and typical applications in water resource engineering. Laboratory and field work required on selected topics. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CEIE 230, U230, 240 or U240).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Civil and Infrastructure Engr.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 355: Environmental Engineering and Science. 3 credits.
Introduces students to the concepts of water pollution, air pollution, noise, and solid waste generation and management. Relationships between human population growth and pollution are introduced. Contemporary environmental engineering topics such as sustainability and global climate change are presented. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

Specialized Designation: Green Leaf Related Course

Registration Restrictions:
Required Prerequisites: (CHEM 211 or U211, 251 or U251 or 271) and (CEIE 230, U230, 240 or U240).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 360: Introduction to Transportation Engineering. 3 credits.
Introduces transportation systems and the factors that influence their planning, design, and operation. Topics include fundamentals of urban travel, travel demand forecasting, and traffic flow; principles of highway design; highway capacity and level of services; introduction to traffic control; traffic signal control systems; intersection design; speed zoning and control; and introduction to Intelligent Transportation Systems and travel demand management. Requires laboratory, field work on selected topics. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

Registration Restrictions:

Required Prerequisites: (CEIE 290, U290, 203 or U203) and (CEIE 304) and (ENGR 210, U210, CEIE 210 or U210).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Civil and Infrastructure Engr.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 370: Construction Systems. 3 credits.
Overview of the modern construction industry and principles and practices of construction management. Topics include project planning, construction administration, the contract environment, equipment operations, cost estimation and scheduling, and legal theories. Current industry trends are emphasized as are the uses of modern scheduling and cost-estimating software and online databases. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CEIE 290, 203 or U290.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Civil and Infrastructure Engr.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 395: Mentored Research in Civil and Environmental Engineering. 1-3 credits.
Introduces the scientific research process through hands-on experience: students are matched with faculty mentors who are actively involved in civil engineering-related research. Requires no less than 60 hours per semester working with mentors. Notes: Three credits of CEIE 395 may substitute for a maximum of 3 credits of CEIE 4xx technical elective credits with department permission. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: At least 60 credit hours applicable to the Civil and Infrastructure Engineering program.

Registration Restrictions:
At least 60 credit hours applicable to the Civil and Infrastructure Engineering program.

This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

CEIE 400: Civil Engineering Planning and Management. 3 credits.
Quantitative and qualitative analysis in planning, design, construction, and management of engineering systems and facilities. Introduces
policies, programs, and regulations that influence land development, history-enabling legislation, governing and regulating bodies, control of site plan development, and approval process. Examines structure, function, and purpose of urban design systems and how they can be achieved. Discusses physical relationships among development, land use, transportation, energy, communications, and water systems. Studies public- and private-sector urban development industry. Other topics include innovation, competition, new technology, and environmental issues. Requires design projects. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CEIE 340^C or L340) and (CEIE 360^C or L360). ^C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 401: Sustainable Land Development. 3 credits.
Introduces students to sustainable land development topics including low impact development, site resource conservation, ultra-low water design, deconstruction and materials reuse, healthy building design, green house gas reduction, zero and low energy design, and other topics related to sustainable practices in facilities and infrastructure design and construction. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

Specialized Designation: Green Leaf Focused Course
Registration Restrictions:
Required Prerequisites: (CEIE 355^C) and (CEIE 340^C). ^C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 402: Highway Design and Construction. 3 credits.
Provides a survey of the tools, techniques, and methods used by the various civil engineering disciplines to design and construct highways. Combines lectures, individual readings, and hands-on exposure to the tools and processes used in design and construction of highways. All facets of a project are covered including planning, project management, survey and mapping, preliminary design, geotechnical, pavements, environmental, hydraulics, bridge design, PS&E design, materials, and construction. Notes: Course meets off-campus at the Federal Highway Administration's Turner-Fairbank Highway Research Center: Concrete and Steel Materials, Structures, Hydraulics, Geotechnical, and Asphalt. Required Prerequisite: CEIE 310^C. ^C Requires minimum grade of C.

Students cannot enroll who have a major in Civil and Infrastructure Engr. Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 403: Experimental Methods in Civil Engineering. 3 credits.
Surveys common testing and laboratory experimental methods that civil engineers encounter in their professional practice and in research settings. Students fabricate specimens of civil engineering materials and conduct experiments in the following laboratories at the Federal Highway Administration’s Turner-Fairbank Highway Research Center: Concrete and Steel Materials, Structures, Hydraulics, Geotechnical, and Asphalt. Required Prerequisite: CEIE 310^C. ^C Requires minimum grade of C.

Students cannot enroll who have a major in Civil and Infrastructure Engr. Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 404: Professional Practice and Management in Engineering. 1 credit.
This course instills professional ethics and management principles, and prepares students for leadership roles in practice. Topics include code of ethics related to the public, clients, contractors, suppliers, employers, agreements, contracts, competitive bidding, the engineering profession, conflict of interest, legal responsibilities and case law; case studies in professional ethics; professional licensure; engineering vs. engineering management; personal development: managing cultural norms, time management, career and grad school, continuing education; public policy considerations in engineering practice; practical considerations in project management; effective communications with employers, employees, contractors, and clients; marketing, competitive bidding and project selection; conflict resolution; and managing small business. Students are prepared to appear for the Fundamentals of Engineering exam, and their preparation is assessed. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

Registration Restrictions:
Enrollment limited to students with a class of Junior, Senior Plus or Senior.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 412: Structural Steel Design. 3 credits.
Covers analysis and design of structural steel members including tension members, compression members, bolted and welded connections,
columns, beams, and beam-columns. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (CEIE 311\(^C\) or L311).

\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 413: Reinforced Concrete Design.** 3 credits.
Covers analysis and design of reinforced concrete members including beams, columns, slabs and footings; sizing of structural members for flexure and shear; determining serviceability limits; detailing reinforcing steel bars. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (CEIE 311\(^C\) or L311).

\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 414: Structural Modeling for Engineers.** 3 credits.
This course provides an introduction to the computer modeling tools that underpin modern structural engineering practice: finite element analysis. Emphasis a combination of theory and practical experience with modeling software. Modeling concepts and the assumptions that engineers must make while building finite element models will be discussed. Topics include applications from structural analysis, structural design, and dynamic vibration analysis. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Recommended Prerequisite:** CEIE 311.

**Registration Restrictions:**
Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 432: Foundation Design.** 3 credits.
Introduction to various principles and practices of geotechnical engineering including estimation of soil properties using in-situ tests, laboratory tests, and correlations. Course includes study of earth pressure theories as applied to the design of retaining walls, anchored bulkheads, and excavation bracing. Additional topics include retaining wall stability, bearing capacity and settlement of shallow foundations on sands and clays and design considerations and capacity analysis of deep foundations. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** CEIE 305\(^C\) or 331\(^C\).

\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 435: Engineering Geology.** 3 credits.
Introduction to formation and occurrence of earth materials: rock and soil; weathering processes, geomorphology, structural geology, interpreting topographic and geologic maps; field investigation fundamentals, field engineering properties of soil and rock; standards and terminology; rock mass engineering classification systems; subsurface water control, rock as a construction material; special case studies in foundations, such as sinkholes, waste impoundments, dam failures, earth spillway performance. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (CEIE 305\(^C\) or 331\(^C\)).

\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 440: Water Supply and Distribution.** 3 credits.
Analysis and design of public water supplies. Topics include: water supply evaluation; water quality; demand projections; hydraulic analysis of water distribution systems including line sizing, fire protection, pumps, valves, and storage; surge analysis; water modeling; concepts in management, business, and public policy of public water supplies; and federal, state, and local government laws and regulations related to public water systems. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (CEIE 340\(^C\) or U340).

\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 442: Open Channel Flow.** 3 credits.
Analysis and design of open channels. Topics include principles of open channel flow including conservation of mass, momentum and energy; flow regimes including uniform, gradually varied, rapidly varied, and unsteady flows; sediment transport; channel design; and modeling and computer applications in open channel analysis and design. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (CEIE 340\(^C\) or U340).

\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 454: Sustainable Water Resources Infrastructure in Developing Countries. 3 credits.
This course addresses the principles of infrastructure engineering and planning in developing countries, with a focus on sustainable technologies for rural and small-scale water supply and wastewater treatment. Students will design simple, reliable water supply and sanitation systems for developing countries with limited human and material resources and with regard to local customs and socio-cultural public health and economic factors. Offered by Civil, Environ & Infrast Engr (p. 1177). Limited to two attempts.

Recommended Prerequisite: CEIE 355C.
C Requires minimum grade of C.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 457: Remote Sensing in Civil Engineering. 3 credits.
This course provides an introduction to the fundamentals of remote sensing. It will focus on how remote sensing data are acquired, displayed, restored, enhanced, and analyzed. The course will be taught with an emphasis on remote sensing techniques as a tool for engineering practices, such as regional planning, site investigation, terrain mapping, urban infrastructure development, water resources engineering, and flood monitoring. Offered by Civil, Environ & Infrast Engr (p. 1177). Limited to two attempts.

Recommended Prerequisite: CEIE 355C.
C Requires minimum grade of C.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 461: Traffic Engineering. 3 credits.
Elements of traffic engineering analysis; system components of traffic operations: driver, vehicle, and roadway; traffic flow design elements including volume, density, and speed; intersection design elements including traffic control device warrants, signal timing, delay, capacity, and accident countermeasures; and terminal design elements including inflow, outflow, and circulation. Offered by Civil, Environ & Infrast Engr (p. 1177). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 462: Urban Transportation Planning. 3 credits.
Technical and qualitative aspects of urban transportation planning process. Topics include urban travel characteristics and data collection methods; urban transportation modeling system, including land use, trip
CEIE 472: Building Information Modeling. 3 credits.
Virtual design and construction techniques are covered using modern 3D Building Information Modeling (BIM) software. Historical and technological basis for virtual building and infrastructure design are presented. Design and construction coordination are emphasized using clash detection, conflict management, constructability analysis, specification mapping, and asset management. Industry supported model component databases are used with commercial software design environments for hands-on simulated design and construction projects. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CEIE 370C or L370).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CEIE 477: Construction Planning and Scheduling. 3 credits.
This course will help students establish basic and advanced construction management skills with a focus on planning and scheduling of construction projects. Different procedures for construction control and developing a practical methodology appropriate for civil, environmental, and infrastructure engineering applications will be explored. An introduction to industry terminology, basic and advanced scheduling procedures, building work breakdown structures, activity identification, sequencing and logical ties, different levels schedule development using the critical path method, understanding schedule restrictions, schedule calculations, schedule resource management, and maintaining schedule updates will be covered. An emphasis will be placed on using computer-

Registration Restrictions:
Required Prerequisite: CEIE 370C or (CEIE 360C or L360).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
based scheduling software. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** CEIE 370\(^C\).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 490:** *Senior Design Project*. 3 credits.
Capstone design experience. Integrates all design fundamentals employed by a typical civil engineering design team. Major team efforts include land use, transportation, water and sewerage, storm water, site analysis, economic and regulatory considerations, sectioning, grading, and siting. Students focus on teamwork, interdisciplinary interaction, and tradeoff decision making. Design team analyzes all aspects of a major urban project, develops solutions to design problems, and produces project report and oral presentation. Design effort completed and report is prepared, presented, and evaluated. Primary course goal is to produce design for contemporary civil infrastructure project. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts.

**Mason Core:** Capstone, Synthesis (p. 142)

**Recommended Prerequisite:** Three 4xx level technical electives.

**Registration Restrictions:**
**Required Prerequisites:** (CEIE 301\(^C\), or L301) and (CEIE 311\(^C\), or L311) and (CEIE 340\(^C\), or L340) and (CEIE 355\(^C\), or L355) and (CEIE 360\(^C\)) and (CEIE 305\(^C\), L305, 331\(^C\), or L331) and (CEIE 370\(^C\)) and (CEIE 304). \(^C\) Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 497:** *Applied Engineering Abroad*. 3 credits.
Introduces students to applications of engineering processes outside USA. The students will gain hands-on project management, critical thinking, intercultural and career skills by exploring engineering aspects such as auto assembly, airliner manufacturing, metropolitan infrastructure, and bridge designs. By visiting technology museums, students will learn to appreciate the rich history of the country’s technology and manufacturing. Offered by Civil, Environ & Infrastr Engr (p. 1177). Limited to two attempts. Equivalent to ME 497, SYST 497.

**Mason Core:** Global Understanding (p. 142)

**Registration Restrictions:**
Enrollment limited to students with a class of Junior, Senior Plus or Senior.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 498:** *Independent Study in Civil Engineering*. 1-3 credits.
Directed self-study of special topics of current interest. Notes: May be repeated if topics substantially differ. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the term.

**Recommended Prerequisite:** Permission of the Department Chair.

**Registration Restrictions:**
Enrollment limited to students with a class of Junior or Senior.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CEIE 499:** *Special Topics in Civil Engineering*. 1-3 credits.
Varies with nature of topic. Topics of special interest to undergraduates. Notes: May be repeated if topics substantially differ. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the term.

**Registration Restrictions:**
Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**CEIE 501:** *Sustainable Development*. 3 credits.
Introduction to sustainability concepts and terminology including the development and use of sustainability indices. Exploration of sustainability tools and frameworks such as the Leadership in Energy and Environmental Design (LEED) Green Building Rating System, American Institute of Architects Sustainable Design Resources Guide, and the Natural Step (TNS) Framework. Methods for evaluation of sustainable sites, water/energy efficiency, sustainable materials and resources, and indoor air quality are presented. Designated a Green Leaf Course. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Specialized Designation:** Green Leaf Focused Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 510:** *Geographic Information Systems in Engineering*. 3 credits.
Introduces geographic information systems (GIS) and their application in environmental, transportation, land-use planning, and other engineering-related decision situations. Introduces methods and technologies for
spatial data acquisition, specification, storage, manipulation, query, thematic analysis, presentation, and application in the design process. Introduces relationships, integration of GIS with computer-aided design and global positioning system. Hands-on projects. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Knowledge of computer programming and databases or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 513: Reinforced Concrete Design. 3 credits.
Covers analysis and design of reinforced concrete members including beams, columns, slabs and footings; sizing of structural members for flexure and shear; determining serviceability limits; detailing reinforcing steel bars. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: CEIE 311.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 524: Introduction to Bridge Engineering. 3 credits.
A balanced theoretical and practical insight into the art and science of bridge engineering. Various methodologies of bridge design and evaluation are investigated, including constructability reviews. Bridges of steel, reinforced concrete, and pre-stressed concrete materials are included. Short-span composites; major innovation and low cost solutions targeted at aging infrastructure. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE; CEIE 512 or CEIE 513 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 525: Structural Evaluation and Rehabilitation. 3 credits.
Structural condition survey and evaluation for strength and serviceability of existing structures including foundation elements; older building practices and materials; criteria for rehabilitation; retrofit techniques for change in function, loading, and seismic forces. Historic preservation issues. Repair, remediation, and structural strengthening methods and current trends. Carbon fiber external P.T. Material selection criteria, including mechanical and environmental factors. Cost/value feasibility analysis; estimating remedial construction costs; engineering oversight of rehabilitation work. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 526: Advanced Steel Design. 3 credits.
Behavior, strength, and design of vertical steel structures using the LRFD approach; plate girders, composite beams, welded built-up columns, bolted and welded connections, beam-columns, and torsion; introduction to plastic analysis and its application to members and vertical structures; erection procedure and methods field inspection issues; unique properties of high strength steels. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE; CEIE 512 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 527: Pre-stressed Concrete. 3 credits.
Strength, behavior, analysis, and design of pre-stressed concrete members, vertical building structures, and bridges, with emphasis on pre-tensioned, precast construction, and post-tensioned construction; basics of segmental concrete bridges, cable-stayed bridges, and spliced-girder concrete bridges; continuous span theory; protection of pre- & post-tensioned systems; secondary effects. Composite Portland cement with cast-in-place topping; precast as a stay-in-place system; connection detailing; durability issues; advantages in a marine environment. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE; CEIE 513 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 531: Earth Retaining Structures and Slope Stability. 3 credits.
Slope stability; retaining wall design and associated construction issues of gravity walls, conventional concrete retaining walls, mechanically stabilized walls, braced and tiedback excavation support systems, and soil nailing walls; guidelines for the selection of retention method for permanent and temporary conditions. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE;

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 532: Foundation Design. 3 credits.
Introduction to various principles and practice of geotechnical engineering including estimation of soil properties using in-situ tests, laboratory tests, and correlations. Course includes the study of earth pressure theories as applied to the design of retaining walls, anchored bulkheads, and excavation bracing. Additional topics include retaining wall stability, bearing capacity and settlement of shallow foundations on sands and clays and design considerations for deep foundations. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 533: Engineering Geology. 3 credits.
Introduction to formation and occurrence of earth materials-rock and soil; weathering processes, geomorphology, structural geology, interpreting topographic and geologic maps; field investigation fundamentals, field engineering properties of soil and rock; standards and terminology; rock mass engineering classification systems; subsurface water control; rock as a construction material; special case studies in foundations, such as sinkholes, waste impoundments, dam failures, earth spillway performance. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 540: Water Supply and Distribution. 3 credits.
Analysis and design of public water supplies. Topics include supply evaluation; water quality and quantity requirements; treatment requirements and methods; hydraulic analysis of water distribution systems including line sizing, fire protection, pumps, valves, and storage; sustainability; security; concepts in management, business, and public policy of public water systems; and federal, state, and local government laws and regulations related to public water systems. Requires laboratory, field work on selected topics. Designated a Green Leaf Course. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: Course in hydraulics or fluid mechanics

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 542: Open Channel Flow. 3 credits.
Analysis and design of open channels. Topics include principles of open channel flow including conservation of mass, momentum and energy; flow regimes including uniform, gradually varied, rapidly varied, and unsteady flows; sediment transport; channel design; modeling and computer applications in open channel analysis and design. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: A course in hydraulics or fluid mechanics.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 550: Environmental Engineering Systems. 3 credits.
Introduces the concepts and applications of systems analysis in environmental engineering. Tools and methodologies of systems analysis are applied to improve the understanding and resolution of complex environmental engineering problems related to air, soil, and water quality and pollution. Scientific, engineering, political, social, legal, regulatory, medical, economic, and financial impacts of environmental engineering decisions are considered. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: CEIE 355.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 553: Water and Wastewater Treatment Processes. 3 credits.
Studies unit processes used in the treatment of water and wastewater systems. Topics include water quality, regulatory requirements, physical unit processes, chemical treatment processes and an introduction to biological treatment processes as applied to a range of community sizes. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: CEIE 355.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 556: Environmental Law. 3 credits.
Introductory course in the study of environmental laws as they pertain to urban systems infrastructure management. Reviews the National
Environmental Policy Act, Clean Air Act, Clean Water Act, Safe Drinking Water Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, and other environmentally related legislation. Also reviews laws for allocation of surface and groundwater supplies, and reviews environmental law databases. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduation Deadline Extended, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 557: Remote Monitoring Techniques for Civil Engineering Applications.** 3 credits.
This course covers the basic physics and applications of remote sensing, remote sensing systems (satellite, airborne, and ground-based), and atmospheric radiative transfer. The course focuses on remote sensing techniques as a tool for engineering practices and presents an exhaustive plethora of remote sensing applications for problem solving in civil, environmental, and infrastructure engineering. Examples include (but are not limited to) regional planning and site investigation, terrain mapping and urban infrastructure development, water resources engineering, transportation network analysis, landslide analysis, flood monitoring, and bridge inspection. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** Graduate standing in CEIE.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 560: Public Transportation Systems.** 3 credits.
Analyzes public transportation systems in terms of their role in urban transportation. Topics include history of public transportation in the United States, quantitative performance attributes of different modes, analytical techniques for planning and operation, and management and administrative concepts. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** CEIE 365.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 561: Traffic Engineering.** 3 credits.
Covers elements of traffic engineering analysis; system components of traffic operations: driver, vehicle, and roadway; traffic flow design elements including volume, density, and speed; intersection design elements including traffic control device warrants, signal timing, delay, capacity, and accident countermeasures; and terminal design elements including inflow, outflow, and circulation. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** CEIE 365.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 562: Urban Transportation Planning.** 3 credits.
Covers technical and qualitative aspects of urban transportation planning process. Topics include urban travel characteristics and data collection methods; urban transportation modeling system, including land use, trip generation and distribution, mode choice, and trip assignment models; site traffic impact studies; environmental impacts; project and plan evaluation; and technology options for urban transport. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** CEIE 360.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 571: Construction Administration. 3 credits.
Examines the principals of project planning and administration using modern specification and project delivery techniques. The role of the project manager as facilitator, constructability advisor, and on-site administrator is emphasized. Project risk transfer, market conditions, and legal requirements are explored in the construction contract environment. Other topics include green specifications, design-build delivery, job order contracting, turnkey construction, and public-private partnerships. Appropriate for students, engineering and design professionals, project managers, contract administrators, and owners interested in the planning and administration needs of construction. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 572: Building Information Modeling. 3 credits.
Virtual design and construction techniques are covered using modern 3D Building Information Modeling (BIM) software. Historical and technological basis for virtual building and infrastructure design are presented. Design and construction coordination are emphasized using clash detection, conflict management, constructability analysis, specification mapping, and asset management. Industry-supported model component databases are used with commercial software design environments for hands-on simulated design and construction projects. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 574: Construction Computer Application and Informatics. 3 credits.
Computer-aided information management in construction, including construction decision-support systems, data-driven decision support, relational databases, data manipulation, data visualization, and application of data mining techniques. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 575: Design for Constructability. 3 credits.
Systems design of structures to consider foundations, structures and constructability; foundation alternatives; structural design to simplify erection; prefabrication, modulation of structures; material handling on a construction site; crane selection and placement; temporary works. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 576: Construction Cost Estimating. 3 credits.
Overview of cost estimating and financial management in the modern construction industry. Techniques and software applications for construction take-offs, bidding, bonding, insurance, equipment ownership, material and labor costing. Additional topics include: cost recovery planning, budgeting, forecasting, acquisition, cash flow management, managerial accounting concepts, and taxes. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 578: Construction Planning and Scheduling. 3 credits.
This course will help students establish basic and advanced construction management skills with a focus on planning and scheduling of construction projects. Different procedures for construction control and developing a practical methodology appropriate for civil, environmental, and infrastructure engineering applications will be explored. An introduction to industry terminology, basic and advanced scheduling procedures, building work breakdown structures, activity identification, sequencing and logical ties, different levels schedule development using the critical path method, understanding schedule restrictions, schedule calculations, schedule resource management, and maintaining schedule updates will be covered. An emphasis will be placed on using computer-based scheduling software. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

CEIE 601: Infrastructure Modeling. 3 credits.
Concepts of modeling for infrastructure engineering systems. Covers deterministic and stochastic modeling, multi-objective decision-making, and solution algorithms for civil infrastructure problems. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Registration Restrictions:
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 603: Research Methods in Civil Engineering. 3 credits.
Familiarizes students with the process of rigorous research in civil engineering by providing a strong background in research methods, such as critical thinking, experimental design (idea, concept, design, development), writing a scientific article, and interpretation of results (uncertainty quantification, assumptions, etc.). Introduces common quantitative methods in civil engineering research such as descriptive and inferential statistics, data assimilation, and hypothesis testing. Encourages critical thinking and collaboration among students from different civil engineering disciplines. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate standing in CEIE.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 605: Risk and Uncertainty in Civil Engineering. 3 credits.
Probability and statistics topics for analysis of infrastructure systems. Includes Bayesian decision theory, decision trees, Monte Carlo analysis, stochastic models, simulation, and economic analysis of infrastructure projects and systems. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: STAT 344.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 607: Public Infrastructure Management and Finance.** 3 credits. Current and projected outlook for managing and financing public works infrastructure including, transportation, public utilities, water and waste water facilities, energy, and public buildings; Infrastructure management including the impact of built infrastructure on the environment, tracking and improving infrastructure performance, government regulations, emerging technologies, social concerns, and the impacts of disasters; Infrastructure finance including public and private sources of capital, special financing districts, bond markets, federal and state grants, public-private partnerships, and design-build project delivery. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 611: Advanced Structural Analysis.** 3 credits. Application of the stiffness method in planar trusses, beams, planar frames, curved beams, and three-dimensional structures; Introduction to non-linear structural analysis with emphasis on geometric non-linearity. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 612: Structural Mechanics.** 3 credits. Covers the foundations of structural modeling and theories of elasticity. Topics include: multidimensional theories of stress and strain, governing equations of elasticity, numerical solution techniques, material failure criteria, basics of nonlinear analysis. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 619: Special Topics in Structural Engineering.** 0-3 credits. Advanced topics in recently developed areas of structural engineering. May be repeated for credit when topics vary. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the term.

**Recommended Prerequisite:** Graduate standing in CEIE or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
CEIE 620: Intelligent Systems in Civil Engineering. 3 credits.
Covers autonomous systems in civil engineering across CEIE sub-disciplines. Topics include: sensing & instrumentation, data analytics, and machine learning applications. Laboratory exercises with sensing and data acquisition systems, as well as a student-driven class project. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Recommended Prerequisite: Graduate Standing in CEIE.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 623: Advanced Reinforced Concrete Design. 3 credits.
Covers the behavior, analysis and design of two-way reinforced concrete slabs; design of long columns including slenderness effects; structural design of isolated footings, combined footings and pile caps; design of deep beams using the strut-and-tie models; introduction bearing, retaining and shear wall designs. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Reinforced Concrete Design.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 625: Advanced Soil Mechanics. 3 credits.
Consolidation of soil: primary and secondary; and rate. Soil strength in the framework of Critical State Soil Mechanics: normally consolidated, lightly and heavily overconsolidated, drained and undrained, elastic and plastic deformation. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 636: Sources of Geotechnical Data. 3 credits.
Resources for conducting desk top studies; tools for field investigations; subsurface investigations (options and selection of techniques); laboratory testing of soil and rock; accepted testing procedures; typical values; empirical relationships between properties and testing techniques; risk and uncertainty; use of lab testing, insitu strength testing, and empirical methods in design; identifying slickensides. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.
CEIE 638: Advanced Foundation Design. 3 credits.
Design of shallow and deep foundations for civil engineering structures, including time rate of consolidation settlement, stress distribution, elastic settlement, and bearing capacity. Driven piles and drilled shafts subjected to axial and lateral loading, both single and group action. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** Graduate standing in CEIE.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 639: Special Topics in Geotechnical Engineering. 1-3 credits.
Advanced topics in recently developed areas of geotechnical engineering. May be repeated for credit when topics vary. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the term.

**Recommended Prerequisite:** Graduate standing in CEIE or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 641: Water Resources Engineering I: Principles and Practice. 3 credits.
Introduction to the principles of hydrology and hydraulics and their application to the planning, design and management of modern water resources. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** Graduate standing in CEIE; CEIE 340 or equivalent.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 642: Flood Hazards Engineering. 3 credits.
Introduction to the principles of flood hazards engineering. Theory and practice of the application of hydrology and hydraulics to flood hazards delineation. Theory and practice of the application of geospatial analyses to support flood hazards modeling. Application of computational methods to support planning, design and management of flood hazards. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** Graduate standing in CEIE and CEIE 340 and CEIE 340 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 643: Coastal Flood Hazards. 3 credits.
Introduction to the theory and practice of coastal flooding and hazards engineering. Topics include the theory of hurricane storm surges, tides, coastal hydrodynamics, waves and coastal processes. Use of the Surface Water Modeling System (SMS) and the Advanced Circulation Model (ADCIRC) for coastal flooding analysis. Introduction to High Performance Computing (HPC) modeling of hurricane storm surge. Introduction to Geographic Information Systems (GIS) applications to support coastal flood modeling and hazard analysis. Applications of coastal engineering to support coastal flood mapping and hazard prevention. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** Graduate Standing in CEIE.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 644: *Groundwater Systems Modeling*. 3 credits.
Introduces groundwater hydrology and modeling, including quantity and quality aspects. Topics include characterization of subsurface regime; well hydraulics; consideration of two-dimensional steady and unsteady-state flows; exploration of modeling approaches; simulation and optimization modeling; contaminant transport; parameter estimation; and design of systems to control groundwater quantity and quality. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 649: *Special Topics in Water Resources Engineering*. 0-3 credits.
Advanced topics in recently developed areas of water resources engineering. May be repeated for credit when topics vary. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the term.

**Recommended Prerequisite:** Graduate standing in CEIE or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 658: *Water Quality*. 3 credits.
This course addresses the physical, chemical and biological principles that define water quality. Mathematical and chemical models are formulated and employed to predict fate and transport of contaminants in both surface and groundwater. Laboratory and field-work are required. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 659: *Hazardous Waste*. 3 credits.
Physical, chemical and biological properties of hazardous waste; abiotic and biotic transformation of hazardous wastes and their fate in the environment; design of remediation schemes including incineration, landfill, bioremediation and other physical and chemical stabilization processes; principles of risk assessment to select and optimize hazardous waste treatment; methods and strategies for hazardous waste reduction. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Addresses the fundamental aspects of microbial physiology and ecology and their application to environmental engineering processes. Specific topics include cell structure and function, energetics, metabolism, enzyme and growth kinetics, microbial/environmental interactions (e.g. interactions with organic pollutants), biogeochemical cycles, and an introduction to engineering applications including bioremediation, wastewater treatment, biosensors and microbial fuel cells. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.
CEIE 662: Travel Demand Modeling. 3 credits.
Covers elements of Travel Demand Modeling at considerable detail. Design and execution of travel surveys; analysis of survey data; economic and demographic data and analysis; development of classification, regression and discrete choice models for four-step and activity based travel demand models; spatial analysis of data; matrix methods; validation and calibration of models; traffic and transit assignment methods and their application; select-link analysis. Hands-on modeling assignments. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 663: Intelligent Transportation Systems. 3 credits.
Advanced transportation system operations and safety through the use of wireless and wireline communications; integrated transportation systems; in-vehicle technologies; industry standards; and systems architecture. Provides skills to apply advanced technologies to transportation systems to improve operational and safety performance. Provides nontraditional tools to address issues of congestion and improved safety performance. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: CEIE 561 or 562.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 664: Transportation Engineering and the Environment. 3 credits.
Introduction to transportation and air quality; Clean Air Act; greenhouse gases, climate change, and modeling for greenhouse gases; travel activity; The NEPA process for transportation projects; road transportation and noise; noise abatement. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 665: Travel Survey Methods and Data Analysis. 3 credits.
Covers the concept and practice of travel survey methods; national household travel survey; Census transportation survey and products; travel diary based, roadside, mail-in and web-based and GPS-based travel surveys; longitudinal vs. cross-sectional surveys; stated-preference survey; interactive and adaptive survey method; transit survey methods; special generator surveys; sampling approach and representativeness analysis; econometric data analysis; panel data; self-selection issues; other data mining methods; data security, privacy, IRB process, and ethics. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 667: Multi-modal Transportation Systems. 3 credits.
Topical coverage of freight and logistics; non-motorized transportation considerations; and public transit planning. Freight topics include demand and supply modeling concepts; freight flow data sources; and truck size and weight policies. Bicycle and pedestrian planning considering traveler response to facility and policy improvements and identifying common resources for addressing non-motorized project concerns. Public transportation planning coverage including mass transit technology typologies, corridor planning and operations concepts, and finance and public policy issues, including environmental justice. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 668: Transportation Economics.** 3 credits.
Application of micro- and macro-economic theories to transportation system analysis; interaction between transportation system, land use, and regional economics; mobility, accessibility, and system reliability; market equilibrium; pricing, willingness to pay, and welfare analysis; cost benefit analysis; project finance. Offered by Civil, Environ & Infratr Engr (p. 1177). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 669: Special Topics in Transportation Engineering.** 0-3 credits.
Advanced topics in recently developed areas of transportation engineering. May be repeated for credit when topics vary. Offered by Civil, Environ & Infratr Engr (p. 1177). May be repeated within the term.

**Recommended Prerequisite:** Graduate standing in CEIE or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 679: Special Topics in Construction Management.** 0-3 credits.
Advanced topics in recently developed areas of construction management. May be repeated for credit when topics vary. Offered by Civil, Environ & Infratr Engr (p. 1177). May be repeated within the term.

**Recommended Prerequisite:** Graduate standing in CEIE or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CEIE 683: Water and Wastewater Systems Security.** 3 credits.
Examines overall security of water and wastewater systems. Covers theory and methods to define water and wastewater infrastructure as physical and organizational systems. Explores concepts of infrastructure systems security; identifies actors, interactions in organizational infrastructure, and threats to water and wastewater infrastructure; describes behavior of physical and organizational infrastructures under stress; examines history of threats or attacks against water and wastewater systems; and explores evolution of design, operations, and maintenance paradigms in response to changes in threats. Covers proactive responses to security threats through vulnerability assessments, and models of organizational and physical infrastructure system. Offered by Civil, Environ & Infratr Engr (p. 1177). May not be repeated for credit.

**Recommended Prerequisite:** BS in Civil Engineering or CEIE 440 and CEIE 455.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 686: Transportation System Security and Safety. 3 credits.
Focuses on critical transportation systems infrastructure and operations, and technologies for predicting and managing damage and disruptions caused by potential threats, including natural and technological disasters and terrorist threats. Includes asset management, methodologies for assessing vulnerabilities, potential impact of damage and disruption, applying state-of-the-art technologies and R&D processes for harnessing best analysis methods, and technologies for hardening transportation infrastructure systems. Includes sensing and surveillance using satellite and aerial remote sensing imagery, application of GIS and spatial information technologies, information and communication, intelligent transportation systems, hardening systems, and making intelligent choices for implementing technology advances to transportation security and safety. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: BS in Engineering, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 690: Topics in Civil Engineering. 3 credits.
Topics not covered in the regular civil engineering offerings. Notes: Course content may vary each semester. Course may be repeated with change in topic. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the term.

Specialized Designation: Green Leaf Related Course

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Introduces concepts, applications, and tools of systems analysis for water resources planning, management, and design. Problems including river basin planning, real-time hydrosystem operations, water quality management, capacity expansion, urban drainage network design, and sanitary sewer design used to illustrate applications of systems analysis. Tools include optimization and simulation modeling and knowledge-based systems. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: Graduate Standing in CEIE; CEIE641 or equivalent.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 762: Network Models for Transportation Planning. 3 credits.
Covers network models for transportation systems analysis - theory, mathematical structure, and applications of equilibrium, iterative, incremental, dynamic and stochastic equilibrium models. Also covers data structures and heuristic methods for computer implementation of various algorithms such as shortest path and direction search algorithms; specialty network topics such as tracking and prohibition of turn movements, k-shortest path algorithms and select-link analysis. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: CEIE 562 or 660; CEIE 601.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
CEIE 763: Discrete Choice Analysis in Transportation. 3 credits. Utility theory and individual choice behavior; Binary choice model; Multinomial choice model; Characteristics of Probit and Logit models; Aggregate forecasting techniques; Travel survey and sampling; Test and choice of model structure; Correlation and nested Logit Model, Advanced models and estimation techniques; Travel, route choice and car ownership models. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 767: Traffic Engineering Modeling and Analysis. 3 credits. Covers fundamentals of traffic flow theory; shock-wave analysis; queuing theory; macroscopic traffic flow models on freeway and arterials; fundamentals of traffic simulation; car following models; network analysis based on traffic simulation models; and developing skills to select most appropriate model for given scenarios. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Prerequisite: CEIE 561.

Recommended Corequisite: CEIE 601.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 795: Civil and Infrastructure Engineering Seminar. 0 credits. Invited speakers, faculty, and CEIE graduate students lecture on current topics and research. Fulfills seminar requirement for MS in civil and infrastructure engineering. Notes: Students must enroll in CEIE 795 each semester (fall and spring) for the duration of their MS studies. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree.

Recommended Prerequisite: CEIE 795.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CEIE 796: Directed Reading. 1-3 credits. Reading on specific topic under direction of faculty member. Notes: May be repeated with change in topic. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree.

Recommended Prerequisite: Graduate standing and permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 798: Research Project in Civil Engineering. 3 credits. Analyzes and investigates contemporary problem in civil, environmental, and infrastructure engineering. Requires prior approval by faculty member who supervises student's work. Notes: Written report also required. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Recommended Corequisite: CEIE 795.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Thesis

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 799: Master's Thesis. 1-6 credits. Research project chosen and completed under guidance of graduate faculty member that results in technical report acceptable to three-faculty-member committee, and an oral defense. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree.

Recommended Prerequisite: 18 credits of graduate-level course work and permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)
800 Level Courses

CEIE 800: Civil, Environmental, and Infrastructure Engineering Colloquium. 1 credit.
Seminar series required of Civil and Infrastructure PhD students. Features variety of speakers from universities, government, and private sectors. Topics include civil engineering technologies, research advancements, and policies. Doctoral students take 2 credits of CEIE 800 and make a presentation of their dissertation research at the seminar. No more than 1 credit per semester may be taken. Students eligible to register upon successful completion of qualifying exams. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree for a maximum 2 credits.

Registration Restrictions:
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 890: Special Topics in Urban Transportation. 3 credits.
Includes traffic safety analysis, simulation in transportation, intelligent transportation systems, advanced public transportation systems, congestion and travel demand management, geographic information systems and information technology, and innovative refinancing and public-private partnerships. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: CEIE 560 and 660 or equivalent; or permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 892: Special Topics in Environmental and Water Resource Systems Engineering. 3 credits.
Possible topics include studies in waste minimization; pollution prevention; hazardous waste management; wastewater management; air pollution control; solid waste management; environmental decision making; sustainability; water resource and environmental economics; wetlands management, design and construction; groundwater contamination modeling; stochastic hydrology; river basin planning and management; and water quality modeling. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree for a maximum 6 credits.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: CEIE 601

Registration Restrictions:
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 894: Design and Inventive Engineering. 3 credits.
Topics include Fundamentals: successful intelligence and creative intelligence, creative class, the Medici Effect, the Renaissance Man and Da Vinci's Seven Principles, engineering creativity; Design Engineering: system designing and architecting, designing as search, evolutionary designing, constraint search, constructive induction, Axiomatic and Inferential Design Theories; Inventive Engineering: Brainstorming, Synectics, Morphological Analysis, TRIZ, Visual Thinking, Inventive Design in Practice; Project Presentations. Notes: This is a transdisciplinary course focused on creativity in engineering and science. Open to all graduate students in the Volgenau School of IT and Engineering; graduate students from other schools are encouraged to register with the instructor's permission. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CEIE 896: Civil Engineering Research Topics. 3 credits.
Reading on specific topic under direction of faculty member. May be repeated with change in topic. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission into CEIE PhD program, or permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

900 Level Courses

CEIE 990: Civil and Infrastructure Dissertation Topic Presentation. 1 credit.
Opportunity for PhD students to present research proposal for critique. Covers presentation of research topic for PhD in Civil and Infrastructure Engineering. Students complete dissertation research proposal. May be repeated with change in topic, but degree credit is given only once. Offered by Civil, Environ & Infrastr Engr (p. 1177). May not be repeated for credit. Equivalent to STAT 990.
Recommended Prerequisite: Graduate Standing; completion of all course work required for PhD in Civil and Infrastructure Engineering or permission of instructor.

Registration Restrictions:
Enrollment limited to students in the VS-PHD-CEIE program.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Research
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CEIE 998: Doctoral Dissertation Proposal. 1-12 credits.
Work on research proposal that forms basis for doctoral dissertation. May be repeated for credit. Notes: No more than 24 credits of CEIE 998 and 999 may be applied to doctoral degree requirements. Offered by Civil, Environ & Infrastr Engr (p. 1177). May be repeated within the degree.

Recommended Prerequisite: ENGL 101/ENGH 101, or equivalent or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLAS 240: Greek and Latin Elements in English. 3 credits.
Studies formation of English vocabulary derived from Greek and Latin prefixes, stems, and suffixes to increase word power in English (vocabulary, style). Special emphasis on bioscientific, medical, and legal terminology. Intended for native and non-native speakers of English. Literary texts illustrate word analyses, vocabulary uses. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: ENGL 101/ENGH 101, or equivalent or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLAS 250: Classical Mythology. 3 credits.
Illustrates role of classical myths in classical and modern literature and art. Notes: Coursework in English. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Literature (p. 142)

Recommended Prerequisite: ENGL 101/ENGH 101, equivalent, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLAS 260: The Legacy of Greece and Rome. 3 credits.
Introduces history, culture, and literature of Greece and Rome through close readings of central passages from classical literature dealing with some of the most important aspects of human existence. Illustrates importance of classical antiquity for the Western tradition. Notes: Coursework in English. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Literature (p. 142)

Recommended Prerequisite: ENGL 101/ENGH 101 or equivalent or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses
CLAS 330: Roman Law and Society. 3 credits.
Introduces the Roman legal system, from the Law of the Twelve Tables to Justinian’s Digest. Explores the fundamental concepts of Roman Law and its importance for Roman society and the legal history of the West. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLAS 340: Greek and Roman Epic. 3 credits.
Examines development of classical epic as genre, from beginnings with Homer to transformations in the works of later Greek and Roman authors. Notes: Coursework in English. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Literature (p. 142)

Recommended Prerequisite: ENGL 101/ENGH 101 or equivalent or permission of instructor.

Schedule Type: Lecture
**Climate Dynamics (CLIM)**

### 100 Level Courses

**CLIM 101: Global Warming: Weather, Climate, and Society.** 3 credits.  
Survey of the scientific and societal issues associated with weather and climate variability and change. Examines physical phenomena observed in the Earth's weather and climate, providing sufficient scientific and technical background to enable students to critically examine arguments being discussed by policymakers and the public at large. Also reviews the current debate on climate change from a scientific point of view with a focus on those aspects that have the largest potential impact on global society. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Mason Core: Natural Science Overview, Encore: Sustainability (p. 142)**  
**Specialized Designation: Green Leaf Related Course**

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**CLIM 102: Introduction to Global Climate Change Science.** 4 credits.  
The scientific basis of computer models that simulate past and present climate and predict future climate change; How complex models are built, tested, and interpreted to better understand physical, chemical, and biological processes; how uncertainty is managed. Students conduct laboratory experiments through an online interface and apply results to policy and planning. Designated a Green Leaf Course. Notes: Computer models are used in the lab. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Mason Core: Natural Science Overview, Encore: Sustainability (p. 142)**  
**Specialized Designation: Green Leaf Related Course**

**Recommended Prerequisite:** Basic math skills (Geometry, Algebra).

**Schedule Type:** Laboratory, Lecture

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**CLIM 111: Introduction to the Fundamentals of Atmospheric Science.** 3 credits.  
An overview of the Earth's atmosphere, its history, and the physical and chemical processes that determine its characteristics. The focus is on key concepts from thermodynamics, radiation, chemistry, and dynamics that are essential for understanding the state, variability, and long term evolution of the atmosphere, especially in the context of comparisons with other planetary atmospheres. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to PHYS 111.

**Mason Core: Natural Science with Lab, Encore: Sustainability (p. 142)**  
**Specialized Designation: Green Leaf Related Course**

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)
300 Level Courses

CLIM 301: Weather Analysis and Prediction. 4 credits.
Large-scale behavior of mid-latitude weather systems. Includes coupling of synoptic motion to mesoscale processes that lead to significant weather events. Introduces the observational network, numerical weather models, and prediction. Laboratory portion gives practical experience in weather analysis, prediction, and technology currently used for visualization and analysis. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Recommended Prerequisite: MATH 113 or equivalent; one of CLIM/PHYS 111/112 or EOS 121 or GGS 121.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 312: Physical Climatology. 3 credits.

Recommended Prerequisite: CLIM/PHYS 111/112 OR GGS 121; and PHYS 243,244, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 319: Air Pollution. 3 credits.
Description of major types of air pollution and introduction to how their characteristics are influenced by interaction with the atmosphere. Topics include sources and distribution of pollution from local to global scales, effects of radiation and wind on pollution, modeling of plume dispersion, and pollution effects on climate. Designated a Green Leaf Course. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Recommended Prerequisite: CLIM 111 or GGS 121.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 390: Topics in Climate Research. 1-4 credits.
Selected topics not covered in fixed content courses. May be included for credit by AOES majors in the 45 credits of courses required for BS degree. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 15 credits of AOES courses within concentration.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

CLIM 408: Senior Research. 3 credits.
Independent research under guidance of faculty member on a research project in numerical, experimental, observational, or theoretical atmospheric or climate-related research. A written report on the project is required. Notes: May be repeated with department permission. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 15 credits of AOES courses within major.

Schedule Type: Research

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 409: Research Internship. 3 credits.
On-the-job experience for AOES majors in industry or government laboratories, including summer research programs. Students work in observational, experimental, or theoretical research, and prepare a written report at the end of the internship. Notes: May be repeated with department permission. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 75 credits. 15 credits of courses in major and permission of department.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 411: Atmospheric Dynamics. 3 credits.
Observational bases and fundamentals of fluid dynamic principle for understanding atmospheric motions across multiple spatial and temporal scales; covers basic conservation laws of mass, momentum, and energy; concepts of circulation and vorticity; balanced atmospheric flows, e.g. geostrophic wind and shear; thermal wind; quasi-geostrophic and isentropic potential vorticity analysis for mid-latitude cyclones and fronts. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Recommended Prerequisite: CLIM 111 and MATH 213, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 412: Physical Oceanography. 3 credits.
Reviews global patterns of temperature, salinity, currents and waves in the world’s oceans and how these patterns influence marine biota, climate, and human activity. Introduces key concepts which explain physical features of the ocean ranging from microscopic turbulence to global circulation. Designated a Green Leaf Course. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to GEOL 412.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: MATH 113 or 115 and PHYS 160 or 253; or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 429: Atmospheric Thermodynamics. 3 credits.
Thermodynamics of the atmosphere, properties of dry and moist air, air parcel as a thermodynamic system, atmospheric stability and convection, cloud formation and stability indices. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Recommended Prerequisite: CLIM 111, MATH 114 and PHYS 260; or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 438: Atmospheric Chemistry. 3 credits.
Reviews fundamental chemical processes of the Earth’s atmosphere including chemical cycles, thermodynamics, reaction kinetics, photochemistry, radiative balance, ozone chemistry and environmental issues, including air pollution, acid rain and global change. Includes some review of extraterrestrial atmospheric chemistry. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to CHEM 438.

Recommended Prerequisite: CHEM 331 and 332 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 440: Climate Dynamics. 3 credits.
Structure, dynamics and thermodynamics of atmospheric and oceanic circulations that maintain the climate. Role of the large scale transport of energy, moisture and angular momentum. Relationships of large scale circulation to weather and weather extremes, and implications for past and future climates. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Recommended Prerequisite: CLIM 411, MATH 213, MATH 214, and CLIM 411.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 456: Introduction to Atmospheric Radiation. 3 credits.
Provides fundamentals, physical understanding and quantitative analysis of radiative transfer in the atmosphere, discusses radiation processes-reflection, refraction, absorption, transmission, emission, and scattering and introduces tools for atmospheric radiative transfer. Provide students the basics for more advanced topics such as remote sensing or satellite meteorology. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to GGS 456.

Recommended Prerequisite: CLIM 111, MATH 114, and PHYS 260 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CLIM 470: Numerical Weather Prediction. 3 credits.
Concepts and techniques of numerical prediction of weather, including the numerical models used and the rationale for large suites of meteorological forecasts. Sources of errors in the forecast: errors in the initial conditions and in the numerical weather prediction models. Interpretation of model output. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Recommended Prerequisite: MATH 213, MATH 214, and CLIM 411.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

CLIM 511: Atmospheric Dynamics. 3 credits.
Observational bases and fundamentals of fluid dynamic principles for understanding atmospheric motions across multiple spatial and temporal scales; covers basic conservation laws of mass, momentum, and energy; concepts of circulation and vorticity; balanced atmospheric flows, e.g. geostrophic wind and shear, thermal wind; quasi-geostrophic and isentropic potential vorticity analysis for mid-latitude cyclones and fronts. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: MATH 213 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 512: Physical Oceanography.** 3 credits.
Course describes the global patterns of temperature, salinity, currents and waves in the world's oceans, and how these patterns influence marine biota, climate, and human activity. Course introduces key concepts which explain physical feature of the ocean ranging from microscopic turbulence to global circulation. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** MATH 113 or MATH 115; PHYS 160 or PHYS 243; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**CLIM 610: Introduction to the Physical Climate System.** 3 credits.
Provides modern understanding of ocean, atmosphere, and land based on fundamental physical laws. Describes current climate and physical processes by which climate is maintained. Covers theoretical models of general circulation of atmosphere, including time mean and transient behavior. Describes basics of ocean circulation and interactions between ocean and atmosphere. Reviews past climate change, stratosphere and its interactions with troposphere, and role of land processes in modulating climate. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** BS or MS in mathematics or a physical science, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 614: Land-Climate Interactions.** 3 credits.
Interdisciplinary course providing detailed description of surface energy and water balance over land and radiative and turbulent transfer. Introduces numerical techniques for modeling land surface and applications in weather, climate, and hydrologic forecasting and simulation. Includes hands-on experience with land surface models in computer laboratory, including sensitivity experiments to reinforce theoretical concepts. Exposure to contemporary research through reading and reviewing seminal journal papers. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** BS or MS in mathematics or physical science, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 670: Earth System Modeling.** 3 credits.
An Earth system model is composed of models simulating the evolution of the atmosphere, ocean, cryosphere, biosphere, and other components. Course introduces the component models, their interactions, and how they are used to predict the behavior of weather and climate on time scales that range from hours to centuries. Students will learn technical and scientific skills necessary to run an Earth system model and evaluate its output. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** Computer programming experience

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 680: Climate Data.** 3 credits.
How to process, analyze, and interpret environmental data for climate and related disciplines. Familiarizes students with software commonly used in atmospheric research and with techniques for working with large quantities of data. Examines mathematical tools for characterizing global physical data sets which vary in time and space, and applies the tools to observations and numerical model output. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** MATH 115 or an equivalent course and familiarity with a computer language.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
CLIM 690: Scientific Basis of Climate Change. 3 credits.

Recommended Prerequisite: BS or MS in a natural science or engineering, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

CLIM 700: Climate Comprehensive Exam. 1 credit.
Preparation for and completion of written comprehensive exam, on a climate-related subject, within AGES department. The exam is part of the degree requirements in lieu of writing a master's thesis. Instructor should be the chair of the examination committee. The exam committee will specify exam content. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 2 credits.

Recommended Prerequisite: At least 15 graduate credits, approved project proposal, and permission of major advisor or chair of the examination committee.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CLIM 711: Introduction to Atmospheric Dynamics. 3 credits.
Covers basic conservation laws of mass, momentum, and energy and scaling analysis of equation of motion and thermodynamic equation. Discusses balanced flows in atmosphere, such as geostrophic wind and its vertical shear, and thermal wind relationship. Also explores circulation and vorticity; role of atmospheric boundary layer in mass, momentum, and energy transfer; synoptic scale motions; and role of gravity and Rossby waves in controlling general circulation of atmosphere. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: BS or MS in mathematics or a physical science, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

CLIM 712: Physical and Dynamical Oceanography. 3 credits.
Introduces climatology and dynamics of oceans. Covers nature of seawater, heat, and salt budgets; general circulation of the ocean, including the Gulf Stream and thermohaline circulations; dynamics of wind-driven ocean circulation; and processes influencing biological and chemical behavior. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: CSI 751 or CLIM 710, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CLIM 713: Atmosphere-Ocean Interactions. 3 credits.
Provides comprehensive observational and mechanistic understanding of El Nino and Southern Oscillation (ENSO) phenomena. Topics include observations and theories of seasonal and interannual changes in ocean circulation and temperature and interactions with atmosphere; equations of motion and theories of wind-driven circulation; mixed layer observations and theories; midlatitude and equatorial ocean waves; interannual variability and atmosphere-ocean coupling; and tropical oceanography and meteorology. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: CLIM 712 or 711 or equivalent, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CLIM 715: Numerical Methods for Climate Modeling. 3 credits.
Foundation and theory of computational methods for atmosphere and ocean modeling, with special emphasis on finite-difference and spectral methods. Topics include accuracy, consistency, convergence and stability; time stepping schemes; nonlinear computational stability; energy and enstrophy conserving schemes for momentum equations; staggered and curvilinear grids; alternate vertical coordinate systems; implicit and split-explicit barotropic mode solution; pressure gradient errors and vorticity constraints; spectral methods for atmospheric models; and treatment of model physics. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.
**Recommended Prerequisite:** CLIM 712 or 711 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 750: Geophysical Fluid Dynamics.** 3 credits.
Introduces geophysical fluid dynamics, the study of rotating stratified flows. Covers hydrostatics; equations of motion, gravity wave dynamics, and stratified flow; effects of rotation, midlatitude dynamics, Rossby number and quasigeostrophic expansion; beta plane approximation; and equatorial Kelvin and Rossby waves. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** CLIM 711, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 751: Predictability and Prediction of Weather and Climate.** 3 credits.
Covers predictability and seamless prediction of weather and climate for timescales ranging from days to decades. Studies limitations to predictability due to chaos, and possible sources of predictability due to slowly varying surface boundary conditions produced by interactions among atmospheres, ocean and land system. Discusses predictability of droughts and floods, monsoons, ENSO, decadal variations and climate change. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Registration Restrictions:**
Clean up some content. Offered by Atmospheric/Oceanic/Earth Sci

**Recommended Prerequisite:** CLIM 711

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 752: Ocean General Circulation.** 3 credits.
Description and theory of large-scale ocean circulation and how it affects climate. Focus is on ubiquitous flow structures such as gyres, equatorial currents, and meridional overturning cells. Examines how the circulation follows from wind and thermohaline forcing, as well as physical principles. The influence of the circulation on heat transport and climate variability is also discussed. Conceptual guideposts include barotropic gyres, Ekman cells, potential vorticity, western intensification, the interplay of gravity and the Earth's rotation, advective-diffusive balance, multiple flow states, and Rossby waves. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** CLIM 712 or 711 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 753: General Circulation of the Atmosphere.** 3 credits.
Overview and several theoretical perspectives of atmospheric transport of energy, moisture, and angular momentum, and how these processes fundamentally affect the climate on various time scales. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** CLIM 710 and CLIM 711.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 754: Elements of the Tropical Climate System.** 3 credits.
Observations and dynamics of key processes of tropical weather and climate. Topics include: structure of the tropical atmosphere and ocean, convection, dynamics of tropical waves in the atmosphere and ocean, tropical intraseasonal variability, tropical the global monsoons, cyclones, and stratospheric quasi-biennial oscillation. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** CLIM 711.

**Recommended Corequisite:** CLIM 710.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 759: Topics in Climate Dynamics.** 3 credits.
Covers selected topics in climate dynamics not covered in fixed-content courses. Notes: May be repeated for credit when offered with different content. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 762:** *Statistical Methods in Climate Research.* 3 credits.
Introduction to a core set of statistical methods that have proven useful to modern climate and predictability research. Topics include detecting and attributing climate change, describing climate variability with empirical orthogonal functions, statistical forecasting with regression and time series models, and identifying coupled patterns of variability with canonical correlation analysis. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** Undergraduate level linear algebra and STAT 344 (or equivalent), or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 763:** *Advanced Statistical Methods in Climate Research.* 3 credits.
Introduction to multivariate statistical techniques commonly used in climate science, with special emphasis on estimation in large dimensional spaces. Topics include: multivariate regression, canonical correlation analysis, predictable component analysis, field significance tests, data assimilation (especially the ensemble Kalman Filter), discriminant analysis, and multivariate detection and attribution of climate change. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

**Recommended Prerequisite:** CLIM 762 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 798:** *Master's Climate Research Project.* 1-6 credits.
Research or literature-review project in climate science or related topic chosen and completed under the guidance of a faculty member. Proposal required before enrollment. Technical report acceptable to student's project committee required for completion. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** At least 15 graduate credits, approved project proposal, and permission of major advisor or chair of the examination committee.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CLIM 799:** *Master's Thesis in Climate.* 1-6 credits.
Research project in climate science or related topic chosen and completed under the supervision of a faculty member. Resulting thesis acceptable to student's committee and potentially publishable is required for completion. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Degree candidacy, thesis proposal approved by thesis committee, and permission of major advisor or instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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### 900 Level Courses

**CLIM 991:** *Climate Dynamics Seminar.* 1 credit.
Presentations in climate dynamics field by Mason faculty and invited speakers. Notes: A maximum of 3 credits may be applied toward the climate dynamics PhD. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CLIM 996:** *Doctoral Reading and Research.* 1-6 credits.
Reading and research on a specific topic in climate dynamics under the direction of a faculty member. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Admission into the climate dynamics doctoral program and permission of instructor.
Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Research

Grading:
This course is graded on the Graduate Special scale. (p. 84)

CLIM 997: Doctoral Qualification. 3 credits.
Students develop a project that demonstrates their potential to do scientific research. Each student either proposes a research project, or submits an original manuscript that is suitable for a peer-reviewed scientific journal in the subject area of Climate Dynamics. Grading is based on an oral presentation and written work. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: Permission of Instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CLIM 998: Doctoral Dissertation Proposal. 1-12 credits.
Covers development of research proposal under guidance of dissertation director and doctoral committee. Proposal forms basis for climate dynamics doctoral dissertation. Notes: Course may be repeated, but no more than 12 credits of CLIM 998 may be applied to doctoral degree requirements. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree.

Recommended Prerequisite: Doctoral standing and permission of advisor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science college.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CLIM 999: Doctoral Dissertation. 1-12 credits.
Doctoral dissertation research under direction of dissertation director. Notes: May be repeated, but no more than 24 credits total in CLIM 998 and 999 may be applied to doctoral degree requirements. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree.

Recommended Prerequisite: Admission to doctoral candidacy and permission of advisor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science college.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**College of Science (COS)**

**100 Level Courses**

COS 120: Introduction to Research. 1-3 credits.
Introduction to research, involving work on a research project. May involve lab study, computer modeling and analysis, mathematics, or other original research as appropriate. Research formulated and completed under instructor's guidance. Culminates in a written or oral final report. Offered by College of Science (p. 613). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

COS 300: Professional Preparation for STEM Disciplines. 3 credits.
Prepares any undergraduate major that is interested in enhancing their competences in science writing, technical communication and social media skills. Students will be prepared to become more competitive in the next generation workforce. Covers these topics: drafting and revising papers, dissecting scientific journal articles, communicating science to non-scientists, creating a podcast, writing grant proposals, and preparing CVs, resume and "elevator pitches." By the end of the course, the student will not only be familiar but more confident in effectively disseminating information in their own field of interest. Offered by College of Science (p. 613). Limited to three attempts.

Recommended Prerequisite: ENGH 302 or its equivalent and COMM 100 or COMM 101 or their equivalents. Students should be at the sophomore level or above.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

COS 400: Problem Solving and Leadership in STEAM. 3 credits.
In this course, participants will experience a hands-on approach to incorporating global problem solving principles into the STEAM (Science, Technology, Engineering, Arts and Mathematics) disciplines and consider implications for application in research and development. This course consists of face to face meetings, follow up webinars and a collaborative project. Notes: This course will culminate with international travel; locations will vary by semester. Offered by College of Science (p. 613). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COS 401: RS: Discipline Based Education Research. 2-3 credits.
Students will conduct an original Discipline-Based Education Research (DBER) project with their faculty mentor and STEM Accelerator faculty mentor. Offered by College of Science (p. 613). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive
COS 500: 500 Level Courses

COS 402: Special Topics in Science. 1-4 credits.
Explore an array of exciting topics in science; the course’s topic will vary by section offered. Offered by College of Science (p. 613). May be repeated within the term for a maximum 8 credits.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COS 502: Professional Preparation for STEM Disciplines. 3 credits.
Prepares graduate students that are interested in enhancing their competences in science writing, technical communication and social media skills. Students will be prepared to become more competitive in the next generation workforce. Covers these topics: drafting and revising papers, dissecting scientific journal articles, communicating science to non-scientists, creating a podcast, writing grant proposals, and preparing CVs, resume and "elevator pitches." By the end of the course, the student will not only be familiar but more confident in effectively disseminating information in their own field of interest. Offered by College of Science (p. 613). May not be repeated for credit.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

COS 600: Multidisciplinary Problem Solving and Leadership. 3 credits.
Participants will experience a hands-on approach to incorporating global problem solving principles into the STEAM (Science, Technology, Engineering, Arts and Mathematics) disciplines and consider implications for application in research and development. This course consists of face to face meetings, follow up webinars and a collaborative project. Notes: This course may culminate with international travel, locations will vary by semester. Offered by College of Science (p. 613). May not be repeated for credit.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COS 602: Special Topics in Science. 1-4 credits.
Explore an array of exciting topics in science; the course’s topic will vary by section offered. Offered by College of Science (p. 613). May be repeated within the term for a maximum 8 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COS 803: Special Topics in the Arts. 1-6 credits.
Provides cumulative arts experience by tying subject matter to major cultural production of Center for the Arts. Notes: Subject matter varies. May be repeated when taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CVPA 101: Arts Pass. 2 credits.
Introduction to appreciation of the arts through lectures and demonstrations in visual art, music, dance, and theater. Emphasizes aesthetic principles in modern society. Students attend performances and exhibitions and develop analytical skills through written journal and discussion. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 4 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CVPA 102: Experiencing the Arts. 3 credits.
Reserved for high school students enrolled in CVPA. Introduces collaborative and interdisciplinary arts experiences in visual art, music, dance, theater, film, and media through daily intensive immersion in the arts for two and a half weeks. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CVPA 105: Multidisciplinary Arts Pass. 2 credits.
Exploration of topical studies on the arts. Notes: Subject matter varies. May be repeated within the term for a maximum 12 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CVPA 308: Cross-Cultural Arts Appreciation. 3 credits.
Provides cumulative arts experience by tying subject matter to major cultural production of Center for the Arts. Notes: Subject matter varies. May be repeated when taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 12 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CVPA 399: Special Topics in the Arts. 1-6 credits.
In-depth presentation and exploration of topical studies on the arts. Notes: Subject matter varies. May be repeated when taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
topics. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 24 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**CVPA 430: Topics in Arts and Wellness.** 1-3 credits.
In-depth presentation and exploration of topical studies in arts and wellness or related areas such as injury prevention, performance enhancement, and health and wellness training. Notes: Topic depends on instructor. May be repeated if taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** 90 hours or permission of instructor; concurrent enrollment is permitted.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CVPA 489: Field Experience in the Arts.** 3-6 credits.
Apprenticeship, internship, or project with organization or individual in the arts. Must be prearranged with division director before enrollment. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Junior standing and completion of six credits in CVPA courses in the area of residency, CVPA 305, or permission of instructor.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CVPA 499: Research/Performance/Topics in the Arts.** 3-6 credits.
Advanced research, performance, or exploration of topical studies in arts. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of department chair.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

**CVPA 530: Topics in Arts and Wellness.** 1-3 credits.
In-depth presentation and exploration of topical studies in arts and wellness and/or related areas (e.g., injury prevention, performance enhancement, health and wellness training to educators and arts professionals). Topic depends on instructor. Notes: May be repeated if taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** 90 hours or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CVPA 592: Special Topics in Interdisciplinary Arts Studies.** 1-3 credits.
Topics in interdisciplinary arts. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** Undergraduate degree or equivalent, or Permission of Instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CVPA 599: Independent Study.** 1-6 credits.
Independent reading, performance, or research on specific project under direction of selected faculty member. May include attendance in parallel undergraduate course. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Undergraduate degree or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**CVPA 600: CVPA Graduate ProSeminar.** 0 credits.
Introduces students into graduate studies in the arts; the course reviews graduate practices and policies. Students are required to take this within their first year of graduate study in CVPA. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Acceptance into a CVPA Graduate Program.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**700 Level Courses**

**CVPA 700: Academic Writing in the Arts.** 1 credit.
Prepares graduate students for the rigors of academic writing in the arts at the advanced level and supports students' acculturation in the academic writing skills and practices of their discourse communities. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CVPA 701: Thesis and Project Writing.** 1 credit.
Students will develop an expertise within the specific rhetorical context of the thesis/project genre, understand the specialized features of the final project or thesis, and apply the strategies they have learned in their disciplines to their capstone event. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of 21 graduate credits in a CVPA graduate degree.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Communication (COMM)**

**100 Level Courses**

**COMM 100: Public Speaking.** 3 credits.
Presents principles to develop effective presentations for public and professional settings while integrating appropriate technologies. Emphasizes analyzing audience; composing meaningful, coherent messages; conducting responsible research; developing effective arguments; and improving delivery skills to strengthen confidence and credibility. Offered by Communication (p. 313). Limited to three attempts.

**Mason Core:** Oral Communication (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 145: Newspaper Workshop I.** 0-1 credits.
Practical experience in writing, editing, or business aspects of newspaper production at Broadside or other papers. Coordinated by newspaper faculty advisor. Offered by Communication (p. 313). May be repeated within the term for a maximum 3 credits.

**Recommended Prerequisite:** One 100 level COMM course, or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 148: Radio Workshop I.** 0-1 credits.
Students receive individual guidance while learning to be on-air show hosts at student internet radio station WGMU. New technologies such as computer automation systems and advanced production software are integrated throughout the curriculum to prepare students to engage in the most current applications for commercial and internet radio and podcasting. Offered by Communication (p. 313). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** COMM 100 or 101 and declared major or minor in communication, undeclared major, or permission of undergraduate program director.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 157: Digital Media Workshop.** 0-1 credits.
Offers students a hands-on introduction to digital tools of creative expression, involving the use of specific software and hardware, including operating systems, media editing programs, authoring applications, and software utilities. Notes: Students who have already completed or are in COMM 208 are not eligible to take this course. Offered by Communication (p. 313). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** COMM 100 or 101 or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**COMM 200: Communication Theory.** 3 credits.
Introduces the field of communication, including perspectives on theory and research, topical areas within the discipline, basic research methodologies, and a survey of theories in those areas. Covers basic procedures for theory-building, research, and writing about communication. Offered by Communication (p. 313). Limited to three attempts.

**Specialized Designation:** Discovery of Scholarship.

**Recommended Prerequisite:** COMM 100 or COMM 101 or permission of undergraduate program director.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 201: Small Group Communication.** 3 credits.
Principles of communicating effectively in small group situations. Emphasizes problem-solving group communication. Practice in working cooperatively with others to complete projects using systematic approach to problem solving. Offered by Communication (p. 313). Limited to three attempts.

**Recommended Prerequisite:** COMM 101, or equivalent course.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 202: Media and Society.** 3 credits.
Examines the relationship between media and society through the study of development of various media systems in the United States, including print media, radio, television, film, the recording industry, and new communication technologies. Introduces media effects and basic theories. Offered by Communication (p. 313). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 203: Introduction to Journalism.** 3 credits.
American journalism including history and First Amendment components; role of professional journalist; print, broadcast, and computer assisted news operations; economics of publishing; and effect of new technologies. Serves as starting point for those interested in journalism careers and as orientation for those interested in learning more about news business operations. Offered by Communication (p. 313). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 204: Introduction to Public Relations.** 3 credits.
Introduces the evolving field of public relations and the role it plays in global business, politics and social interactions. Focuses on creation of integrated digital communication and social media engagement. This is a required course for the Communication Department Public Relations concentration and a prerequisite for several upper-level public relations courses. Offered by Communication (p. 313). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 208: Introduction to Media Production.** 3 credits.
Provides a general introduction to media production with emphasis on the basics of multimedia tools for camera, audio, lighting, and editing, focusing on non-fiction, journalism, or public relations/advocacy presentations. Offered by Communication (p. 313). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
COMM 210: Voice and Articulation. 3 credits.
Principles of voice production, with practice in effective vocal use
of American English. Emphasizes student participation. Offered by
Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 230: Case Studies in Persuasion. 3 credits.
Examines common persuasive message strategies and approaches.
Covers basic principles of persuasive process. Case studies include
advertisements, speeches, and persuasive activities from all segments of
society. Offered by Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 249: Communication Field Experience. 1-2 credits.
Field training and experience related to one of the five communication
department concentrations through faculty-approved activity support.
Offered by Communication (p. 313). May be repeated within the term for a
maximum of 4 credits.

Recommended Prerequisite: 45 credits total.

Schedule Type: Activity-Based

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

COMM 255: Introduction to Media Literacy. 3 credits.
Principles and practices of media literacy. Emphasizes critical viewing,
listening, and reading media skills; and media effects on consumer.
Offered by Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 260: Basic Debate Theory and Practice. 3 credits.
Theory and practice of formal debate, including approaches to analytical
reasoning, research, delivery, and conceptual basis for debate. Does not
require tournament participation. Offered by Communication (p. 313).
Limited to three attempts.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 261: Theories of Argumentation. 3 credits.
Analyzes argument within communicative settings. Emphasizes
deductive and inductive forms of reasoning, fallacies in reasoning, tests
of evidence, and models for such analyses. Offered by Communication
(p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

COMM 300: Rhetorical Theory and Criticism. 3 credits.
Theories and principles of public communication, emphasizing methods
of persuasion, critical analysis, speaker-listener alignments in public
setting, and measurements of effective public communication. Offered by
Communication (p. 313). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: COMM 200C or U200.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 301: Relational Communication Theory. 3 credits.
Theories and principles of interpersonal communication emphasizing
modes of communication, verbal and nonverbal message systems, and
analysis of communicative relationships. Offered by Communication
(p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 302: Media Theory. 3 credits.
Provides a comprehensive review of mass communication and media
theory, focusing on media effects and the complex relationships between
media producers, messages, technologies, and users/audiences.
Examines role of media in news, politics, and popular culture. Offered by
Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 303: Writing across the Media. 3 credits.
Foundation course focusing on writing for the mass media: Internet,
public relations, newspapers, broadcast (television and radio) and
advertising with a strong emphasis on adherence to Associated Press
Style. Notes: Prerequisite for all communication media writing courses.
Lab work required. Offered by Communication (p. 313). Limited to three
attempts.

Recommended Prerequisite: 30 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 304: Foundations of Health Communication. 3 credits.
Explores health communication research practice: the role of
communication in health care delivery, health promotion and disease
prevention, risk communication, and personal as well as psychological
well-being. Examines interpersonal, organizational, team, family, and
intercultural relationships. Offered by Communication (p. 313). Limited to
three attempts.

Schedule Type: Lecture
COMM 305: Foundations of Intercultural Communication. 3 credits.
Analyzes communication variables as they relate to intercultural encounters. Emphasizes culture's influence on communication process, particularly influence of verbal and nonverbal communication on how message is interpreted. Notes: Communication majors are encouraged to complete COMM 200 prior to enrolling in this course. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: 3 credits of 100 or 200-level COMM courses or 60 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 306: Issues in Intercultural Communication. 3 credits.
Applies basic principles of intercultural communication to analyze specific situations involving communication and cultural differences. Notes: Continuation of COMM 305. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: COMM 305, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 307: Field Study in Communication. 3 credits.
Structured communication learning experience: one to three weeks of travel in a foreign environment involving another country or relevant U.S. co-cultures. Students must complete appropriate readings, laboratory assignments, and personal learning paper to process communication concepts and experiences. Notes: May be repeated for credit when field study is substantially different with permission of the undergraduate director. Offered by Communication (p. 313). May be repeated within the degree.

Recommended Prerequisite: Permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 310: Performance for Communication Arts. 3 credits.
Principles and theories of performance for communication arts. Practice in spoken performance of prose, poetry, and drama. Offered by Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 311: Business and Professional Communication. 3 credits.
Study of basic theories and skills of communication in professional contexts, including interviewing, relationship maintenance, small group teams, and public presentations. Emphasizes developing practical and critical thinking skills. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: COMM 100, 101, or 104 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 300, 330 or 60 credits.

Recommended Prerequisite: 3 hours of COMM credit and 60 hours, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 305. or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 310: Principles of Public Relations. 3 credits.
Surveys nature, history, scope, and practice of public relations in business, trade associations, nonprofit organizations, and educational and government institutions. Covers principles, practice of public relations, including media relations, issues management, and public service announcements; marketing and research; planning and publicity specialist events; house publications; and institutional advertising. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: COMM 204C, 330C, U204 or L330.

C Requires minimum grade of C.
COMM 332: *Nonverbal Communication*. 3 credits.
Theory, principles, and methods to analyze nonverbal communication. Emphasizes physical behavior, facial expression, personal space and territoriality, physical appearance, vocal cues, and environment. Offered by Communication (p. 313). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 333: *Family and Health Communication*. 3 credits.
Examines how family communication contributes to physical, psychological, and social wellness. Explores how family communication affects our experience with health transitions (e.g., coping with cancer; becoming a caregiver; losing a loved one), contributes to health outcomes (e.g., stress and anxiety; disordered eating behavior; schizophrenia; drug abuse), and is central to health promotion behavior (e.g., understanding health history and genetics). Offered by Communication (p. 313). Limited to three attempts.

**Recommended Prerequisite:** COMM 100, 101, or 301, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 335: *Organizational Communication*. 3 credits.
Theory, practice, and methods to analyze communication in organizations. Emphasizes process and structure, interaction formats, mechanisms for modification, and career paths in organizational communication. Offered by Communication (p. 313). Limited to three attempts.

**Recommended Prerequisite:** COMM 100, 101, or 301, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 340: *Forensics Seminar III*. 0-4 credits.
Intensive work in various types of creative forensics events, including rhetorical criticism and informative, extemporaneous, after-dinner, and impromptu speaking. Offered by Communication (p. 313). May be repeated within the degree for a maximum 5 credits.

**Recommended Prerequisite:** Completion of 60 hours, or 4 hours of COMM 140. Audition required.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 341: *Forensics Seminar IV*. 0-4 credits.
Intensive work in various types of creative forensics events, including dramatic duo, program interpretation, poetry interpretation, dramatic interpretation, and prose interpretation. Offered by Communication (p. 313). May be repeated within the degree for a maximum 5 credits.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 342: *Debate Seminar III*. 0-4 credits.
Work in affirmative research, case construction, and oral presentation directed toward affirmative analysis of intercollegiate debate proposition. Offered by Communication (p. 313). May be repeated within the degree for a maximum 5 credits.

**Recommended Prerequisite:** Completion of 60 hours, or 4 hours of COMM 142. Audition required.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 343: *Debate Seminar IV*. 0-4 credits.
Work in negative research, case attacks, and oral presentation directed toward negative analysis of intercollegiate debate proposition. Offered by Communication (p. 313). May be repeated within the degree for a maximum 5 credits.

**Recommended Prerequisite:** Completion of 60 hours, or 4 hours of COMM 142. Audition required.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 344: *Newspaper Workshop II*. 0-1 credits.
Practical experience in writing and editing for student newspaper or other papers. Offered by Communication (p. 313). May be repeated within the term for a maximum 3 credits.

**Recommended Prerequisite:** 3 credits of COMM 145, 351, or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 345: *Yearbook Workshop*. 1 credit.
Practical experience in promotion, marketing, and sales of video yearbook, or practical experience working on Senior Expressions, a print supplement to the video yearbook. Offered by Communication (p. 313). May be repeated within the term for a maximum 3 credits.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 346: *Cable TV Programming and Marketing*. 0-1 credits.
Practical experience in television programming, promotion, and marketing of a campus television cable network operation. Offered by Communication (p. 313). May be repeated within the degree for a maximum 3 credits.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
COMM 348: Radio Workshop II. 0-1 credits.
Intensive practical application of previously acquired on-air show hosting skills at student internet radio station WGMU. Skill development in commercial production and writing included. New technologies such as social media, computer automation systems and advanced production software are integrated throughout the curriculum to prepare students to engage in the most current applications for commercial and internet radio and podcasting. Offered by Communication (p. 313). May be repeated within the term for a maximum 3 credits.

Recommended Prerequisite: COMM 148, or permission of instructor.

Schedule Type: Seminar
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 350: Mass Communication and Public Policy. 3 credits.
Investigates how matters of public importance are communicated via various mass communication channels. Emphasizes regulations to minimize influence of mass media on public decision-making, and media manipulation by pressure groups, politicians, and media gatekeepers. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: COMM 202, 255, or 302, or permission of instructor.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 351: News Writing and Reporting. 3 credits.
Experience in actual news gathering. Students write and report for print and online outlets. Numerous in-class and out-of-class writing assignments train students in unique styles of print and online journalism. Offered by Communication (p. 313). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: COMM 303<sup>C</sup> or L303.
<sup>C</sup> Requires minimum grade of C.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 352: News Editing: Print and Beyond. 3 credits.
Copy preparation, headline writing, news judging, and layout for various forms of print and electronic formats. Introduces working on news copy desks. Offered by Communication (p. 313). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: COMM 303<sup>C</sup> or L303.
<sup>C</sup> Requires minimum grade of C.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 353: Broadcast Journalism. 3 credits.

Registration Restrictions:
Required Prerequisites: COMM 303<sup>C</sup> or L303.
<sup>C</sup> Requires minimum grade of C.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 354: Radio Production and Podcasting. 3 credits.
Students will learn and critically analyze the components of radio and podcast production including: interviewing, story development, script writing, interview techniques, remote and digital audio recording, editing of sound, mixing, and final production for broadcast. The course includes a lecture component and lab time where the instructor will consult with students on their practice and production assignments including short (30 seconds) and longer formats (around 4 minutes). Podcasts will be posted to a website and/or SoundCloud. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: COMM 302 or permission of instructor.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 355: Multi-Camera Studio Production. 3 credits.
Provides an in-depth exploration of the creative, technical, logistical, and aesthetic requirements of production in a multiple camera environment. The fundamental skills learned in this class will serve as a foundation for narrative, event, live sports, talk show, broadcast journalism, and magazine-styled television and webcast programming. Offered by Communication (p. 313). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: COMM 355<sup>C</sup>, FAVS 255<sup>C</sup>, COMM 208<sup>C</sup>, L355, FAVS U255 or COMM U208.
<sup>C</sup> Requires minimum grade of C.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
COMM 359: Media Management. 3 credits.
Principles, practices of media management from general techniques to operation of individual departments within a media organization. Offered by Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 360: Digital Postproduction. 3 credits.
Offers instruction on delivering high-quality image and video products for digital media. Students will be introduced to an array of video-audio editing and digital image software for integrating video, audio, photo and graphic postproduction. Student projects focus on journalism, public relations, and advocacy contexts. Offered by Communication (p. 313). Limited to three attempts. Equivalent to FAVS 260.

Registration Restrictions:
Required Prerequisites: COMM 355, FAVS 255, COMM 208, L355, FAVS U255 or COMM U208.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 361: Online Journalism. 3 credits.
Focuses on online journalism, research, reporting, web page and weblog creation, and writing for Internet. Offered by Communication (p. 313). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: COMM 303 or L303.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 362: Argument and Public Policy. 3 credits.
Develops argumentative skills while examining contemporary public policy. Applies methods of argumentative analysis to design, implementation of public policy. Students learn by constructing, examining, and using public argument. Offered by Communication (p. 313). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 363: Media Career Seminar. 1 credit.
Practicum for students with production experience; students produce a final resume in area of expertise. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: Two courses completed in area of media production focus.

Schedule Type: Laboratory

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 364: Videography. 3 credits.
Provides a comprehensive overview of the principles and practices of visual storytelling, encompassing short documentaries, campaigns, commercial work, news and other non-fiction narratives. Mobile, DSLR and fixed-lens cameras will be used to explore all facets of visual production that tell human stories, with emphasis on character, conflict, drama, and surprise. Offered by Communication (p. 313). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: COMM 355, FAVS 255, COMM 208, L355, FAVS U255 or COMM U208.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 365: Gender, Race, and Class in the Media. 3 credits.
Introduces concepts of power, influence of mass media. Allows students to see themselves as products, producers of media influence, and gives sense of the roles in the media or lack thereof, of groups based on their gender, race and/or class. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: COMM 302 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 366: Visual Communication. 3 credits.
Teaches visual communication theories and applies them to creation of videos, web pages, multimedia production, Computer Based Training (CBT) and other technologies. Covers limits of visual communication in terms of perception, economics, and technology. Partial distance course includes viewing video modules and using electronically mediated discussion. Offered by Communication (p. 313). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: COMM 208, FAVS 255, COMM U208 or FAVS U255.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 367: Children and Media. 3 credits.
Provides an overview of the relationships between children and mass media. Focus of the course is on the effects of media consumption on children’s social and psychological well-being. Students will learn major child development theories, review history, economics and regulation of children’s programming, and explore children’s use of and responses to various media. Offered by Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 369: Multimedia Storytelling.** 3 credits.
Applies concepts of advanced visual storytelling within today's fluid media landscape. Students report and tell compelling stories across multiple platforms using simple, portable equipment and software essential to reporters working in the contemporary converged newsroom. Highlights a multimedia approach to journalism to include broadcast, mobile reporting skills and backpack journalism techniques. Offered by Communication (p. 313). Limited to three attempts. Equivalent to COMM 453.

**Recommended Prerequisite:** COMM 353

**Registration Restrictions:**
**Required Prerequisite:** COMM 303

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 370: Feature Writing.** 3 credits.
Introduces aspiring journalists to research techniques and critical writing skills needed to produce publishable magazine or newspaper feature stories. Offered by Communication (p. 313). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** COMM 303C or L303.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 371: Sports Writing and Reporting.** 3 credits.
Experience in actual sports-related news gathering and reporting. Covers writing and reporting on sports-related subjects for print and online media. Numerous in-class and out-of-class writing assignments train students in the unique style of covering sports events, reporting breaking news, and writing feature stories. Offered by Communication (p. 313). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** COMM 303C or L303.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 372: Sports and the Media.** 3 credits.
Examines the role of mass media in constructing images of athletes, sport, and sports culture. Critical attention is given to broadcast, print, and film of sport media. Assesses sociological and cultural issues that shape sport media and culture. Offered by Communication (p. 313). Limited to three attempts.

**Schedule Type:** Lecture

**Recommended Prerequisite:** Completion of 60 hours or permission of instructor.

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 373: Business and Economic Journalism.** 3 credits.
Writing and reporting about business and the economy with focus on understanding financial news and reporting about companies, trade, and markets for print, broadcast, and online media. Students practice through in-class and out-of-class writing assignments. Offered by Communication (p. 313). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** COMM 303C or L303.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 374: Political Journalism.** 3 credits.
Writing and reporting about politics, elections and campaigns, and the legislative and executive branches of government for print, broadcast, and online media. Students practice the style and substance of covering political news through in-class and out-of-class writing assignments. A unique collaboration with C-SPAN including video conference opportunities with political and media personalities. Offered by Communication (p. 313). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** COMM 303C or L303.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 375: Mass Communication Advertising and Promotions.** 3 credits.
History, regulation, and ratings of advertising, as well as media buying, advertising campaigns, and strengths and weaknesses of media vehicles used in advertising. Offered by Communication (p. 313). Limited to three attempts.

**Recommended Prerequisite:** COMM 302 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 380: Media Criticism.** 3 credits.
Examines practical criticism of a wide variety of media texts including television programs, newspapers, articles, films, photographs, and advertisements. Introduces principles of major contemporary modes of analysis for systematically interpreting visual and verbal forms of communication. Offered by Communication (p. 313). Limited to three attempts.

**Recommended Prerequisite:** Completion of 60 hours or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 384: Public Relations and Social Media.** 3 credits.
Explores the role of social media in contemporary public relations. Students engage in social media research and analysis, examine best
practices for successful campaigns, seek to understand conditions for viral media, implement a personal branding strategy, create strategic engagement plans, and design campaigns. Offered by Communication (p. 313). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 385:** Special Topics in Interpersonal and Organizational Communication. 3 credits.
Topics vary. Counts toward Organizational and Interpersonal Communication concentration in the Communication Department. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 386:** Special Topics in Political Communication. 3 credits.
Topics vary. Counts toward Political Communication concentration in the Communication Department. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 387:** Special Topics in Journalism. 3 credits.
Topics vary. Counts toward Journalism concentration in the Communication Department. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 388:** Special Topics in Public Relations. 3 credits.
Topics vary. Counts toward Public Relations concentration in the Communication Department. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 389:** Public Relations for Associations and Nonprofits. 3 credits.
Principles of editing and journalism applied to publications, public relations, and advertising needs within corporate environment. Job requirements of editorial positions in public relations, publications, and information as defined by trade associations, nonprofit organizations, and large corporations. Offered by Communication (p. 313). Limited to three attempts.

**Recommended Prerequisite:** 60 credits, or 3 credits of lower-division COMM courses.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 390:** Issues in Public Relations. 3 credits.
Focuses on current issues in corporate, government, and nonprofit public relations. Offered by Communication (p. 313). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** COMM 204C, 330C, U204 or L330.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 391:** Writing for Public Relations. 3 credits.
Focuses on public relations writing including news releases, client memos, broadcasting, speeches, brochures, journals, and advertisements. Includes writing styles, formats, organization, and writing research. Offered by Communication (p. 313). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** COMM 303C or L303.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 392:** Public Relations Study Abroad. 3 credits.
Concentrated survey course in public relations for business, trade associations, nonprofit organizations, and governmental institutions from the perspective of a location abroad. Emphasis placed on the global and intercultural aspects of public relations. Offered by Communication (p. 313). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 395:** Special Topics in Health Communication. 3 credits.
Topics vary. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 396:** Special Topics in Mass Communication. 3 credits.
Topics vary. Counts toward Media Production and Criticism Concentration in the Communication Department. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
COMM 397: Special Topics in Production. 1-3 credits.
Provides hands-on media production experience. Topics vary. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the term.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 398: Research Practicum in Communication. 1-3 credits.
Work individually with a faculty member on a faculty research project. Requires readings in research methods and topic area and a final project. Notes: Students must submit an application for COMM 398 at least one week prior to the beginning of the semester. Offered by Communication (p. 313). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 60 credits including at least 9 hours of COMM credit toward the major; minimum GPA of 2.5 overall and 3.0 in the major; approval of department.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 399: Special Topics in Communication. 1-3 credits.
Topics vary; some require laboratories. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the term.

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

COMM 400: Research Methods in Communication. 3 credits.
Explores applications for primary research methodologies used in communication. Research project with focus on survey, critical ethnographic, or experimental methodologies. Notes: Students may not receive credit for both COMM 400 and COMM 490. Offered by Communication (p. 313). Limited to three attempts. Equivalent to COMM 490.

Specialized Designation: Scholarly Inquiry.

Recommended Prerequisite: Two of COMM 300, 301, 302, 305 each one with a minimum grade of 2.00 (C).

Registration Restrictions:
Required Prerequisites: COMM 200\textsuperscript{C} or U200.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 401: Interpersonal Communication in the Workplace. 3 credits.
Comprehensive study of theories and research associated with dynamics of interpersonal relationships in the workplace. Emphasizes individual motivation, interpersonal needs, communication styles, leadership, problem solving, decision making, diversity, interpersonal conflict, individual adaptation to organizational change, and influence of technology on workplace relationships. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: COMM 301, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 411: Public Relations Practicum. 3 credits.
Helps communication majors apply their public relations education. Covers three general areas: public relations theory and applications, writing and editing, and networking/story placement. Includes public relations strategy and tactics, interviewing and analysis, writing and message delivery. Offered by Communication (p. 313). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: COMM 331\textsuperscript{C} or L331.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 412: Politics and the Mass Media. 3 credits.
Covers responsibilities; freedoms of mass media in a democracy; and media influence on citizens' opinions, elections, and decisions of public officials. Offered by Communication (p. 313). Limited to three attempts. Equivalent to GOVT 412.

Recommended Prerequisite: GOVT 103 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 430: Persuasion. 3 credits.
Theories of persuasive communication including traditional and contemporary attitudinal change; relationship among speaker, message, and audience; and relationship between attitudinal and behavioral change. Offered by Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 431: New Media and Democracy. 3 credits.
Examines how an evolving media environment, including new information sources and new opportunities to produce content, changes how people understand their place in American society. Engages with questions of where and how people learn about, discuss, and engage with issues of public importance, such as political policy concerning science, health, technology, and society. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: 60 credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 433: Environmental Communication. 3 credits.
Rhetoric and persuasion about environmental issues in contemporary society. Investigation of case studies in corporate, institutional, and movement attempts to mobilize and cope with ecological concerns. Critical assessment of public communication is emphasized. Offered by Communication (p. 313). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 434: Interviewing. 3 credits.
Theory, principles, and practical skills essential to interview process. Emphasizes information gathering, journalistic, persuasive, employment, and performance-appraisal interviews. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: 60 hours or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 435: Digital Communication. 3 credits.
Offers practical application, skill development, and theoretical and critical assessment of mediated communication, including digital networking and social media. Discusses and engages with digital communication in terms of culture and language, functional and dysfunctional communication, social interaction, critical perspectives and ideology, copyright, freedom, ethics and responsibility, and images of the future. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: 60 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 440: Ceremonial Speech Writing and Performance. 3 credits.
Provides students with the opportunities to develop speaking skills for a variety of contexts from eulogies to commencement speeches. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: 75+ hours or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 450: Internship in Communication. 3 credits.
On-the-job training in communication through approved field work study programs. Internships arranged and supervised by Department of Communication through internship coordinator. Related class work in resume preparation and job interviewing. Notes: See department for the application process. Offered by Communication (p. 313). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 60 credits, major or minor in communication, journalism, or sport communication; 15 credits in COMM for majors, 12 credits for non-COMM majors, and permission of department.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

COMM 451: Facilitating Communication Education. 3 credits.
Theory and practice in facilitating learning of communication principles and skills. Students work as instructional aides in lower-division classes under direct supervision of faculty member. Activities may include online learning support, social media updates, media production, facilitating small-group activities and individually critiquing oral performances. Offered by Communication (p. 313). Limited to three attempts.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 452: Media Production Practicum. 1-3 credits.
Theory and practice in creation, distribution, and response to media productions. Students complete minimum 150 hours of work as assistants to engineers, producers, directors, and organizers of media production facilities on campus, under supervision of a sponsoring faculty member. Notes: Only 3 credits may be applied to the communication major. Offered by Communication (p. 313). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: COMM 208, 303, or 348.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 454: Free Speech and Ethics. 3 credits.
Major issues surrounding roles of speech, press, and electronic media in society. Includes history of free speech and press issues in society, government role in regulating marketplace of ideas, and responsibility of individual in free society. Offered by Communication (p. 313). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: 60 credit hours or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 455: History of Journalism. 3 credits.
Development of print journalism, emphasizing interaction of technology, audience, and government intervention. Topics include birth of press, development of modern newspaper, and American development including Revolutionary and Civil wars, rise of independent press, and yellow journalism. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: 3 hours of COMM or HIST.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
COMM 456: Comparative Mass Media. 3 credits.
Survey of major foreign mass media systems as they compare with American system. Focuses on broad dimensions of international mass media and describes issues facing global journalism and media systems. Provides substantive framework to critically evaluate various national media systems. Offered by Communication (p. 313). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 465: Topics in Communication and Gender. 3 credits.
Topics may include gender and culture, women as rhetors, male and female communication, and communication and gender roles. Examines specific interests, ideally in seminar setting. Notes: May be repeated for credit when topic is different with permission of department. Offered by Communication (p. 313). May be repeated within the term.

Recommended Prerequisite: 60 credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 475: Journalism Law. 3 credits.
Examines law as it relates to working journalist. Topics include libel, invasion of privacy, free press and fair trial, First Amendment, broadcast regulation, access to media, advertising, and effect of new technologies on these issues. Uses case approach to study leading court decisions in mass media law. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: 60+ credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 479: Digital Media and Web Design Capstone. 3 credits.
Student team-based experience grounded in the work of the preceding courses in the digital media and web design minor. Each individual student will produce a portfolio of digital media and web-design related products and features that demonstrate core competencies in coding, design, content, and accessibility. Students will work in cross-disciplinary teams to carry out a client-based web design project, the process and outcomes of which will also be represented in the individual portfolio. Offered by Communication (p. 313). Limited to two attempts. Equivalent to ENGH 479.

Recommended Prerequisite: Before enrolling in the Capstone seminar, students need to have completed all required courses for the Digital Media and Web Design Minor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 480: College to Career: Strategies for Transition. 1 credit.
Designed to assist soon-to-be graduates in the employment transition process. Fundamental to the course are effective communication skills, creative research, and the desire to actively and aggressively seek meaningful employment. Offered by Communication (p. 313). Limited to three attempts.

Recommended Prerequisite: 60+ credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 487: Washington Media Institute. 3 credits.
Special topics offered through the Washington Media Institute. Students must be enrolled in the communication department's professional experience in communication minor. Notes: May not be applied to the communication major or minor. Offered by Communication (p. 313). May be repeated within the degree for a maximum 15 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 490: Honors Research Methods in Communication. 3 credits.
Honors version of COMM 400. Notes: Students may not receive credit for both COMM 400 and 490. Offered by Communication (p. 313). Limited to three attempts. Equivalent to COMM 400.

Specialized Designation: Scholarly Inquiry.

Recommended Prerequisite: Acceptance to pursue honors in the major.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 491: RS: Honors Research Project in Communication. 3 credits.
Completion of independent honors research project under the guidance of the student's faculty sponsor. Offered by Communication (p. 313). May be repeated within the term.

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: Completion of COMM 490 with minimum grade of 3.0 and approval of honors project prospectus.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

COMM 498: RS: Research Projects in Communication. 3 credits.
Students plan, execute, and present an empirical research project exploring communication issues of their own choosing. Offered by Communication (p. 313). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: Research/Scholarship Intensive

Schedule Type: Independent Study

Registration Restrictions:
Enrollment is limited to students with a major in Communication.

Enrollment limited to students in a Bachelor of Arts degree.
This course is graded on the Undergraduate Regular scale. (p. 84)

**COMM 499: Independent Study in Communication.** 1-3 credits. Study of a selected area in communication. Independent study application must be processed before start of semester in which work is to take place. Notes: May be repeated for credit with permission of director of undergraduate program. Communication courses at the 500 level open to post-baccalaureate students or advanced undergraduates with permission of department. Offered by Communication (p. 313). May be repeated within the term.

**Recommended Prerequisite:** 75 credits and permission of department.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

**COMM 504: Communication and Interpersonal Conflict.** 3 credits. Focuses on interpersonal interactions, including dyadic and small-group levels in various settings such as friendships, marriage, family, and workplace. Examines factors that generate conflicts and communication strategies and skills that help shape conflict interaction toward productive ends. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 506: Communication in International Organizations.** 3 credits. Analyzes communication variables as they relate to organizational and managerial functions in international organizations. Topics include developing understanding of how cultural differences influence managerial activities and learning to deal effectively with differences. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 530: Theories of Small Group Communication.** 3 credits. Advanced-level theory and practice of small group interaction. Examines current research with a focus on learning applications of theories to relevant settings. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 590: Seminar in Communication.** 3 credits. Intensive study of specific topics; content varies. Notes: May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the term.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**COMM 600: Introduction to Graduate Studies.** 3 credits. Offers a broad introduction to the field of communication in terms of communication-based theories and research. Offered by Communication (p. 313). May not be repeated for credit.

**Recommended Prerequisite:** Admission to graduate program in communication or permission of graduate program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Communication.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 601: Communication in Professional Relationships.** 3 credits. Explores theoretical perspectives and relevant research to communication strategies and skills for various professional roles and situations. Relates theoretical foundations to practice, assessing theories and applications in individual professional fields. Offered by Communication (p. 313). May not be repeated for credit.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

COMM 602: Theories and Research of Mass Communication. 3 credits.
Explores theories that have guided development of mass media. Emphasizes major scientific and humanistic approaches to mass media effects. Offered by Communication (p. 313). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

COMM 604: Communication Research Practicum. 3 credits.
Helps communication master's students determine focus for program of study, thesis, and projects. Includes readings in applied communication research and exercises in topic selection, analysis. Offered by Communication (p. 313). May not be repeated for credit.

Recommended Prerequisite: COMM 634 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

COMM 605: Intercultural Communication. 3 credits.
Analyzes communication variables related to communication across cultures. Topics include nonverbal communication, time conceptualizations, perceptions and attitudes, values, social organization patterns, cultural norms, language, ethics, conflict across cultures, and research in intercultural communication. Offered by Communication (p. 313). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 631:** Approaches to Group Facilitation. 3 credits.
Introduces various theoretical and practical approaches to group facilitation with in-depth focus and practice in one approach. Students participate in group sessions, analyze videotapes of decision-making groups, and practice methodologies for facilitating group interaction. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 632:** Persuasion Theory. 3 credits.
Introduces students to the processes and effects of persuasive communication. Covers key theories of persuasion, behavior change, information processing, message effects, as well as important frameworks that guide the practice of persuasion in applied settings. Particular attention is paid to message features that generate predictable effects and how such effects may vary across different communicative situations. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 634:** Theories of Interpersonal Communication. 3 credits.
Analyzes contemporary theories, concepts, and approaches to improving interpersonal communication. Examines interpersonal communication research. Offered by Communication (p. 313). May not be repeated for credit.

**Recommended Prerequisite:** COMM 301 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 635:** Organizational Communication. 3 credits.
Analyzes communication systems, processes in public and private organizations. Topics include conflict management, group decision making, interviewing, technical presentations, and using various channels for improving internal and external communication. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 636:** Communication Consulting. 3 credits.
Investigates theories providing foundation for communication consulting. Provides theoretical information and mechanisms for application necessary to modify communicative behavior within organizations. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 637:** Risk Communication. 3 credits.
Research on sharing information about physical hazards such as toxic waste, radiation, disease, injury, biohazards. Topics include communication concerning workplace safety, environmental problems, risk assessments, and scientific uncertainties. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 639: Science Communication.** 3 credits.
Reviews research on best practices in science communication for scientists and communication professionals. Explores theory on conceptualizing science communication as disseminating knowledge, promoting informed decision making, involving citizens in scientific research (i.e., citizen science), promoting legislative and individual actions, or creating entertainment. Students practice communicating complex science and designing contexts for public engagement with scientific research. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 640: Controversies in Science Communication.** 3 credits.
Examines the communication implications related to selected current topics of scientific controversy. Offered by Communication (p. 313). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 641: Advanced Communication Skills for STEM.** 3 credits.
Examines the specific oral, written, and mediated communication competencies needed by STEM professionals in modern society. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 642: Science and the Public.** 3 credits.
Examines the relationship between science and society, with a particular emphasis on the role of communication in shaping public opinion on issues related to science and technology. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 644: Analysis and Criticism of Science Journalism.** 3 credits.
Examines media coverage of technically complex topics in science, social science, environment, health and medicine, and technology. Explores the influence of institutional media practices on news about science and technology. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 650: Research Methodologies in Communication.** 3 credits.
Introduces various research methods used by communication professionals. Focus on achieving understanding and knowledge of social scientific research, qualitative and quantitative, and critical analysis through use and application. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment limited to students in the LA-MA-COM, LA-MAIS-ISIN or LA-PHD-COM programs.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
COMM 653: Graduate Seminar in Instructional Communication. 3 credits. Investigates theoretical and practical implications of instructional communication. Exposes graduate students to communication principles and practices of teaching college courses at upper and lower divisions. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

COMM 655: Theory and Practice of Digital Communication. 3 credits. Applies visual communication theory to the production of digital media. Emphasizes theories in nonfiction digital filmmaking, sound theory for audio production, and ethical and aesthetic topics in digital storytelling. Provides a community engaged learning component allowing students to partner with community organizations to produce digital media tools that address issues of social importance. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

COMM 660: Climate Change and Sustainability Communication Campaigns. 3 credits. Offers practical application, skill development, and theoretical basis of communication campaigns developed in response to global warming and other threats to sustainability. Focuses on purposive campaigns to promote changes in individual behavior and public policy. Offered by Communication (p. 313). May not be repeated for credit.

**Specialized Designation:** Green Leaf Focused Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

COMM 670: Social Marketing. 3 credits. Offers conceptual overview of social marketing, marketing methods designed to influence people to behave in ways that benefit society. Develops skills necessary to conduct a social marketing initiative and provides an opportunity for practical application of those skills. Offered by Communication (p. 313). May not be repeated for credit.

**Specialized Designation:** Green Leaf Related Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

COMM 690: Special Topics in Communication. 3 credits. Explores contemporary issues in communication theory, research, and practice. Notes: Topics vary. May be repeated when topic is different. Offered by Communication (p. 313). May be repeated within the term for a maximum 15 credits.

**Specialized Designation:** Green Leaf Related Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

COMM 694: Communication Internship. 3 credits. Students work in approved, professional-level communication position, meeting regularly with internship supervisor from department. Requires paper, journal, minimum 60 hours work for each credit of enrollment. Students usually enroll in internships at end of program of study. Offered by Communication (p. 313). May not be repeated for credit.

**Recommended Prerequisite:** 18 graduate credits and permission of department.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

COMM 696: Directed Readings and Research. 1-3 credits.
Reading and research on specific topic under direction of faculty member. Written report required; oral or written exam may be required. Offered by Communication (p. 313). May be repeated within the term for a maximum of 6 credits.

Recommended Prerequisite: Permission of department.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

COMM 697: Independent Production. 1-3 credits.
Media or creative production activities under direction of faculty member. Requires completed production; written report, oral exam may be required. Offered by Communication (p. 313). May not be repeated for credit.

Recommended Prerequisite: Permission of department.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

700 Level Courses

COMM 700: Building Social Science Theory. 3 credits.
Explores the process of developing and testing social science theories. Emphasizes the components and mechanisms of theory - such as variables and causality - in a manner intended to inform rigorous social science inquiry using quantitative or qualitative methods. Offered by Communication (p. 313). May not be repeated for credit.

Recommended Prerequisite: COMM 650B- and 700B-.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

COMM 701: Communication Science Research Practicum. 3 credits.
Coordinates students into a research team to propose, test and report the findings of a two or three variable hypothesis. Conduct a research project that will make a publishable contribution to the communication science literature. May not be repeated for credit. Offered by Communication (p. 313). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: COMM 650B- and 700B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

COMM 705: Intercultural Health and Risk Communication. 3 credits.
Examines intercultural health and risk communication interventions; including health communication campaigns, public relations and advertising for health organizations, and how the media and Internet present health information. Offered by Communication (p. 313). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

COMM 706: Strategic Communication. 3 credits.
Examines commonalities of strategic communication campaigns across fields (e.g., military, diplomacy, health, politics, marketing, public relations) in order to understand strategic communication, compare fields, and emphasize strategic and evaluative research across fields. Offered by Communication (p. 313). May not be repeated for credit.

Recommended Prerequisite: COMM 630 or permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

COMM 716: International Public Relations. 3 credits.
Provides a survey of international public relations with an emphasis in three areas: applied knowledge for actual international practice, relevant theory, and ethical issues. Offered by Communication (p. 313). May not be repeated for credit.

Recommended Prerequisite: COMM 706 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 720:** Consumer-Provider Health Communication. 3 credits.
Explores relational health communication research and practice. Examines the role of interpersonal communication in health care delivery, health promotion, disease prevention, risk communication, and promoting personal and psychosocial well-being. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Comm 721:** E-Health Communication. 3 credits.
Explores the use of computer-mediated communication technologies in health care and health promotion, including examination of technology in health information dissemination, health education, health communication interventions, and the management of health care delivery. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Comm 725:** Qualitative Methods. 3 credits.
Examines qualitative research in communication. Emphasis is placed on techniques of naturalistic inquiry such as observation, interviewing, focus group methods, and ethnography, as well as tools for analyzing and reporting qualitative data. Offered by Communication (p. 313). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Comm 735:** Crisis Communication. 3 credits.
Examines crisis communication contexts with a particular emphasis on the role of communication in a variety of crises and how the media and Internet present crisis information to the public. Offered by Communication (p. 313). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 750:** Research Methods II. 3 credits.
Extends basic research knowledge and skills learned in COMM 650 Research Methods I. Students will be taught to analyze and synthesize literature, develop theoretical linkages, and construct measurement scales. Offered by Communication (p. 313). May not be repeated for credit.

**Recommended Prerequisite:** COMM 650.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**COMM 750:** Research Methods II. 3 credits.
Extends basic research knowledge and skills learned in COMM 650 Research Methods I. Students will be taught to analyze and synthesize literature, develop theoretical linkages, and construct measurement scales. Offered by Communication (p. 313). May not be repeated for credit.

**Recommended Prerequisite:** COMM 650.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)
COMM 799: Master’s Thesis. 1-6 credits.
Original research endeavor related to student’s concentration in communication under supervision of faculty committee. Offered by Communication (p. 313). May be repeated within the degree.

Recommended Prerequisite: 24 graduate credits and approval of thesis proposal by faculty committee.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

COMM 800: Studies for the Doctor of Philosophy in Education. 3-6 credits.
Program of studies designed by student’s discipline director and approved by doctoral committee. Students participate in research activity of discipline director and write paper reporting original contributions. Offered by Communication (p. 313). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

COMM 820: Health Communication Campaigns. 3 credits.
Explores use of communication campaigns to promote health and reduce health risks; examines how health communication campaigns are designed, implemented, and evaluated; and describes the role of communication research throughout the campaign process. Offered by Communication (p. 313). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

COMM 890: Special Topics in Communication. 3 credits.
Selected topics reflecting specialized areas in communication. Notes: Topics vary. May be repeated for credit when topic is different. Offered by Communication (p. 313). May be repeated within the degree.

Recommended Prerequisite: PhD rank or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

900 Level Courses

Development of a research proposal that constitutes the basis for a doctoral dissertation. Offered by Communication (p. 313). May be repeated within the degree.

Recommended Prerequisite: Approval of program director.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Research on an approved dissertation topic under the direction of dissertation committee. Notes: No more than 18 credits of COMM 998 and 999 may be applied to doctoral degree requirements. Offered by Communication (p. 313). May be repeated within the degree.

Recommended Prerequisite: COMM 998.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.
Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Computational Science and Informatics (CSI)

500 Level Courses

CSI 500: Computational Science Tools. 3 credits.
Introduces computer skills and packages commonly used in quantitative scientific research. Notes: CSI 601 and CSI 602, including additional material, have merged to create CSI 500. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Recommended Prerequisite: 1 year of college calculus, knowledge of matrix algebra, and computer programming.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 501: Introduction to Scientific Programming. 3 credits.
Introduces and reviews programming in C and FORTRAN with emphasis on the aspects used in the computational and data sciences. Conducted through a combination of both lecture and interactive computer laboratory. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 590: Quantitative Foundations for Computational Sciences. 3 credits.
Accelerated review of mathematical tools for scientific applications and analysis. Topics include vectors and matrices; differential and difference equations; linear systems; Fourier, Laplace, and Z-transforms; and probability theory. Notes: Not applicable to 48-credit course total for CSI PhD. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to SYST 500.

Recommended Prerequisite: MATH 213 and 214.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 597: Topics in Science and Engineering Simulation. 3 credits.
Covers selected topics in Science and Engineering simulation, not covered in fixed content computational sciences and informatics courses. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

CSI 600: Quantitative Foundations for Computational Sciences. 3 credits.
Accelerated review of mathematical tools for scientific applications and analysis. Topics include vectors and matrices; differential and difference equations; linear systems; Fourier, Laplace, and Z-transforms; and probability theory. Notes: Not applicable to 48-credit course total for CSI PhD. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to SYST 500.

Recommended Prerequisite: MATH 213 and 214.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 606: Scientific Graphics and Visualization Tools. 1 credit.
An introduction into the use of scientific visualization tools for data analysis. Use of specific packages will be taught. Packages will include PV-WAVE, S-Plus, XV, XMGR, and the pnm tools on a rotating basis. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Recommended Prerequisite: Competency in Linux of permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 629: Topics in Continuum Systems. 3 credits.
Covers selected topics in the computational aspects of continuum systems not covered in fixed-content courses in dynamical systems. Possible topics are smooth-particle hydrodynamics, radiation hydrodynamics, algorithms for continuum systems, adaptive grids for
continuum computations, spectral methods in computational fluid dynamics, algorithms for concurrent machines, formation of high energy particle jets in astrophysical applications, application to Earth atmospheric problems, and flow considerations in molten materials. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 638: The Policy Process for Scientists**. 2 credits.
Introduces relationship among government, science, scientists, and issues and processes that shape science policy. Emphasizes examples taken from space weather and meteorology. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 639: Ethics in Scientific Research**. 3 credits.
Reviews purpose of scientific research and principles for evaluating ethical issues. Teaches skills for survival through training in moral reasoning and responsible conduct. Discusses ethical issues and applying critical-thinking skills to design, execution, and analysis of experiments. Issues include using animals, humans in research; ethical standards in computer community; research fraud; and currently accepted guidelines for data ownership, manuscript preparation, and conduct of those in authority. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 662: Introduction to Space Weather**. 3 credits.
Introduction to space weather involving systems such as the sun, the heliosphere, and the Earth's magnetosphere and ionosphere. Covers the solar magnetic field, solar flares, coronal mass ejections, particle acceleration mechanisms, the solar wind, and the Earth's magnetic field, radiation belt, geomagnetic storms, and ionospheric disturbances. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** PHYS 303, PHYS 305, PHYS 307, MATH 213, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 670: Economic Systems Design**. 3 credits.
Introduces analytical and engineering principles used to develop exchange systems. Covers behavioral aspects of auction systems; matching, assignment, and transportation problems; and information markets. Introduces methods for testbedding systems using experimental economics. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Course in linear and nonlinear optimization, and course in linear algebra, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 672: Statistical Inference**. 3 credits.
Fundamental principles of estimation and hypothesis testing. Topics include limiting distributions and stochastic convergence, sufficient statistics, exponential families, statistical decision theory and optimality for point estimation, Bayesian methods, maximum likelihood, asymptotic results, interval estimation, optimal tests of statistical hypotheses, and likelihood ratio tests. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to STAT 652.

**Recommended Corequisite:** STAT 554.

**Registration Restrictions:**

**Required Prerequisite:** STAT 544B.
**CSI 674: Bayesian Inference and Decision Theory.** 3 credits.
Introduces decision theory and relationship to Bayesian statistical inference. Teaches commonalities, differences between Bayesian and frequentist approaches to statistical inference, how to approach statistics problem, and how to combine data with informed expert judgment to derive useful and policy relevant conclusions. Teaches theory to develop understanding of when and how to apply Bayesian and frequentist methods; and practical procedures for inference, hypothesis testing, and developing statistical models for phenomena. Teaches fundamentals of Bayesian theory of inference, including probability as a representation for degrees of belief, likelihood principle, use of Bayes Rule to revise beliefs based on evidence, conjugate prior distributions for common statistical models, and methods for approximating the posterior distribution. Introduces graphical models for constructing complex probability and decision models from modular components. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to OR 664, SYST 664.

**Recommended Prerequisite:** STAT 544, STAT 554, or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 678:** Times Series Analysis and Forecasting. 3 credits.
Modeling stationary and nonstationary processes; autoregressive, moving average and mixed model processes; hidden periodicity models; properties of models; autocovariance and autocorrelation functions, and partial autocorrelation function; spectral density functions; identification of models; estimation of model parameters, and forecasting techniques. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** STAT 544\(^B\) and 554\(^B\).

\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 685:** Fundamentals of Materials Science. 3 credits.
Covers fundamentals of materials science with emphasis on physical topics including crystal structure and symmetry, dislocation theory, theory of interfaces, multicomponent phase diagrams, theory of phase transformations, nano-materials, metallic glasses. Includes a term project, assignments from current literature, and application of computation in materials science. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to PHYS 615.

**Recommended Prerequisite:** Undergraduate degree in electrical or mechanical engineering, materials science, physics, chemistry or related disciplines; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
CSI 687: Solid State Physics and Applications. 3 credits.
Covers crystal structures, binding, lattice vibrations, free electron model, metals, semiconductors and semiconductor devices, superconductivity, and magnetism. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to PHYS 512.

**Recommended Prerequisite:** PHYS 502 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CSI 690: Numerical Methods. 3 credits.
Covers computational techniques for solving science, engineering problems. Develops algorithms to treat typical problems in applications, emphasizing types of data encountered in practice. Covers theoretical development as well as implementation, efficiency, and accuracy issues in using algorithms and interpreting results. When applicable, uses computer graphical techniques to enhance interpretation. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to MATH 685, OR 682.

**Recommended Prerequisite:** MATH 203 and 214 or equivalent, and some programming experience.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CSI 695: Scientific Databases. 3 credits.
Study of database support for scientific data management. Covers requirements and properties of scientific databases, data models for statistical and scientific databases, semantic and object-oriented modeling of application domains, statistical database query languages and query optimization, advanced logic query languages, and case studies such as the human genome project and Earth-orbiting satellites. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** INFS 614 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

CSI 701: Foundations of Computational Science. 3 credits.
Covers mapping of mathematical models to computer software, including all aspects of developing scientific software such as architecture, data structures, advanced numerical algorithms, languages, documentation, optimization, validation, verification, and software reuse. Examples in bioinformatics, computational biology, computational physics, and global change demonstrate scientific advances enabled by computation. Class projects involve working in teams to develop software that implements mathematical models, using software to address important scientific questions, and conducting computational experiments with it. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Competency in UNIX and programming at CSI 501 level, and CSI 690; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CSI 702: High-Performance Computing. 3 credits.
Hardware and software associated with high-performance scientific computing. Computer architectures, processor design, programming paradigms, parallel and vector algorithms. Emphasizes importance of software scalability in science problems. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Competency in Linux and programming at CSI 501 level or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CSI 703: Scientific and Statistical Visualization. 3 credits.
Covers visualization methods used to provide new insights and intuition concerning measurements of natural phenomena and scientific and mathematical models. Presents case studies from myriad disciplines. Topics include human perception and cognition, introduction to graphics laboratory, elements of graphing data, representation of space-time and vector variables, representation of 3-D and higher dimensional data, dynamic graphical methods, and virtual reality. Work on a visualization project required. Emphasizes software tools on Silicon Graphics workstation, but other workstations and software may be used. Offered
by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** STAT 554 or CS 551, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 709: Topics in Computational Sciences and Informatics.** 3 credits.
Covers selected topics in computational sciences and informatics not covered in fixed-content computational sciences and informatics courses. Offered by Computational & Data Sciences (p. 676). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** Admission to the PhD program and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 711: Chemical Thermodynamics and Kinetics.** 3 credits.
Advanced study of thermodynamics and kinetics. Covers application of kinetics to elucidation of reaction mechanisms and application of statistical thermodynamics to theory of elementary reaction rates. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to CHEM 633.

**Recommended Prerequisite:** CHEM 331 and 332.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 712: Introduction to Solid Surfaces.** 3 credits.
Includes gas absorption isotherms, surface-area measurement techniques, real and clean surfaces, physisorption and chemisorption, methods of gas absorption and desorption, measurement of heats of adsorption, desorption kinetics, electron spectroscopies and their surface sensitivities, instrumentation needed, and principles of vacuum technology. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to CHEM 728.

**Recommended Prerequisite:** CHEM 422 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 713: Quantum Chemistry.** 3 credits.
Illustrates fundamental concepts of quantum mechanics with applications to chemical systems, including atomic and molecular electronic structure and properties, molecular symmetry, and intermolecular forces. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 332.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 714: Spectroscopy and Structure.** 3 credits.
Covers quantum mechanics of the interaction of atoms and molecules with electromagnetic radiation. Also covers modern spectroscopic methods as applied to the elucidation of molecular structure and dynamics. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CHEM 332.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 719: Topics in Computational Chemistry.** 3 credits.
Covers selected topics in computational chemistry not covered in fixed-content computational chemistry courses. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** Permission of Instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 720: Fluid Mechanics.** 3 credits.
Covers basic and advanced fluid mechanics and continuous hypothesis to define fluids. Introduces tensor analysis; Euclidean and Lagrangian
Representations of fluid flow; Laplace's equation; continuity equation; Navier-Stokes equations; Bernoulli's theorem and Crocco's form of the equations; steady and unsteady flows; potential, incompressible, and compressible flows; gravity and sound waves; gas dynamics; and viscous flows. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSI 690 and CSI 780, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 721: Computational Fluid Dynamics I.** 3 credits.
Covers fundamentals including spatial and temporal approximation techniques for partial differential equations, solution of large systems of equations, data structures, solvers of the Laplace/ full potential equation, and simple Euler solvers. Includes two major projects: Laplace solver and 2-D Euler solver on unstructured grids. Students expected to write their own codes. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Course in partial differential equations such as MATH 678 or equivalent; knowledge of linear algebra at level of MATH 603 or CSI 740/MATH 625; coding experience in FORTRAN or C; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 722: Computational Fluid Dynamics II.** 3 credits.
Covers more advanced topics in computational fluid dynamics, including high-resolution schemes for hyperbolic PDEs, advanced Euler solvers, Navier-Stokes solvers, grid generation, adaptive mesh refinement, efficient use of supercomputing hardware, and future trends. Projects include topics in grid generation and adaptive refinement. Students expected to write their own codes. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSI 721 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 723: Fluid Mechanics II.** 3 credits.
Covers gas dynamics, shock waves, method of characteristics, boundary layer flows, instabilities, and turbulence modeling. Special topics include biological, non-Newtonian, and free surface flows; aeroelasticity; and magneto-hydrodynamics. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSI 720 or Permission of Instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 739: Topics in Bioinformatics.** 3 credits.
Selected topics in bioinformatics not covered in fixed-content bioinformatics courses. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 740: Numerical Linear Algebra.** 3 credits.
Covers computational methods for matrix systems; theory and development of numerical algorithms for the solution of linear systems of equations, including direct and iterative methods; analysis of sensitivity of system to computer round off; and solution of least squares problems using orthogonal matrices. Also covers computation of eigenvalues and eigenvectors, singular value decomposition, and applications. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to MATH 625.

**Recommended Prerequisite:** MATH 203 and some programming experience.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 742: The Mathematics of the Finite Element Method.** 3 credits.
The finite element method is commonly used for developing numerical approximations to problems involving ordinary and partial differential equations. Course develops underlying mathematical foundation, examines specific types of finite elements, analyzes convergence rates and approximation properties, and uses method to solve important equations. Students develop their own codes and are expected to
complete independent projects. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** MATH 446 or 685, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

** CSI 744: Linear and Nonlinear Modeling in the Natural Sciences.** 3 credits.
Develops tools of mathematical modeling while carrying out numerical simulations. Considers examples from across the sciences. Topics include basic issues such as models, simplification, linearity, and nonlinearity; dimensionless parameters; dimensional analysis; models involving differential equations; examples from population growth and chemical kinetics; models involving partial differential equations; diffusion, transport, nonlinearity and shocks; probabilistic modeling; perturbation methods; extrapolation; and introduction to stability. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Permission of Instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

** CSI 747: Nonlinear Optimization and Applications.** 3 credits.
Introduction to practical aspects of nonlinear optimization. Covers applications of optimization algorithms to solving problems in science and engineering. Applications include data analysis, materials science, nanotechnology, mechanics, optical design, shape design, and trajectory optimization. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** MATH 213 and 216, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

** CSI 749: Topics in Computational Mathematics.** 3 credits.
Selected topics in computational mathematics not covered in fixed-content computational mathematics courses. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

** CSI 754: Earth Science Data and Advanced Data Analysis.** 3 credits.
Covers accessing and applying Earth observations and remote-sensing data for Earth system science research and applications. Major topics are data formats, analysis and visualization tools, advanced data analysis methods, and data applications. Also covers combining innovative information technology techniques and Earth science data to set up online data centers for accessing data through the web. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to GGS 754.

**Recommended Prerequisite:** GGS 579 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

** CSI 758: Visualization and Modeling of Complex Systems.** 3 credits.
Covers elements of modeling and analysis for scientific applications. Concentrates on sample projects and student-initiated projects to use visualization, image and graphical analysis as they apply to modeling of complex data sets and systems. Reviews methods of creating and generating analysis and visualization packages. Data sets from multiple sources will be used. Modeling and analysis accompanied by appropriate readings from current literature. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

** CSI 763: Statistical Methods in Space Sciences.** 3 credits.
Covers statistical and data analysis methods applicable to problems in space science, remote sensing, and astrophysics. Includes parametric and nonparametric hypothesis testing, parameter estimation, correlation analysis, time series analysis, spatial analysis, and image reconstruction. Emphasizes imperfect nature of actual data sets and hypothesis. Examples drawn from current space science research. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** ASTR 530 or permission of instructor.
Covers statistical mechanics concepts important in astrophysics. Presents unified approach to particle acceleration and interaction theory based on analytical and numerical analysis of Boltzmann and Liouville equations. Discusses computational methods relevant to particle transport problems, with emphasis on Fokker-landk and Monte Carlo solution techniques. Applications from space sciences include studies of cosmic ray acceleration, photon comptonization, particle transport in the near-Earth environment, energy transport in stellar atmospheres, and self-gravitating system dynamics. Offered by Computational & Data Sciences. (p. 676). May not be repeated for credit. Equivalent to ASTR 764.

Recommended Prerequisite: ASTR 530.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 771: Computational Statistics. 3 credits.
Covers basic computationally intensive statistical methods and related methods, which would not be feasible without modern computational resources. Covers nonparametric density estimation including kernel methods, orthogonal series methods and multivariate methods, recursive methods, cross-validation, nonparametric regression, penalized smoothing splines, the jackknife and bootstrapping, computational aspects of exploratory methods including the grand tour, projection pursuit, alternating conditional expectations, and inverse regression methods. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Registration Restrictions: Required Prerequisite: CSI 672B.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 772: Statistical Learning. 3 credits.
Focuses on statistical learning theory by introducing the statistical and optimization background essential for developing new efficient statistical learning algorithms. Also discusses applications of statistical learning algorithms to the solution of important problems in many areas of science. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Registration Restrictions: Required Prerequisites: STAT 652B or CSI 672B.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 775: Graphical Models for Inference and Decision Making. 3 credits.
Study and methods for inference and decision making in environments characterized by uncertain information. Covers graphical probability and decision models. Studies approaches to representing knowledge about uncertain phenomena, and planning and acting under uncertainty. Topics include knowledge engineering, exact and approximate inference in graphical models, learning in graphical models, temporal reasoning, planning, and decision-making. Practical model-building experience provided. Students apply what they learn to a project of their own choosing. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to OR 719.

Recommended Prerequisite: STAT 652 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 777: Principles of Knowledge Mining. 3 credits.
Principles and methods for synthesizing task-oriented knowledge from computer data and prior knowledge and presenting it in human-oriented forms such as symbolic descriptions, natural language-like
Offered by Computational & Data Sciences

mechanisms of soft solids, nanomaterials, and nonlinear dynamics. Includes Monte Carlo methods, transport processes. Includes modeling of ideal, dilute, and diatomic gases, their kinetic theory and transport processes. Includes several projects drawn from such areas as methods of electronic structure calculations, surface science, condensed matter, superconductivity, magnetism, Hubbard model, mesoscopic systems, and new developments such as superconductivity, magnetism, Hubbard model, mesoscopic systems, and

Recommended Prerequisite: INFS 614 or equivalent, or Permission of Instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 779: Topics in Computational Statistics. 3 credits. 
Selected topics in computational statistics not covered in fixed-content computational statistics courses. Offered by Computational & Data Sciences. (p. 676). May be repeated within the term.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 780: Principles of Modeling and Simulation in Science. 3 credits. 
Applies numerical methods to study of variety of physical systems, with emphasis on modeling and simulation. Develops numerical algorithms and simulation codes to gain understanding of mechanisms, processes in physical systems. Includes several projects drawn from such areas as quantum systems, chaos, percolation, random walks, aggregation mechanisms of soft solids, nanomaterials, and nonlinear dynamics. Offered by Computational & Data Sciences. (p. 676). May not be repeated for credit.

Recommended Prerequisite: Competency in programming at CSI 501 level or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 782: Statistical Mechanics for Modeling and Simulation. 3 credits. 

Recommended Prerequisite: CSI 690, or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 783: Computational Quantum Mechanics. 3 credits. 
Studies fundamental concepts of quantum mechanics from computational point of view, review of systems with spherically symmetric potentials, many electron atom solutions to Schrodinger’s equation, electron spin in many-electron systems, atomic structure calculations, algebra of many-electron calculations, Hartree-Fock self-consistent field method, molecular structure calculations, scattering theory computations, and solid-state computations. Offered by Computational & Data Sciences. (p. 676). May not be repeated for credit. Equivalent to CHEM 736, PHYS 736.

Recommended Prerequisite: PHYS 613/CSI 780, or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 786: Molecular Dynamics Modeling. 3 credits. 
Introduces simulation methods in physical chemistry sciences. Covers computational approaches to modeling molecular and condensed matter systems, including interatomic and molecular potentials, Molecular Dynamics methods, time averages, ensemble distributions, numerical sampling, thermodynamic functions, response theory, transport coefficients, and dynamic structure. Offered by Computational & Data Sciences. (p. 676). May not be repeated for credit.

Recommended Prerequisite: CSI 690 or CSI 780 or equivalent, or CHEM 633/CSI 711, or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

CSI 787: Computational Materials Science. 3 credits. 
Covers selected topics in computational aspects of condensed matter, such as methods of electronic structure calculations, surface science, molecular clusters, lattice dynamics, nanomaterials, semiconductors, superconductivity, magnetism, Hubbard model, mesoscopic systems, and...
liquids. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** PHYS 512/CSI 687 and PHYS 736/CSI 783, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 788:** *Simulation of Large Scale Systems.* 3 credits.

Study of diverse, large-scale physical systems with emphasis on modeling and simulation. Students will undertake several projects which will draw from such areas as many-body dynamics, atmospheric structure and dynamics, high-temperature plasmas, stellar structure, hydro dynamical systems, galactic structure and interactions, and cosmology. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSI 690 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 789:** *Topics in Computational Physics.* 3 credits.

Selected topics in computational physics not covered in fixed-content computational physics courses. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 796:** *Directed Reading and Research.* 1-6 credits.

Reading and research on specific topic in computational sciences and informatics under direction of faculty member. May be repeated for a total of 6 credits. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CSI 854:** *Hyperspectral Imaging Applications.* 3 credits.

Includes advanced hyperspectral concepts, multisystems tradeoffs, data collection and processing systems, imaging radar systems, laser systems, data fusion, calibration and data compression techniques, remote sensing and U.S. national policy. Applications include environmental, homeland security, medical, military, disaster mitigation, agricultural, and transportation topics. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to GGS 840.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)
CSI 873: Computational Learning and Discovery. 3 credits.
Presents modern ideas, theories, and methods for computational learning and discovery, along with relevant applications including medical diagnosis, Earth science data analysis, and neuronal modeling. Includes background elucidation of fundamental concepts in computational learning, addressing discovery of equations, theory of causality, and comparison with biological and cognitive models. Students make presentations on topics of their research interest and work on projects involving state-of-the-art systems. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to CSI 763.

Recommended Prerequisite: CS 580 or equivalent or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 876: Measure and Linear Spaces. 3 credits.
Covers measure theory and integration, convergence theorems, and the theory of linear spaces and functional analysis, including normed linear spaces, inner product spaces, Banach and Hilbert spaces, Sobolev spaces, and reproducing kernels. Topics include wavelets, applications to stochastic processes, and nonparametric functional inference. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Recommended Prerequisite: IT 776 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 877: Geometric Methods in Statistics. 3 credits.
Develops foundations of geometric methods for statistics. Topics include n-dimension Euclidian geometry, projective geometry, differential geometry, including curves, surfaces, and n-dimensional differentiable manifolds; and computational geometry, including computation of convex hulls, tessellations of two-, three-, and n-dimensional spaces, and finite element grid generation. Examples include applications to scientific visualization. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Recommended Prerequisite: STAT 690 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 885: Atomistic Modeling of Materials. 3 credits.
Advanced course focusing on utilization of atomistic modeling and computer simulation techniques to analyze structure of crystalline materials. Introduces modern methodology of largescale atomistic simulations and provides hands-on experience through numerous examples and homework assignments based on simulation packages. Provides background knowledge on theory of lattice defects (point defects, interfaces, dislocations) and thermal and mechanical properties of solid materials (plastic deformation, fracture). Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Recommended Prerequisite: CSI 685, 700, and 786, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 898: Research Colloquium in Computational Sciences and Informatics. 1 credit.
Presentations in specific research areas in computational sciences and informatics by faculty and staff members and professional visitors. Notes: A maximum 3 credits of CSI 898, 899, and 991 may be applied to PhD. Offered by Computational & Data Sciences (p. 676). May be repeated within the term.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CSI 899: Colloquium in Computational and Data Sciences. 1 credit.
Presentations in specific research areas in computational sciences and informatics by faculty and staff members and professional visitors. Notes: A maximum 3 credits of CSI 898, 899, and 991 may be applied to PhD. Offered by Computational & Data Sciences (p. 676). May be repeated within the term.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

900 Level Courses

CSI 971: Probability Theory. 3 credits.
A rigorous measure-theoretic treatment of probability. Includes expectation, distributions, laws of large numbers and central limit theorems for independent random variables, characteristic function convergence, and Markov chains. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to STAT 971.

Registration Restrictions:
Required Prerequisites: STAT 544B C and MATH 315C.
B C Requires minimum grade of C.
C Requires minimum grade of C.

Enrollment is limited to Graduate level students.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 972: Mathematical Statistics I. 3 credits.
Focuses on theory of estimation, exploring method of moments, least squares, maximum likelihood, and maximum entropy methods. Details methods of minimum variance unbiased estimation. Other topics include sufficiency and completeness of statistics, Fisher information, Cramer-Rao bounds, Bhattacharyya bounds, asymptotic consistency and distributions, statistical decision theory, minimax and Bayesian decision rules, and applications to engineering and scientific problems. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to STAT 972.

Registration Restrictions:
Required Prerequisites: (CSI 672B or STAT 652B) and (CSI 876B, IT 876B, STAT 876B, IT 971B or STAT 971B).
B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 973: Mathematical Statistics II. 3 credits.
Concentrates on theory of hypothesis testing. Topics include characterizing the decision process; simple versus simple hypothesis tests; Neyman Pearson Lemma; and uniformly most powerful, unbiasedness, invariance, randomized, and sequential tests. Applies testing principles to situations in normal distribution family and other families of distributions. Notes: Continuation of CSI 972. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit. Equivalent to STAT 973.

Registration Restrictions:
Required Prerequisite: CSI 972B.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 978: Statistical Analysis of Signals. 3 credits.
Advanced course in analysis of discrete- and continuous-time signals using methods of stochastic differential equation and time series. Presumes familiarity with methods of harmonic analysis and times series modeling. Topics include state-space modeling and eigenvalue processing, nonlinear modeling of signals, non-Gaussian stochastic process structure, detection and estimation of vector-valued signals, robust signal detection, and array processing and target tracking. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

Recommended Prerequisite: STAT 544 and 658, or equivalent.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 979: Advanced Topics in Computational Statistics. 3 credits.
Covers selected topics in computational statistics not covered in fixed-content computational statistics courses. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CSI 986: Advanced Topics in Large-Scale Physical Simulation. 3 credits.
Covers simulation of physical systems not covered in fixed-content physical simulation courses. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CSI 991: Seminar in Scientific Computing. 1 credit.
Considers selected topics in specific area of computational sciences and informatics not covered in fixed-content courses or as extension of fixed-content courses. Format for presentation is seminar with student participation. Notes: Maximum 3 credits of CSI 898, 899, and 991 may be applied to PhD. Offered by Computational & Data Sciences (p. 676). May be repeated within the term.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
Enrollment is limited to Graduate level students.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**CSI 998: Doctoral Dissertation Proposal.** 1-12 credits.
Covers development of research proposal under guidance of dissertation director and doctoral committee. Proposal forms basis for doctoral dissertation. Notes: No more than 12 credits of CSI 998 may be applied to doctoral degree. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree.

**Recommended Prerequisite:** Permission of advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CSI 999: Doctoral Dissertation.** 1-12 credits.
Involves doctoral dissertation research under direction of dissertation director. Notes: No more than 24 credits in CSI 998 and 999 may be applied to doctoral degree. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Computational Social Science (CSS) 600 Level Courses**

**CSS 600: Introduction to Computational Social Science.** 3 credits.
Graduate-level introduction to computational concepts, principles, and modeling approaches in social sciences, emphasizing simulations and elements of complexity theory as they apply to social phenomena. Survey includes systems dynamics, cellular automata, and agent-based models. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 610: Agent-based Modeling and Simulation.** 3 credits.
Provides hands-on examination of agent-based models in social sciences by examining and experimenting with variety of social-simulation projects conducted in modeling environments such as Swarm, Repast, Ascape, and MASON (Multi-Agent Simulator of Networks and Neighborhoods). Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600 or permission of instructor. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 620: Origins of Social Complexity.** 3 credits.
Examines when, where, and how social complexity emerged in human societies, emphasizing long-term analysis and comparative information processing in four civilizations of the ancient world: West Asia, East Asia, Andean Peru, and Mesoamerica. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 625: Complexity Theory in the Social Sciences.** 3 credits.
Examines social phenomena including language, terrorism, the Internet, warfare, and wealth based on power laws and far-from equilibrium nonlinear dynamics. Emphasizes data analysis, and modeling and interpreting complexity-theoretic dynamics. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 630: Comparative Computational Social Science.** 3 credits.
Applies comparative method for analyzing different types of computational models in the social sciences. Strong crossdomain and interdisciplinary emphasis akin to comparative economic systems, government, or linguistics. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600 or permission of instructor. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 635: Cognitive Foundations of Computational Social Science.** 3 credits.
Examines cognitive foundations and information processing in computational social agents and compares to human cognitive phenomena, including emotions, trust, and reciprocity. Emphasizes modeling project. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600 and CSS 610 or permission of instructor. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 640: Human and Social Evolutionary Complexity.** 3 credits.
Examines long-term evolution of human and societal complexity from global and cross-cultural perspective with emphasis on computational aspects leading to today's globalization. Global history from the computational social science perspective. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600, 620, and permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 643: Land-Use Modeling Techniques and Applications.** 3 credits.
Survey of literature on spatially explicit empirical models of land-use change. Hands-on experience developing and running simple models. Techniques include statistical models, mathematical programming models, cellular automata, agent-based models, and integrated models. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600 (may be taken concurrently) or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 645: Spatial Agent-Based Models of Human-Environment Interactions.** 3 credits.
Discusses key challenges in spatial modeling of human-environment interactions. Reviews agent-based modeling applications in urban and rural interactions, agriculture, forestry, and other areas. Hand-on development of simple ABM models. Investigates linkages between GIS and ABM. Notes: CSS 600 may be taken concurrently. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** GGS 631 or CSS 600 (may be taken concurrently) or permission of instructor.
**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 650: Physics Methods for Analyzing Social Complexity.** 3 credits.
Surveys complexity theoretic tools including strange attractors, Ising models, correlation functions, ergodic theory, power spectra, meanfield theory, and renormalization group. Emphasizes application to social, economic, or political systems. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600 and permission of instructor. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 655: Social Systems Dynamics.** 3 credits.
Introduces systems dynamics modeling of social systems governed by levels/rates or stocks/flows processes, with applications to global modeling, terrorism, urban dynamics, organizations, and social and international conflict. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 665: Complex Adaptive Systems in Public Policy.** 3 credits.
Students learn (i) basic concepts of complex adaptive systems (CAS) and how they can be applied to policy analysis, and (ii) how to use agent-based modeling as a tool for policy analysis. Address modeling issues on representing a system, agent decision making, validation, experiment design and analysis, as well as incorporating empirical data and methods to inform agent-based modeling. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 692: Social Network Analysis.** 3 credits.
Methods and applications that examine complex social systems based on relations, structures, connectivity, matrix representations, location, roles, interactions, and other network properties. Applications to terrorism, cognition, organizations, and other social phenomena. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 600. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 695: Agent-based Computational Economics.** 3 credits.
Present lectures on neoclassical economic theory as we investigate how to use agent technology to move beyond neoclassical specifications. Survey the most well-known results in agent-based economics. Read and present papers that are at the research frontier. A semester long research project. Will be the focal point of weekly model development (coding), data analysis, and writing. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 610. Undergraduate microeconomics.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 700 Level Courses

**CSS 710: Advanced Agent-based Modeling and Simulation.** 3 credits.
Cover topics related to large-scale agent models including how to 1) make use of available compute resources (CPU and memory) through threading and related code parallelization ideas and technologies; 2) sample data from large-scale models and calibrate/estimate such models, and 3) design experiments for models that are expensive to evaluate. Digress into other topics at the frontier of agent modeling. Offered by Computational & Data Sciences (p. 676). May not be repeated for credit.

**Recommended Prerequisite:** CSS 610.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**CSS 739: Topics in Computational Social Science.** 3 credits.
Selected topics in computational social science not covered in fixed-content computational social science courses. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**CSS 796: Directed Reading and Research.** 3 credits.
Reading and research on specific topic in computational social science under direction of a faculty member. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**CSS 798: Research Project.** 3 credits.
Project chosen and completed under guidance of graduate faculty member, resulting in acceptable technical report. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 12 graduate core requirement credits and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

### 800 Level Courses

**CSS 898: Research Colloquium in Computational Social Science.** 1 credit.
Presentations in specific research areas in computational social science by Center for Social Complexity-associated faculty and professional visitors. Notes: Maximum 3 credits of CSS 898 and 899 may be applied toward PhD. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CSS 899: Colloquium in Computational Social Science.** 1 credit.
Presentations in variety of areas of computational social science by Center for Social Complexity-associated faculty and professional visitors. Notes: Maximum 3 credits of CSS 898 and 899 may be applied toward PhD. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 2 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 900 Level Courses

**CSS 909: Advanced Topics in Computational Social Science.** 3 credits.
Covers selected topics in computational social science and socioinformatics not covered in fixed-content courses. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**CSS 996: Doctoral Reading and Research.** 1-12 credits.
Reading and research on specific topic in computational social science under direction of faculty member. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 6 credits.
Sciences (p. 676). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** Admission to the doctoral program and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CSS 998: Doctoral Dissertation Proposal.** 1-12 credits.
Covers development of research proposal, which forms basis for doctoral dissertation, under guidance of dissertation director and doctoral committee. Notes: Candidates must complete a combined minimum of 12 credits of doctoral proposal (CSS 998) and doctoral dissertation research (CSS 999), of which at least three credits must be of CSS 999. A combined maximum of 24 credits of CSS 998 and CSS 999 may be applied to the degree. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree.

**Recommended Prerequisite:** Permission of advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CSS 999: Doctoral Dissertation.** 1-12 credits.
Doctoral dissertation research under direction of dissertation director. Notes: Candidates must complete a combined minimum of 12 credits of doctoral proposal (CSS 998) and doctoral dissertation research (CSS 999), of which at least three credits must be of CSS 999. A combined maximum of 24 credits of CSS 998 and CSS 999 may be applied to the degree. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree.

**Recommended Prerequisite:** Approval of dissertation proposal.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Computational and Data Sciences (CDS)**

**100 Level Courses**

**CDS 101: Introduction to Computational and Data Sciences.** 3 credits.
Introduction to the use of computers in scientific discovery through simulations and data analysis. Covers historical development and current trends in the field. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Mason Core:** Natural Science with Lab (p. 142)

**Recommended Prerequisite:** Passing score on the math placement test.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 102: Introduction to Computational and Data Sciences Lab.** 1 credit.
Experiments in computational and data sciences explore the connections between on-going advances in the natural sciences and the rapid advances in computing and data handling. Lab exercises demonstrate the use of computers in analyzing data, in modeling science problems, and in creating numerical simulations across the science disciplines. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Mason Core:** Natural Science with Lab (p. 142)

**Recommended Prerequisite:** CDS 101. Concurrent enrollment is permitted.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 130: Computing for Scientists.** 3 credits.
Covers use of computers to solve practical scientific problems. Topics include creating effective scientific presentations, analysis of experimental data, online literature, data/information ethics, scientific modeling, and communication/collaboration tools. Designed to equip students with the knowledge and confidence they need to use future hardware and software systems both as students and throughout their scientific careers. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Mason Core:** Info Tech (complete) (p. 142)

**Recommended Prerequisite:** Passing score on the math placement test for MATH 110 or MATH 113.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 151: Data Ethics in an Information Society.** 1 credit.
Examination of ethical issues related to access and use of information and data in the Internet age, for the general student, with special emphasis on ethical issues that apply to the proper use and interpretation of scientific and technical information. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**CDS 201: Introduction to Computational Social Science.** 3 credits.
Undergraduate-level introduction to computational concepts, principles, and modeling approaches in social sciences, emphasizing simulations and elements of complexity theory as they apply to social phenomena.
Survey includes systems dynamics, cellular automata, and agent-based models. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 205: Introduction to Agent-based Modeling and Simulation.** 3 credits. Undergraduate-level introduction to Agent-based Modeling. Provides a background onto why agent-based models and hands-on examination of agent-based models in the social sciences by examining and experimenting with a variety of social simulation projects. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 230: Modeling and Simulation I.** 3 credits.
This course expands upon the foundation provided by CDS 130. Fundamental computational modeling techniques are used in a variety of science and engineering disciplines. Continued development of algorithmic thinking skills will be done using different computational environments. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Recommended Prerequisite:** CDS 130 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 251: Introduction to Scientific Programming.** 3 credits.
Focuses on elements of programming using the Fortran language and selected elements of the C language with emphasis on the aspects used in the computational and data sciences. Conducted through a combination of lecture and interactive computer laboratory. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Recommended Prerequisite:** CDS 130.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 290: Topics in Computational and Data Sciences.** 1-4 credits.
Selected topics in Computational and Data Sciences. May be accepted for credit by CDS majors and CDS minors. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 6 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 292: Introduction to Social Network Analysis.** 3 credits.
An introduction to methods and applications that examine social systems based on relations, structures, connectivity, location, roles, interactions, and other network properties. Example applications of Social Network Analysis covered will include politics, diseases, organizations, along with a variety of other social phenomena. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Mason Core:** Quantitative Reasoning (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 300 Level Courses

**CDS 301: Scientific Information and Data Visualization.** 3 credits.
The techniques and software used to visualize scientific simulations, complex information, and data visualization for knowledge discovery. Includes examples and exercises to help students develop their understanding of the role visualization plays in computational science and provides a foundation for applications in their careers. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Recommended Prerequisite:** CDS 101 or CDS 130 or equivalent, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 302: Scientific Data and Databases.** 3 credits.
Data and databases used by scientists. Includes basics about database organization, queries, and distributed data systems. Student exercises will include queries of existing systems, along with basic design of simple database systems. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** CDS 101 or CDS 130 or equivalent, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 303: Scientific Data Mining.** 3 credits.
Data mining techniques from statistics, machine learning, and visualization to scientific knowledge discovery. Students will be given a set of case studies and projects to test their understanding of this field and provide a foundation for future applications in their careers. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Recommended Prerequisite:** CDS 101 or CDS 130 or equivalent, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**CDS 403: Machine Learning Applications in Science.** 3 credits.
Covers practical applications in STEM areas of decision trees, rule-based classification, support vector machines, Bayesian networks, ensemble methods, and Neural Networks. Emphasis resides on the process of
applying machine learning effectively to a variety of problems. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Registration Restrictions:**

**Required Prerequisites:** CDS 230<sup>C</sup>, MATH 203<sup>C</sup> and CDS 303<sup>C</sup>.

- Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 410: Numerical Analysis II. 3 credits.**

**Recommended Prerequisite:** MATH 214 and MATH 446, proficiency in at least one computer programming language and computer operating system; or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 411: Modeling and Simulation II. 3 credits.**
Covers the application of modeling and simulation methods to various scientific applications, including fluid dynamics, solid mechanics, materials science, molecular mechanics, and astrophysics. Provides an introduction to modeling and simulation software, as well as high-performance computing. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Recommended Prerequisite:** MATH 446, PHYS 262 or PHYS 245, and a 200- or higher-level computational methods course, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 421: Computational Data Science. 3 credits.**
Covers the governing framework of data science for storing and processing big data in a distributed computer environment using simple programming models. Includes a comprehensive selection of tools from Hadoop, MapReduce, HDFS, Spark, Flink, Hive, HBase, MongoDB, Cassandra, Kafka. Students are expected to complete several computer projects using these cyber packages. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Recommended Prerequisite:** CDS 251 or equivalent computer programming language, and knowledge of computer operating system, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 468: Image Operators and Processing. 3 credits.**
An introductory examination of image mathematics, computational protocols, and applications. Topics include image operator notation, channel operators, informational operators, intensity operators, geometric operators, image transformations, frequency filtering, and image basis set expansions. This course will build the students' computational skill set as applied to visual data and create a library of image analysis scripts. Offered by Computational & Data Sciences (p. 676). Limited to two attempts.

**Recommended Prerequisite:** CDS 230 or equivalent.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 467: Electronic Structure Computations. 3 credits.**
Covers computational aspects of materials science, such as first-principles methods of electronic structure calculations of periodic solids, clusters, and molecules, as well as the use of empirical potentials. Examples will be drawn from metals, insulators, and semiconductors. Students will construct simple codes and be guided in the use of the more sophisticated available computational packages. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Recommended Prerequisite:** PHYS 308 or PHYS 402.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 490: Directed Study and Research. 1-3 credits.**
Students work under the guidance of a faculty member on an independent study or directed research project in the computational and data sciences. May be repeated in combination with CDS 491 for a total of 6 credits between the two classes. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 6 credits.
**Recommended Prerequisite:** Students must be CDS majors or minors in their junior or senior year and have permission of the instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CDS 491:** Internship. 1-3 credits.
On-the-job experience for CDS majors and minors working in industry and government laboratories, including summer programs. Supervision and approval of this course must be arranged with department before registering. May be repeated in combination with CDS 490 for a total of 6 credits between the two classes. Offered by Computational & Data Sciences (p. 676). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Students must be CDS majors or minors in their junior or senior year and have permission of the instructor.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CDS 492:** Capstone in Data Science. 3 credits.
This course is intended to provide a capstone experience for undergraduate students by synthesizing knowledge and experience that they acquired in earlier coursework to address a complex Data Science problem. This course requires analytical, collaborative, and communication skills. Offered by Computational & Data Sciences (p. 676). Limited to three attempts.

**Recommended Prerequisite:** CDS 230 and (CDS 301 or CDS 302) or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**Computer Forensics (CFRS) 500 Level Courses**

**CFRS 500:** Introduction to Forensic Technology and Analysis. 3 credits.
Presents an overview of technologies related to the digital forensics process. It will introduce software, analysis, operating systems, networking, and other aspects required as the base for forensic examiners. Not intended to be taken for credit by students in the MS CFRS/DFCA program. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CDS 130 or CDS 101; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CFRS 510:** Digital Forensics Analysis. 3 credits.
Explains computer forensics crime scene procedures, beginning with initial walk-through and evaluation; identification and collection of potential evidence; preparation of intrusion investigation; aspects of working with investigators and attorneys; reverse engineering with file identification and profiling; application of critical thinking in
determination of significance of artifacts; and analysis and reporting of evidence. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**CFRS 590: Special Topics in Computer Forensics.** 3 credits.

Presents selected topics from recent developments and applications in various computer forensics disciplines. Helps the professional computer forensics community keep abreast of current developments, and provides an applications-oriented introduction to emerging areas of computer forensics. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**600 Level Courses**

**CFRS 660: Network Forensics.** 3 credits.

Deals with the collection, preservation, and analysis of network-generated digital evidence such that the evidence can be successfully presented in a court of law (both civil and criminal). The relevant federal laws will be examined as well as private sector applications. The capture/intercept of digital evidence, the analysis of audit trails, the recording of running processes, and the reporting of such information will be examined. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to TCOM 660.

**Recommended Prerequisite:** TCOM 535 and a working knowledge of computer programming.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

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Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the following colleges:

- College of Science
- Schar School of Policy and Gov
- School of Business
- Volgenau School of Engineering

**CFRS 661: Digital Media Forensics.** 3 credits.

Covers the collection, preservation, and analysis of digital media such that the evidence can be successfully presented in a court of law (both civil and criminal). The relevant federal laws and private sector applications will be examined, as well as the seizure, preservation, and analysis of digital media. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to TCOM 661.

**Recommended Prerequisite:** CFRS 510 and a working knowledge of computer operating systems (e.g. CYSE 211, IT 342, or equivalent).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the following colleges:

- College of Science
- Schar School of Policy and Gov
- School of Business
- Volgenau School of Engineering

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**CFRS 663: Operations of Intrusion Detection for Forensics.** 3 credits.

Introduces students to network and computer intrusion detection and its relation to forensics. Addresses intrusion detection architecture, system types, packet analysis, and products. Presents advanced intrusion detection topics such as intrusion prevention and active response, decoy systems, alert correlation, data mining, and proactive forensics. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to TCOM 663.

**Recommended Prerequisite:** TCOM 535 and a working knowledge of computer programming.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CFRS 664: Incident Response Forensics.** 3 credits.
Addresses incident detection, response, and those aspects of computer forensics pertinent to the investigation of trade secret theft, economic espionage, copyright infringement, piracy, and fraud. Procedures for gathering, preserving, and analyzing forensic evidence are discussed in detail and are applied to both computer and network incident response forensics. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to TCOM 664.

**Recommended Prerequisite:** TCOM 535.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CFRS 698: Independent Reading and Research.** 1-3 credits.
Studies selected area in computer forensics under the supervision of a faculty member. A written report is required. Notes: No more than a total of six credits may be taken from a combination of CFRS 698 and CFRS 798 for credit within the CFRS program. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** At least two core courses in the CFRS program; and permission of instructor

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**CFRS 710: Memory Forensics.** 3 credits.
Introduces students to memory forensics, specifically the acquisition, investigation, and analysis of artifacts that reside in random access memory (RAM). Memory forensics provides an evidentiary wellspring of unique digital artifacts with regards to computer forensics and digital investigations (e.g. intrusion and malware incidents). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CFRS 510 and CFRS 660

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CFRS 720: Digital Audio Video Forensics.** 3 credits.
Presents an overview of digital multimedia (audio, images, video) forensic analysis to include methods, legal framework, software, hardware, and other aspects required for forensic/investigative examination. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CFRS 510 and CFRS 661

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CFRS 725: Linux Forensics.** 3 credits.
Presents the concepts, tools, and techniques used for forensic collection and analysis of Linux based operating systems and filesystems. Introduces, demonstrates, and discusses current research in the use of the Linux operating system and open source forensic tools with emphasis on developing custom functionality from multiple components. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CFRS 510 and CFRS 661

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
CFRS 730: Forensic Deep Packet Inspection. 3 credits.
Presents tools, techniques, and methodologies used to conduct deep packet forensic analysis. Application of industry best practices to both the collection and subsequent analysis of network packets with an emphasis on hands-on exercises using various digital analytical tools. Notes: Course will consist of exercises conducted in a lab environment with concurrent lectures (combined total of 3 credits for lab and lecture exercises). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 660.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 737: Cloud Forensics. 3 credits.
Introduces students to various cloud platforms and their featured and prepares students to acquire memory, disk and other cloud resources from cloud providers. Students will perform forensics on gathered artifacts. The course will take students from understanding what resources are available in a cloud provider to what artifacts exists and how to capture and analyze them. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 510 and CFRS 660 or permission from instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 760: Legal and Ethical Issues in IT. 3 credits.
Presents legal and ethics topics in the context of computer forensics. Includes legal principles, types of crimes, witness testimony, and forensics report writing. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 510

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 761: Malware Reverse Engineering. 3 credits.
Reviews disassembled code for potentially malicious binary, or piece of malware, in order to gain a better understanding of how a binary functions when executed. Analyzes behavioral aspects as they are executed in a controlled environment. Environment changes (file, system, network, process, etc.), network communications, communications with remote devices, and so on, are closely observed for actionable information. Notes: Course will consist of exercises conducted in a lab environment with concurrent lectures (combined total of 3 credits for lab and lecture exercises). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 510 and CFRS 660.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 762: Mobile Device Forensics. 3 credits.
Reviews forensic evidence contained within mobile devices, including address books, call logs, text messages, video files, audio files, and Internet history. Discusses procedures and technologies associated with mobile devices and how such procedures differ from traditional computer forensics. Analyzes collected data and correlates information with data from carriers. Hands-on exercises included. Notes: Course will consist of exercises conducted in a lab environment with concurrent lectures (combined total of 3 credits for lab and lecture exercises). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 510, CFRS 661.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 763: Registry Forensics - Windows. 3 credits.
Presents the concepts, tools, and techniques used for forensic collection, identification, and analysis of the Windows registry; review the structure and layout of the Windows registry and be introduced to the types of artifacts that can be found within; evaluate and interpret data from the Windows registry with emphasis on hand-on exercises. Notes: Course will consist of exercises conducted in a lab environment with concurrent lectures (combined total of 3 credits for lab and lecture exercises). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.
Recommended Prerequisite: CFRS 510, CFRS 661.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 764: Mac Forensics. 3 credits.
Presents the basic tools and techniques used to conduct a Mac and iOS forensic analysis. Application of industry best practices to both the collection and subsequent analysis of Mac iOS systems with an emphasis on hands-on exercises using currently available open-source and commercial tools. Notes: Course will consist of exercises conducted in a lab environment with concurrent lectures (combined total of 3 credits for lab and lecture exercises). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 510, CFRS 661.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 767: Penetration Testing in Computer Forensics. 3 credits.
Presents the concepts, tools, and techniques used for penetration testing, vulnerability exploitation, assessment, reporting, and forensics; teaches multiple attack vectors as well as the defensive measures protecting against such attacks; focuses heavily on post attack forensics allowing for a complete picture of the attack process. Notes: Course will consist of exercises conducted in a lab environment with concurrent lectures (combined total of 3 credits for lab and lecture exercises). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 660, CFRS 663.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 768: Digital Warfare. 3 credits.
Presents concepts of forensic attribution, context, and motivations behind computer attacks including those tied to cyber warfare and cyber terrorism activities. Tactics, techniques, and procedures of current cyber-attacks will be addressed. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 510, CFRS 660.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 769: Anti-Forensics. 3 credits.
Presents concepts of anti-forensics and obfuscation used in order to inhibit, frustrate, and mislead computer forensics examiners. Techniques, attempts, and actions used to negatively impact the existence, volume, or amount of evidence from digital repositories will be examined with goal of understanding and detecting anti-forensics. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 510, CFRS 660.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 770: Fraud and Forensics in Accounting. 3 credits.
Prepares students to undertake forensic accounting, a specialty practice area of accounting, in order to develop the necessary expertise to be prepared to give expert evidence in any resultant trial. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: CFRS 510.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the following colleges:
• College of Science
• Schar School of Policy and Gov
• School of Business
• Volgenau School of Engineering

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
CFRS 771: Digital Forensic Profiling. 3 credits.
Presents the application of criminal profiling to digital forensic evidence and cybercrime. Covers typologies of cyber criminals and reviews how the results of digital forensics can be used to profile individuals to better facilitate investigative interviews and prosecutions. Applies digital profiling to the identification of criminal behavior for insider threats and fraud. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CFRS 510, CFRS 661.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 772: Forensic Artifact Extraction. 3 credits.
Presents tools and techniques for the extraction and processing of digital artifacts from various media and formats. Foundations are presented and examples are developed for Windows, Linux, Mac, and media filesystems, files, RAM, Windows Registry, solid state devices, network traffic, and mobile devices. Emphasis on applications and hands-on exercises.

Notes: Course will consist of exercises conducted in a lab environment with concurrent lectures (combined total of 3 credits for lab and lecture). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CFRS 510, CFRS 661.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 773: Mobile Application Forensics and Analysis. 3 credits.
Presents mobile applications forensics and analysis. Analyze mobile applications on both the android and iPhone platforms in a lab environment in order to understand the weaknesses, pitfalls, and forensic challenges that exist or potentially exist when developing mobile client side software as well as identify forensic artifacts left behind from applications. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CFRS 762.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 775: Kernel Forensics and Analysis. 3 credits.
Introduces students to low level programming analysis and low level API’s. Students will learn the basics of kernel level device drivers, how to load and unload software from the kernel, modification of kernel objects, interrupt and call hooking and memory hiding techniques. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CFRS 761.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 780: Advanced Topics in Computer Forensics. 3 credits.
Teaches advanced topics from recent developments and applications in various areas of computer forensics. Enhances the professional engineering community’s understanding of breakthrough developments in specific areas of computer forensics. Active participation of the students is encouraged in the form of writing and presenting papers in various research areas of the advanced topic. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Permission of Instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 790: Advanced Computer Forensics. 3 credits.
Capstone course for the MS in computer forensics program. Students will be exposed to case studies and be required to conduct computer forensic investigations of digital media, intercepted packet switched data, and multisource log information to successfully complete each case study. Notes: To be taken in the last year prior to the completion of degree requirement. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.
Recommended Prerequisite: CFRS 660, 661, and (663 or 664), and a minimum of 18 credits in the MS Computer Forensics Program prior to registration.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CFRS 798: Research Project. 1-3 credits.
Conduct a research project to be chosen and completed under guidance of a graduate faculty member that results in an acceptable technical report. Notes: No more than a total of six credits may be taken from a combination of CFRS 698 and CFRS 798 for credit within the CFRS program. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: At least two core courses and a minimum of 12 credits in the CFRS program; permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Thesis
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Computer Game Design (GAME)

100 Level Courses
GAME 101: Introduction to Game Design. 3 credits.
Introductory overview of the game development process with an emphasis on game design. Through detailed study of historical and current games, students will learn the language and structure needed to develop their own game ideas. Students will learn the many aspects of a game development team and how each of these roles contributes to a game's overall design. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Mason Core: Arts (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 140: Applied Coding for Game Designers. 3 credits.
This entry-level course teaches students basic coding techniques used when implementing game logic. Through hands-on implementation of several simple text-based and 2D sprite-based games, this course prepares students for the coding challenges they will face in future GAME courses. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses
GAME 210: Basic Game Design. 3 credits.
Introduction to computer game design and development including a brief history of the field and current industry practice and production. Current major game design software, hardware, and associated tools are explored through simple game design projects. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 230: History of Computer Game Design. 3 credits.
History of computer game design including games as a new medium for education, entertainment, and communications. Aspects of the business of computer game publishing, game criticism, storytelling, interactive fiction, violence, and virtual communities will be explored. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 231: Computer Animation for Games. 3 credits.
2D and 3D modeling, character design, and animation projects are constructed using commercial and proprietary software and game design tool kits and engines. Simple texturing and models rigging for game animation will be discussed. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Schedule Type: Thesis
Registration Restrictions:
Required Prerequisites: GAME 210C and 230C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 232: Online and Mobile Gaming. 3 credits.
Class covers the history, practice, and design of online and mobile games. Class will discuss the current state of the smartphone applications and study the best practices to be successful in the applications market. Students will learn the development process for smartphone applications and develop original and innovative applications in a team-based environment. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Schedule Type: Lecture
Registration Restrictions:
Required Prerequisites: GAME 210C and 230C and (GAME 140C or CS 112C).
C Requires minimum grade of C.
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 250: Music for Film and Video. 3 credits.
Selection, editing, processing, and integration of sounds and music (post-production) for film, video, and animation. Time, frequency, and amplitude domain digital post-production techniques will be studied. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

GAME 300: Portfolio Preparation. 1 credit.
Student creates and refines a web portfolio to utilize throughout the course of study in presenting projects to aid in internship application and professional development. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: GAME 310C and 398C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 310: Game Design Studio. 3 credits.
Studio course that focuses on team-based game design. In collaboration with undergraduate students from VSITE's CS game design concentration, student teams design and develop complete computer-based and online serious and/or entertainment games. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: GAME 231C and 232C.
C Requires minimum grade of C.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 320: Digital Painting for Games. 3 credits.
Students develop observational, sketching, and rendering skills in the digital medium. Students practice digital painting from reference and imagination as they create convincing game surfaces and simple concept drawings. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Recommended Prerequisite: GAME 231 AVT 323 or AVT 333.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 330: Computer Game Platform Analysis. 3 credits.
Current and prototype consumer gaming platforms and consoles. Analysis will include conversion, transposition, and porting game media among most commercially produced platforms for analysis and comparisons. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Recommended Prerequisite: GAME 250C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 331: Consumer Gaming Platform Analysis Lab. 1 credit.
Current and prototype consumer gaming platforms and consoles. Analysis will include conversion, transposition, and porting game media among most commercially produced platforms for analysis and comparisons. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Recommended Prerequisite: CS 112

Registration Restrictions:
Required Prerequisites: GAME 310C and 331C.
* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 332: RS: Story Design for Computer Games. 3 credits.
Use of narrative structure and new media for designing computer game scenarios and stories. Traditional narrative techniques (text stories, novels, films) will be examined, as well as translations of the traditional to interactive, non-linear modes of communications. Analysis of current computer game story design theories, philosophies, and techniques will be covered. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive, Writing Intensive in Major

Recommended Prerequisite: Completion of 30 credits within major or permission of the instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 367: Writing and Editing Music and Sound. 3 credits.
Composition, editing, processing, and integration of voice, environmental sounds and music into non-linear computer game environments. Special emphasis will be placed on HD sound and music post-production and mixing (3 & 5 transducer point listening spaces), sequential composition and sample-splicing techniques, and the study of competing compression algorithms for sound and music. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: GAME 250C.
C Requires minimum grade of C.

Schedule Type: Lecture
GAME 431: Advanced Game Design Animation. 3 credits.
In collaboration with undergraduate students from VSITE’s CS game design concentration, student teams design and develop complete computer-based and online serious and entertainment games. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Recommended Prerequisite: GAME 398.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
GAME 491: Internship. 3-4 credits.
Placement in an appropriate internship within a program approved by a federal, state or commercial game design/publishing agency or firm. Notes: 135 hours of internship on-site work must be completed for 3 credits. 180 hours of internship on-site work must be completed for 4 credits. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 9 credits.
Recommended Prerequisite: GAME 489 and completion of 60 credits in major.
Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
GAME 492: Independent Study. 1-6 credits.
Advanced research, computer game design, or exploration of topical studies in computer game design. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.
Recommended Prerequisite: 6 credits in major.
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
GAME 493: Senior Game Design Capstone. 3 credits.
Student develops a case study of a publicly or commercially published computer game exploring the technical, economic, ethical, social and political ramifications on its intended target market. A public lecture of the case study is required. Notes: Students are required to complete 6 credits for the degree program. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 9 credits.

Mason Core: Capstone, Synthesis (p. 142)
Recommended Prerequisite: Completion of 60 credits in major. Students must be granted permission by the program director to take the course.
Registration Restrictions:
Enrollment is limited to students with a major in Computer Game Design.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
GAME 399: Special Topics. 1-4 credits.
In-depth presentation and exploration of topical studies in computer game design. Subject matter varies. Notes: May be repeated when topic is different. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: GAME 330, 367 or 398. Must be a Computer Game Design minor.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
GAME 400: Game Design Practicum. 3 credits.
Studio/lecture course focuses on the design strengths and weaknesses inherent in current entertainment and serious games. UI design, level design and map structure, scoring stratum, on-line support, game ecologies, gaming communities, and designing/writing documentation and specifications will be studied. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Recommended Prerequisite: GAME 330 and 331. Requires minimum grade of C.
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
GAME 599: Advanced Studies in Game Design. 1-4 credits.
Exploration of various issues in computer game design, including theoretical aspects of games studies and production. Notes: Topics and credit vary with instructor. May be repeated when taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: Admittance to BFA Game Design Program or instructor permission.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GAME 600: Research Methodologies in Game Design. 3 credits.
Graduate seminar focusing on development of independent research project in student’s area of emphasis. Explores principal methods of researching and documenting game design and game practice. Along with traditional methods of library research, emphasizes new processes of examination and investigation through the use of computer-aided research clouds and systems. Students will research and write a publishable paper following standard scientific research practice. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admittance to MA Game Design Program or instructor permission.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GAME 605: Game Design Graduate Seminar. 1 credit.
Students present their own research and projects, or the work of contemporary game designers for discussion and peer and faculty critiques. Special focus on developing professional public communication and presentation skills about contemporary issues in the game design and production fields. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 4 credits.

Recommended Prerequisite: Admittance to MA Game Design Program or instructor permission.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GAME 610: Game Production. 3 credits.
Studio and lecture course in the history, practice and design and production of computer games with an emphasis on serious games development. Students will research, design and develop a fully functioning game, for desktop, console, and/or mobile platforms in this two-semester course. This course will also support the thesis research and project development. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admittance to the MA Game Design Program or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GAME 617: Teaching Practicum. 3 credits.
Supervised classroom teaching in Mason’s Computer Game Design undergraduate program, or summer Game-focused Potomac Academy Program. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.
**Recommended Prerequisite:** GAME 605 and 3 credits of GAME 610.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 626: Game Business, Entrepreneurship and Practice.** 3 credits.
Combined lecture and studio course in discovering and developing entrepreneurial skill sets in the game design, production and publishing industry. Special focus will be given to developing communication skills, planning strategies, and nurturing the aptitude and attitudes that enable students to creatively solve problems, identify opportunities, and execute those opportunities in the game design and production industry. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** GAME 605 and GAME 610.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 628: Advanced Game Art.** 3 credits.
Studio and Lecture course in advanced computer game modeling processes and techniques. Advanced topics in modeling interactive characters and environments will be covered, including texture painting, photosourcing, and both low and high-polygon modeling. A broad variety of art styles and game production pipelines will be explored. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to MA Game Design Program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 630: Advanced Game Animation.** 3 credits.
Combined Studio and Lecture course in creating advanced animations for interactive games, with an emphasis on realtime characters. Non-bipedal motions, rotoscoping, rigging, and other advanced topics in animation will also be explored. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admittance to the MA Game Design Program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 635: Issues in Interactive Entertainment.** 3 credits.
Studio and lecture course in advanced design concepts for interactive game and entertainment platforms and systems. Microsoft's Kinect, Nintendo's Wii U, and Apple's AirPlay Mirroring will be studied. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** GAME 600, GAME 605 and 3 credits of GAME 610.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 638: Game Studio Management.** 3 credits.
Lecture Courses in managerial responsibilities and issues concerning successfully managing a small to mid-size game design studio in today's game industry marketplace. Human resources and personnel management, investor relations and board management, contract negotiations and development analysis, game design and production team oversight, research and development, budget management and realistic financial projections will be covered. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** GAME 610 and GAME 626.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 650:** *Advanced Music and Sound for Games.* 3 credits.
Combined studio and lecture course that will focus on the composition, editing, processing, mixing, and integration of sound assets, such as sfx, narration, and music into computer games. Time, frequency, and amplitude domain digital production and post-production techniques will be reviewed. Standard 2-channel, and 5.1 channel post-production/mixing, as well as contemporary middleware sound management applications will be studied. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admittance to the MA Game Design Program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 658:** *Interactive Game Systems Design.* 3 credits.
Studio and lecture course in advanced interactive games and simulations. A variety of entertainment platforms, systems, and their unique input devices will be explored, including augmented reality, social networks, and motion controllers. Games developed will use the latest online, mobile, and console platforms, as well as non-commercial prototype platforms. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** GAME 635.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**GAME 710:** *Graduate Internship.* 3 credits.
This course prepares students to succeed in the game design industry by assisting their placement in an appropriate internship within a program approved public or commercial game design/publishing agency or firm. A total of 180 hours of internship on-site work must be earned within the semester of registration. Each student is assigned a program internship coordinator, and an on-site internship supervisor. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** GAME 610 and GAME 617 and permission of Program Director.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 796:** *Directed Reading.* 1 credit.
Directed Reading must be taken in the fall of year two. Prior to the end of the first year, each student must identify a faculty member, based on interest and chosen topic that will serve as the student’s faculty mentor for the thesis research and writing, or project development process. Students should also plan to devote the summer between the two academic years of study to focused preliminary reading and research for the thesis paper or project. Notes: Directed Reading is overseen by the chosen faculty mentor, and will be tailored to each student's original thesis research paper or project. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** GAME 600 and GAME 605.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GAME 797:** *Proposal Writing.* 1 credit.
Proposal Writing is overseen by the chosen faculty mentor, and will be tailored to each student’s original thesis research paper or project. Prior to the end of the first year, each student must identify a faculty member, based on interest and chosen topic that will serve as the student’s faculty mentor for the Proposal Writing course to prepare for the thesis writing, or project development process. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** GAME 796.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**GAME 798:** *Project and Applied Research.* 3 credits.
The research project and supporting written document must reflect original research, development, and production of a complete serious game for graduate level work. The graduate project will involve a study of historical practice, and suitable for a public viewing experience and presentation. The written component will support the evolution of the
creative process, the historical context of the work, the intended purpose and intent, all supported with scholarly citations and references. Faculty mentors will guide the project development process. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Permission of Graduate Faculty Mentor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**GAME 799: Thesis.** 4 credits.
The thesis project and or written document must reflect original research, analysis, and writing appropriate for graduate level work. The thesis written document should be between 85 to 100 pages in length, following university library standards of format for graduate thesis. If a thesis project is chosen, the project should compose a complete game design document, a completed and QA tested functional game using a commercially available engine, and a public presentation. Faculty mentors will guide the thesis development process for each student. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Permission of Graduate Faculty Mentor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Computer Science (CS)**

**100 Level Courses**

**CS 100: Principles of Computing.** 3 credits.
This course is intended to help students learn to think in the manner necessary to fully grasp the nature and power of the digital world around us. The early era of the Internet and the personal computer led to the need for "computer literacy." Now, the changing nature of our global society requires that students learn new ways to think about problems and how to solve them, regardless of students’ specific fields of endeavor. Through this course, students will explore major issues related to the "big ideas" of computational thinking (namely, (i) Creativity, (ii) Abstraction, (iii) Data, (iv) Algorithms, (v) Programming, (vi) Internet, and (vii) Societal Impact), as well as how these issues will impact their future lives. Offered by Computer Science (p. 1049). Limited to two attempts.

**Mason Core:** Info Tech (complete) (p. 142)

**Registration Restrictions:**
Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 101:** Preview of Computer Science. 2 credits.
Offers a broad overview of computer science designed to provide students with an introduction to the field of computer science and an orientation to the Computer Science department and the computing environment at the university. Includes a project to introduce problem solving using computers. All computer science majors are required to take this course within their first year. Notes: All computer science majors are required to take this course within their first year. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major in Applied Computer Science or Computer Science.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CS 105:** Computer Ethics and Society. 1 credit.
Intensive introduction to legal, social, and ethical issues surrounding software development and computer use. Stresses professional conduct, social responsibility, and rigorous standards for software testing and reliability. Examines issues such as liability, ownership of information, and computer crime. Note: Students who have received credit for CS 305 or 306 should not register for CS 105. No credit will be given for CS 105 if a student has already received credit for CS 305 or 306. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 110:** Essentials of Computer Science. 3 credits.
Offers a broad overview of computer science designed to provide computer science majors with an introduction to their discipline. Fundamental computing concepts such as number representation, programming environments, communication tools, and basic network security measures are covered. Privacy and ethical use of computing are also discussed along with guest lectures to sample current computer science research. Note: All computer science majors are required to take this course within their first year as a computer science major. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
Enrollment limited to students in the VS-BS-ACS or VS-BS-CS programs.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 112: Introduction to Computer Programming. 4 credits.
Rigorous introduction to problem solving through development of computer programs. Focuses on identifying algorithmic patterns in problems, describing problem solutions in high-level pseudocode, then implementing in a procedural programming language. Basic programming concepts are covered in detail including expressions, control structures, simple data types, and input/output. Program testing and debugging are discussed to verify that problems are solved correctly. Note: The department will drop students who fail to meet the prerequisites. Lectures and Labs are offered in groups. Students MUST register for a lecture and a lab from the same group. Offered by Computer Science (p. 1049). Limited to two attempts.

Mason Core: Info Tech (without Ethics) (p. 142)

Registration Restrictions:
Required Prerequisites: (minimum score of 65 in 'Math Placement Transcendentals', minimum score of 07 in 'Math Placement Transcendentals', MATH 105C, 105T, 104C, 104T or 113C). C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

200 Level Courses

CS 211: Object-Oriented Programming. 3 credits.
Thorough treatment of programming according to object-oriented principles. Introduces classes, interfaces, inheritance, polymorphism, and single dispatch as means to decompose problems. Covers intermediate programming techniques including error handling through exceptions, arrangement of source code into packages, and simple data structures. Intermediate debugging techniques and unit testing are covered. Note: Lectures and labs are offered in groups. Students MUST register for a lecture and a lab from the same group. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: (CS 112C) C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

CS 222: Computer Programming for Engineers. 3 credits.
Introduction to C as a second programming language with emphasis on problems and language features relevant to engineers. Topics include basic data types, pointers, elementary data structures, file/output, bitwise operations, and Unix commands for compilation and debugging. Intended as terminal course in computer programming. Notes: Intended as terminal course in computer programming. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: (CS 112C).

C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 262: Introduction to Low-Level Programming. 3 credits.
Introduction to the language C, as well as operating system concepts, in UNIX, to prepare students for topics in systems programming. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CS 110C or 101C) and (CS 211C or 222C).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

300 Level Courses

CS 306: Synthesis of Ethics and Law for the Computing Professional. 3 credits.
Practical course to become effective computer professional. Examines legal and ethical issues surrounding computer technology and its use, as well as the foundation building that is necessary to deal with those challenges. Applies philosophical bases for ethical decision making to modern concerns raised by computers and technology. Addresses topics covered by CS 105 in a more intensive manner and focuses on the emerging legal and ethical issues involved in e-commerce and widespread use of the Internet. Notes: Computer science majors may use this course to satisfy the Mason Core synthesis requirement, so long as they have not previously taken CS 305 for credit. Offered by Computer Science (p. 1049). Limited to two attempts.

Mason Core: Synthesis (p. 142)

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: Junior standing (at least 60 credit hours).

Recommended Corequisite: All required Mason Core courses.

Registration Restrictions:
Required Prerequisites: (((COMM 100C and ENGH 302C) or (HNRS 110C and 122C)) or (HNRS 110C and 130C)) or (HNRS 110C and 131C) or (HNRS 110C and 230C) or (HNRS 110C and 240C)) and (CS 105C or 110C).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 310: Data Structures. 3 credits.
Focuses on object-oriented programming with an emphasis on tools and techniques for developing moderate to large programs. Topics include use and implementation of linear and nonlinear data structures and the
design and analysis of elementary algorithms. Offered by Computer Science (p. 1049). Limited to two attempts.

**Recommended Corequisite:** CS 105 or CS 110

**Registration Restrictions:**
Required Prerequisites: (CS 211 and MATH 113).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 321: Software Engineering.** 3 credits.
An introduction to concepts, methods, and tools for the creation of large-scale software systems. Methods, tools, notations, and validation techniques to analyze, specify, prototype, and maintain software requirements. Introduction to object-oriented requirements modeling, including use of case modeling, static modeling, and dynamic modeling using the Unified Modeling Language (UML) notation. Concepts and methods for the design of large-scale software systems. Fundamental design concepts and design notations are introduced. A study of object-oriented analysis and design modeling using the UML notation. Students participate in a group project on software requirements, specification, and object-oriented software design. Offered by Computer Science (p. 1049). Limited to two attempts. Equivalent to SWE 321.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
Required Prerequisites: (CS 310 and (ENGH 302 or (HNRS 110 and (HNRS 122, 130, 230 or 240))).
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Computer Science, Computer Science, Software Engineering or Systems Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 325: Introduction to Game Design.** 3 credits.
Game design, in various electronic entertainment technologies, involves a diverse set of skills and backgrounds from narrative and art to computer programming. Surveys the technical aspects of the field, with an emphasis on programming. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: (CS 211).  
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 330: Formal Methods and Models.** 3 credits.
Abstract concepts that underlie much advanced work in computer science, with major emphasis on formal languages, models of computation, logic, and proof strategies. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (CS 211 and MATH 125).
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Computer Science, Computer Science or Software Engineering.

Enrollment limited to students in a Bachelor of Science or Post-Baccalaureate Certificate degrees.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 351: Visual Computing.** 3 credits.
Focuses on programming essential mathematical and geometric concepts underlying computer graphics. Covers fundamental topics in computational geometry, 3D modeling, graphics algorithms, and graphical user interfaces using both 2D and 3D implementations. Reinforces object-oriented programming practices. Offered by Computer Science (p. 1049). Limited to two attempts. Equivalent to SWE 351.

**Registration Restrictions:**
Required Prerequisite: (CS 262 and 310).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
CS 367: Computer Systems and Programming. 4 credits.
Introduces students to computer systems from a programmer’s perspective. Topics include data representation, assembly and machine-level representation of high-level language programs, the memory hierarchy, linking, exceptions, interrupts, processes and signals, virtual memory, and system-level I/O. Foundation for courses on compilers; networks; operating systems; and computer architecture, where a deeper understanding of systems-level issues is required. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CS 262C or 222C) and MATH 125C and CS 110C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 390: Research and Project Design Principles in Computing. 3 credits.
This course introduces students to the research and project design process within the computing field. Students will learn about the tools of the trade, work through design principles beginning with the articulation of a question, reviewing methods of exploration, gathering evidence, communicating results, and assessing and evaluating research or project outcomes. Offered by Computer Science (p. 1049). Limited to two attempts.

Specialized Designation: Scholarly Inquiry.
Recommended Prerequisite: CS 310 and CS 321.

Registration Restrictions:
Required Prerequisite: CS 262C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 391: Advanced Programming Lab. 1 credit.
Programming-intensive lab course. Students refine problem-solving and programming skills while gaining experience in teamwork. Focuses on data structures, recursion, backtracking, dynamic programming, and debugging. Central focus is applying familiar and new algorithms and data structures to novel circumstances. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 3 credits.

Registration Restrictions:
Required Prerequisite: CS 310C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

CS 425: Game Programming I. 3 credits.
Introduction to technologies and techniques used in modern computer games. Teams will explore the various facets of a complete design using sophisticated tools. Includes a project in which a game is prototyped; this prototype and initial design will serve as the starting point for the project in CS 426. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CS 310C and 351C).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 426: Game Programming II. 3 credits.
Project-orientated continuation of CS 425 with an emphasis on the implementation of a complete game. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CS 325C and 425C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 440: Language Processors and Programming Environments. 3 credits.
Survey of basic programming language processors and software development tools such as assemblers, interpreters, and compilers. Topics include design and construction of language processors, formal syntactic definition methods, parsing techniques, and code-generation techniques. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CS 310C) and (CS 330C) and (CS 367C).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 444: Introduction to Computational Biology. 3 credits.
Introduces computational methods in molecular biology. Covers a broad array of topics in bioinformatics and computational biology. Organized as 3 four-week modules intended to capture the current classification of bioinformatics and computational biology methods, thereby providing students with a broad view of the field. Offered by Computer Science (p. 1049). Limited to two attempts.

Recommended Prerequisite: C or better in CS 310.
Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 445: Computational Methods for Genomics.** 3 credits.
Fundamental principles and techniques for implementing computational algorithms to solve problems in biology arising from the need to process large volumes of genomic information. Topics include sequence analysis, alignment, and assembly, gene prediction, and knowledge-based protein structure prediction. Projects involve designing and programming basic alignment and prediction methods. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** C or better in CS 310 and STAT 344.

**Recommended Prerequisite:** Computer Science.

**Registration Restrictions:**
Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 450: Database Concepts.** 3 credits.
Covers basics to intermediate knowledge for the design, implementation, and use of relational database systems. Topics include the Entity-Relationship (ER) and Entity-Enhanced Relationship (EER) models for database design, Relational Algebra (RA), Structured Query Language (SQL), SQL programming techniques, functional dependencies and normalization, object and object-relational databases, and security. Students will practice to design, develop, and implement a relational ORACLE database and use the database for queries, transaction processing, and report generation. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (CS 310) and (CS 330).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 451: Computer Graphics.** 3 credits.
Basic graphics principles and programming. Topics include scan conversion, transformation, viewing, lighting, blending, texture mapping, and some advanced graphics techniques. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (MATH 203) and (CS 310).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 455: Computer Communications and Networking.** 3 credits.
Data communications and networking protocols, with study organized to follow layers of Internet Protocol Suite (TCP/IP family of protocols). Topics include role of various media and software components, local and wide area network protocols, network performance, and emerging advanced commercial technologies. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (CS 310) and (CS 367) and (STAT 344).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 463: Comparative Programming Languages.** 3 credits.
Key programming mechanisms described independently of particular machines or languages, including control, binding, procedural abstraction, types, and concurrency. Includes basic programming competence in several different types of programming languages, including a language that provides concurrency. Notes: Students who have taken CS 363 may not receive credit for CS 463. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** CS 330, 367 and 310.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 465: Computer Systems Architecture.** 3 credits.

**Registration Restrictions:**
**Required Prerequisite:** (CS 367).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 468: Secure Programming and Systems.** 3 credits.
Fundamental principles and techniques for implementing secure computer systems. Topics include security and cryptography basics, vulnerability analysis, secure software development, and distributed system security. Projects involve designing and programming basic security tools, secure programs, and distributed systems. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (CS 310) and (CS 367).

CS 469: Security Engineering. 3 credits. Covers the software subsystems that are involved in defending computer systems. Studies threats and architecting solutions against them, including but not limited to access control and identity management, network and system security, intrusion detection and recovery systems, monitoring and forensic systems. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions: Required Prerequisites: (CS 330C) and (CS 367C) and (STAT 344C). Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

CS 471: Operating Systems. 3 credits. Issues in multiprogramming. Covers concurrent processes and synchronization mechanisms; processor scheduling; memory, file, I/O, and deadlock management; performance of operating systems; and projects dealing with synchronization in multiprogrammed OS and virtual memory management. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions: Required Prerequisites: (CS 310C) and (CS 367C). Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

CS 475: Concurrent and Distributed Systems. 3 credits. Practical issues in designing and implementing concurrent and distributed software. Topics include concurrent programming, synchronization, multithreading, local and wide-area network protocols, distributed computation, systems integration, and techniques for expressing coarsegrained parallelism at the application level. Projects involve network programming at application level. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions: Required Prerequisites: (CS 310C) and (CS 367C). Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

CS 477: Mobile Application Development. 3 credits. This project based course will teach fundamental principles of software development for the mobile device environment, emphasizing the application of numerous academic concepts and the new design and programming paradigms that stem from the use of mobile devices. Topics include user interfaces, event-based programming, interprocess communications, networking, mobile-specific capabilities and performance in a resource restricted environment. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions: Required Prerequisites: CS 310C and 367C. Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

CS 480: Introduction to Artificial Intelligence. 3 credits. Principles and methods for knowledge representation, reasoning, learning, problem solving, planning, heuristic search, and natural language processing and their application to building intelligent systems in a variety of domains. Uses LISP, PROLOG, or expert system programming language. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions: Required Prerequisites: (CS 310C) and (CS 330C). Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

CS 482: Computer Vision. 3 credits. Basic principles of visual perception and their implementation on computer systems. Topics include early visual processing, edge detection, segmentation, intrinsic images, image modeling, representation of visual knowledge, and image understanding. Students complete projects involving real images. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions: Required Prerequisites: (CS 310C) and (MATH 203C) and (STAT 344C). Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

CS 483: Analysis of Algorithms. 3 credits. Analyzes computational resources for important problem types by alternative algorithms and their associated data structures, using mathematically rigorous techniques. Specific algorithms analyzed and improved. Offered by Computer Science (p. 1049). Limited to two attempts.
Registration Restrictions:
Required Prerequisites: (CS 310\textsuperscript{C} and (CS 330\textsuperscript{C} and (MATH 125\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 484: Data Mining. 3 credits.
Basic principles and methods for data analysis and knowledge discovery. Emphasizes developing basic skills for modeling and prediction and performance evaluation. Topics include system design; data quality, preprocessing, and association; event classification; clustering; biometrics; business intelligence; and mining complex types of data. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CS 310\textsuperscript{C} and (STAT 344\textsuperscript{C} or 334\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 485: Autonomous Robotics. 3 credits.
Covers various basic topics in autonomous robotics, such as autonomous architectures and their interaction with physical hardware, elementary kinematics and robot control, motion and trajectory planning, localization, task planning, learning and adaptation, modeling, and sensor fusion. Includes projects involving physical robots. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CS 262\textsuperscript{C}, 310\textsuperscript{C} and MATH 203\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 490: Design Exhibition. 3 credits.
Capstone course focusing on design and successful implementation of major software project, encompassing broad spectrum of knowledge and skills, developed by team of students. Requires final exhibition to faculty-industry panel. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Two other CS 400-level courses; and senior standing.

Registration Restrictions:
Required Prerequisites: (CS 321\textsuperscript{C} or 421\textsuperscript{C}) and (CS 483\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 491: Industry-Sponsored Senior Design Project. 3 credits.
Senior design project course focusing on design and successful implementation of major software project specified by an industry sponsor, encompassing broad spectrum of knowledge and skills, developed by team of students. Requires final exhibition to faculty-industry panel. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: CS 367\textsuperscript{C}, 321\textsuperscript{C} and 483\textsuperscript{C}.
\textsuperscript{*} May be taken concurrently.
\textsuperscript{C} Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Computer Science or Computer Science.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

CS 498: Independent Study in Computer Science. 1-3 credits.
Research and analysis of selected problems or topics in computer science. Topic must be arranged with instructor and approved by department chair before registering. Notes: May be repeated if topics substantially different. Offered by Computer Science (p. 1049). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: 60 credits, CS major, and Permission of Instructor.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CS 499: Special Topics in Computer Science. 3 credits.
Topics of special interest to undergraduates. Notes: May be repeated if topics substantially different. Offered by Computer Science (p. 1049). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: 60 credits. Additional prerequisites may vary with nature of topic.

Registration Restrictions:
Required Prerequisites: CS 310\textsuperscript{C} and 330\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
500 Level Courses

CS 504: Principles of Data Management and Mining. 3 credits.
Techniques to store, manage, and use data including databases, relational model, schemas, queries and transactions. On Line Transaction Processing, Data Warehousing, star schema, On Line Analytical Processing, MOLAP, HOLAP, and hybrid systems. Overview of Data Mining principles, models, supervised and unsupervised learning, pattern finding. Massively parallel architectures and Hadoop. Notes: This course cannot be taken for credit by students of the MS CS, MS ISA, MS SWE, CS PhD or IT PhD programs. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 530: Mathematical Foundations of Computer Science. 3 credits.
This course focuses on the topics of basic mathematical structures, mathematical logic and probability theory; and application of these concepts to problem solving and formal reasoning through hand-on practice with the use of computational tools. Notes: This course is restricted to provisional students. It must be taken in the first semester at GMU. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: MATH 125 and STAT 344.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 531: Computer Systems and Fundamentals of Systems Programming. 3 credits.
This course is a hands-on introduction to the systems level of programming with an emphasis on data structures and interfacing with operating systems. This course focuses on fundamental data structures needed to design and implement systems applications and continues with an introduction to the Unix Application Programming Interface, signals, threads, and interprocess communications. This course is taught from a programmatic perspective using C, with special topics in both Java and Python. May not be taken for credit by students in the PhD CS or accelerated MSCS programs. May only be taken in the first semester at GMU. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 310 and CS 367 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 540: Language Processors. 3 credits.
Basic programming language processors such as assemblers, interpreters, and compilers. Topics include design and construction of language processors, formal syntactic definition methods, parsing techniques, and code generation techniques. Lab includes construction of language processors and experience with programming environments. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: MATH 125 and CS 310 and CS 330 and CS 465.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 550: Database Systems. 3 credits.
An introduction to database management with focus on architecting databases and using them in applications. Topics to be covered include: data modeling with the Entity-Relationship model, the relational data model and its formal languages, SQL, the theory of database design, object databases, XML and Web data. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: (CS 310 and CS 330) or (INFS 501 and INFS 515 and INFS 519 and SWE 510).

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 551: Computer Graphics. 3 credits.
Graphics principles and programming. Topics include graphics hardware, antialiasing, transformations, viewing, illumination, blending, texture mapping, color models, curves, surfaces, and animation. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 310 and CS 367.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 555: Computer Communications and Networking. 3 credits.
Techniques and systems for communication of data between computational devices and layers of Internet Protocol Suite. Topics include role of various media and software components, local and wide area network protocols, network design, performance and cost considerations, and emerging advanced commercial technologies. Emphasizes TCP/IP family of protocols. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 310 and CS 367 and STAT 344.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 571: Operating Systems. 3 credits.
Models of operating systems. Major functions including processes, memory management, I/O, interprocess communication, files, directories, shells, distributed systems, performance, and user interface. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 580: Introduction to Artificial Intelligence. 3 credits.
Principles and methods for knowledge representation, reasoning, learning, problem solving, planning, heuristic search, and natural language processing and their application to building intelligent systems in a variety of domains. LISp, PROLOG, or expert system programming language. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 310 and CS 330.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 583: Analysis of Algorithms. 3 credits.
Topics include analyzing sequential and parallel algorithmic strategies such as greedy methods, divide and conquer strategies, dynamic programming, search and traversal techniques, and approximation algorithms; and analyzing specific algorithms falling into these classes, NP-Hard and NP-Complete problems. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 310 and CS 330 and MATH 125.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 584: Theory and Applications of Data Mining. 3 credits.
Concepts and techniques in data mining and multidisciplinary applications. Topics include databases; data cleaning and transformation; concept description; association and correlation rules; data classification and predictive modeling; performance analysis and scalability; data mining in advanced database systems, including text, audio, and images; and emerging themes and future challenges. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 310 and STAT 344.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 587: Introduction to Cryptography. 3 credits.
Covers formal definitions of security for the most common tasks: data encryption and authentication, in both the private key and public key settings. Covers the process of formally proving that constructions meet the appropriate security definitions. Also covers practical constructions and applications, such as how to correctly use block ciphers and hash functions for the tasks above. In addition, several current topics in cryptography may also be covered. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 330

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 595: Basic Topics in Computer Science. 3 credits.
Special topics in computer science not occurring in existing courses. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

CS 600: Theory of Computation. 3 credits.
Introduction to logic and proof techniques, formal languages, automata theory, and computational complexity. Specific topics include regular and context-free languages, Turing machines, NP-completeness, and undecidability. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 583B-
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 611: Computational Methods for Genomics. 3 credits.
Covers fundamental principles and techniques for implementing computational algorithms to solve problems in biology arising from the need to process large volumes of genomic information. Topics include sequence analysis, alignments, sequence assembly, gene prediction, and protein structure prediction. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 583B-
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.
**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 630: Advanced Algorithms. 3 credits.**
Provides an overview of advanced algorithm design and analysis techniques. Topics include algorithms for hash tables, matrix operations, number theory, string matching, computational geometry, combinatorial optimization, and linear programming; also the areas of NP-completeness and approximation algorithms. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
- **Required Prerequisite:** CS 583^B^-.
  - B^- Requires minimum grade of B^-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 633: Computational Geometry. 3 credits.**
Basic principles and methods for computing in field of geometric modeling. Emphasizes data structures used to represent geometric objects and algorithms for manipulating those data structures. Topics include range searching, polygon triangulation, convex hulls, motion-planning, visibility, and mesh generation. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
- **Required Prerequisite:** CS 583^B^-.
  - B^- Requires minimum grade of B^-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 635: Foundations of Parallel Computation. 3 credits.**
Covers three major parallel computing paradigms: MIMD computation, SIMD computation, and data flow computation. Emphasizes interfaces between algorithm design and implementation, architecture, and software. Examines parallel algorithms and parallel programming languages relative to architecture of particular parallel computers. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** Proficiency in C programming language.

**Registration Restrictions:**
- **Required Prerequisites:** (CS 583^B^- and 571^B^-).
  - B^- Requires minimum grade of B^-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 640: Advanced Compilers. 3 credits.**
Examines advanced compiler techniques such as code optimizations for sequential and parallel machines; compilers for logical, functional, or object-oriented languages; and other topics in current literature. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
- **Required Prerequisites:** (CS 540^B^- and 583^B^-).
  - B^- Requires minimum grade of B^-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 650: Advanced Database Management. 3 credits.**
Study of the internal architecture of database systems. Topics include: physical data organization and indexing, query processing and optimization, transaction processing, database system architectures, Web services and Web data security. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
- **Required Prerequisites:** (CS 550^B^- or INFS 614^B^-).
  - B^- Requires minimum grade of B^-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 660: Advanced Database Systems. 3 credits.**
Study of the internal architecture of database systems. Topics include: physical data organization and indexing, query processing and optimization, transaction processing, database system architectures, Web services and Web data security. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
- **Required Prerequisites:** (CS 550^B^- or INFS 614^B^-).
  - B^- Requires minimum grade of B^-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 655: Wireless and Mobile Computing.** 3 credits.
This course provides an introduction to wireless and mobile networking. Topics include principles and architectures of wireless and mobile networking and fundamental issues of wireless communications with energy-constrained, mobile devices. It discusses physical, data link and network layer protocols including IEEE 802.11, and emerging wireless networks such as Internet-of-Things, high-speed millimeter-waves, vehicular networks, and mobile and IoT sensing applications including indoor localization, smart-homes, and smart-cities. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** CS 555

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 657: Mining Massive Datasets with MapReduce.** 3 credits.
Covers the techniques to mine large datasets, including Distributed File Systems and Map-Reduce, similarity search, and data stream processing. Covers classic problems in data mining, such as clustering, association rule mining, and others from the point of view of scalability. Includes a final project to exercise concepts covered in class. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** CS 584B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 658: Networked Virtual Environments.** 3 credits.
Networked virtual environment overview, networking and multimedia concepts, virtual simulation concepts, efficiency/performance issues, and online conferencing/virtual classrooms. Course is based around a project with multiple segments, each covering one aspect of networked virtual environments, plus a final session where one- or two-person teams create a minimally functional networked virtual environment over the Internet using multicast network software. Lectures available online/recorded. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** CS 555B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 662: Computer Graphics Game Technologies.** 3 credits.
Addresses some graphics game techniques including collision detection, levels of detail, physics-based simulations, textures, maps, and shadows. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** CS 551B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 667: Biometrics and Identity Management.** 3 credits.
Basic principles and methods for automatic authentication of individuals. Technologies include face, fingerprint, and iris recognition; and speaker verification. Additional topics cover multimodal biometrics, system design, performance evaluation, and privacy concerns. Term project required. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** CS 580B.
B- Requires minimum grade of B-.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 672: Computer System Performance Evaluation.** 3 credits.
Theory and practice of analytical models of computer systems. Topics include open and closed multiclass queuing networks, single and multiple class Mean Value Analysis, Markov Chains, performance and availability models of Internet data centers, software performance engineering, and e-commerce performance. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: CS 571B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 675: Distributed Systems.** 3 credits.
Issues in design and implementation of distributed systems and applications. Topics include distributed communication paradigms, middleware, coordination and synchronization, distributed transactions, consistency and replication, fault-tolerance and reliability, and peer-to-peer systems. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: CS 571B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 681: Instructable Cognitive Agents.** 3 credits.
Design and development of cognitive agents that learn problem-solving expertise directly from domain experts. Topics include modeling expert’s knowledge, mixed-initiative reasoning based on knowledge and evidence, ontology design and development, multitask strategy rule learning, and knowledge-based maintenance. Projects include development of specific cognitive agents through teaching and learning. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: CS 580B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 682: Computer Vision.** 3 credits.
Study of computational models of visual perception and their implementation in computer systems. Topics include early visual processing, edge detection, segmentation, intrinsic images, image modeling, representation of visual knowledge, and image understanding. Offered by Computer Science (p. 1049). May not be repeated for credit.
Registration Restrictions:
Required Prerequisites: (CS 580\textsuperscript{B} and 583\textsuperscript{B}).
\textsuperscript{B} Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 683: Parallel Algorithms. 3 credits.
Examines design and analysis of parallel algorithms. Material focuses on algorithms for both theoretical and practical models of parallel computation. Considers algorithm design and analysis for PRAM and existing SIMD and MIMD type architectures. Topics include sorting, graph algorithms, numerical algorithms, and computational complexity. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 583\textsuperscript{B}.
\textsuperscript{B} Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 684: Graph Algorithms. 3 credits.
Data structures and analytical techniques to study graph algorithms. Data structures include disjoint sets, heaps, and dynamic trees. Algorithms include minimum spanning trees, shortest path, maximum flow, and graph planarity. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 583\textsuperscript{B}.
\textsuperscript{B} Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
and symbolic versus emergent approaches to intelligence. Studies advanced programming techniques for artificial intelligence, relationship to foundational issues, and important application areas for artificial intelligence. Notes: Major programming project required. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 580B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 688: Machine Learning. 3 credits.
This course covers the theory and principles underlying different machine learning paradigms. The emphasis is on statistical theory and methodology. Topics include: Model selection and generalization; Overfitting and under fitting; Bayesian theory and Decision theory; Maximum Likelihood estimation, MAP; Regularization; Bias-variance tradeoff; Curse of dimensionality; Dimensionality reduction; Linear Models for classification; Probabilistic Generative Models; Probabilistic Discriminative Models; Neural Networks (Backpropagation); Deep Learning (CNNs); Kernel methods; Support Vector Machines; Ensemble Methods; Unsupervised Learning (Clustering, EM, Mixture Modeling); Reinforcement learning. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: CS 580B or 584B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 695: Topics in Computer Science. 3 credits.
Special topics in computer science not occurring in regular computer science sequence. Notes: May be repeated for credit when topics are distinctly different. Offered by Computer Science (p. 1049). May be repeated within the term.

Recommended Prerequisite: Completion of at least two core courses and permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 697: Independent Reading and Research. 1-3 credits.
Students may undertake a course of study under supervision of consenting faculty member. Students usually submit written statement of course content and tentative reading list as part of request for approval. Literature review, project report, or other written product usually required. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: Completion of at least two core courses and permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

CS 700: Research Methodology in Computer Science. 3 credits.
Topics include approaches for evaluating, writing, and presenting scholarly papers, research integrity issues, and quantitative models and methods in experimental computer science. Techniques for the use of analytic and simulation models, design of experiments, hypothesis testing, and statistical analysis of data are presented. Students apply these techniques to a project, write a report, and make a presentation to the class. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: Admission to PhD in Computer Science or PhD in Information Technology programs.

Registration Restrictions:
Enrollment is limited to students with a major in Computer Science or Information Technology.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 701: Research Experience in Computer Science. 3 credits.
Readings and research for early stage PhD students under the direction of a Computer Science faculty member. Research findings must be reported in a professionally prepared document and presented in a public meeting at the end of the semester. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 700

Registration Restrictions:
Enrollment is limited to students with a major in Computer Science or Information Technology.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 706: Concurrent Software Systems. 3 credits.
Topics include concurrent programming languages and constructs, and specification, design, verification, and validation of concurrent programs. Students required to solve concurrent programming problems and check solutions by using verification, testing, and debugging tools. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 571B.
B Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 719: Scalable Internet Services. 3 credits.
Discusses, from quantitative point of view, characteristics of most important technologies used to support implementation of e-business sites. Includes topics such as hardware and software architectures of e-business sites, authentication, payment services, understanding customer behavior, workload characterization, scalability analysis, and performance prediction. Notes: Term paper and project required. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (CS 555B and 571B).
B Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 747: Deep Learning. 3 credits.
This course presents the theory, underlying principles and applications of Deep Learning (DL). Deep learning is a Machine Learning approach based on learning data representations as opposed to designing task-specific algorithms. The course covers the concepts of Multilayer Perceptrons (MLPs) and algorithms to train them (gradient descent, backpropagation), Regularization of DL, Convolutional Networks (CNNs), Autoencoders, Recurrent Networks (RNNs), and Deep Generative Models including Generative Adversarial Methods. Problems from various application domains such as natural language processing and computer vision will be discussed. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: CS 688

Registration Restrictions:
Enrollment is limited to students with a major in Computer Science or Software Engineering.

Enrollment limited to students in a Master of Science degree.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 752: Interactive Graphics Software. 3 credits.
Advanced graphics methods and tools. Topics include visualization, modeling, rendering, animation, simulation, virtual reality, graphics software tools, and current research topics. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (CS 551B and 583B). B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 755: Advanced Computer Networks. 3 credits.
Current and emerging issues in advanced computer networks and applications. Topics include software systems associated with packet and cell-switched networking architectures and protocols, high-performance LANs, scheduling and congestion control, mobile networking, multimedia applications, and next generation of Internet. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 555B. B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 756: Performance Analysis of Computer Networks. 3 credits.
Analytical, measurement, and simulation techniques for modeling and analyzing computer networks. Examines elementary queuing analysis; networks of queues; routing and flow controls; and applications to local and wide area networks, Internet, and emerging networking technologies. A large portion of the course is devoted to projects, normally performed in student teams, who apply the techniques presented. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 555B. B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 773: Real-Time Systems Design and Development. 3 credits.
Real-time systems and principles supporting design and implementation. Emphasizes fundamental results from real-time scheduling theory and relevance to computer system design. Topics include system design issues for real-time applications involving operating systems, communication networks, databases, and multimedia Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 571B. B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 774: Computational Vision. 3 credits.
Studies recent advances in development of machine vision algorithms and knowledge-based vision systems. Topics include scalespace; Gabor and wavelet processing; distributed and hierarchical processing using neural networks; motion analysis; active, functional, and selective perception; object and target recognition; expert systems; data fusion; and machine learning. Emphasizes system integration in terms of perception, control, action, and adaptation. Presents applications to robotics, intelligent highways, inspection, forensic, and data compression. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (CS 682B and 686B). B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 775: Advanced Pattern Recognition. 3 credits.
Covers statistical pattern recognition, neural network, and statistical learning theory approaches. Topics include decision theory and Bayes’ theorem, density (parametric and nonparametric) estimation, linear and nonlinear discriminant analysis, SVM and kernel methods, SRM and model selection, performance evaluation, mixture of experts (AdaBoost),
dimensionality reduction, feature selection and extraction, and clustering. Emphasizes experimental design, applications, and performance evaluation. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: CS 688B-
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 782: Advanced Machine Learning. 3 credits.
The course covers recent advances in the field of machine learning. Possible topics include: Learning Theory (PAC, error bounds, VC-dimension), Learning manifolds; Transfer learning; Active learning; Learning with structured data (e.g. graphs); Topic modeling; Learning with text; Graphical Models (Bayesian Networks); Learning HMMs. Topics may change depending on the instructor. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (CS 681B-, 687B- or 688B-).
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 787: Decision Guidance Systems. 3 credits.
Decision-guidance systems support an iterative process of giving actionable recommendations to and extracting feedbacks from human decision-makers, with the goal of arriving at the best possible course of action. Focuses on models, languages, algorithms and applications of Decision-Guidance Management Systems, used for fast development of decision-guidance applications. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (INFS 614B-, 550B- or CS 550B-).
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 788: Autonomic Computing. 3 credits.
Studies self-managing, self-optimizing, self-configuring, self-tuning, self-healing, and self-protecting computing systems. This course analyzes many examples of autonomic systems as well as various techniques to design and build such systems. This is a doctoral seminar based on reading and analysis of current papers. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (CS 555B-, 571B- or ISA 562B-).
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll. Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 795: Advanced Topics in CS. 3 credits.
Advanced topics not occurring in regular sequence. Notes: May be repeated for credit when subject differs. Satisfies MS breadth requirement only if explicitly stated in syllabus in given section. Only one such course should be used for breadth requirements. Offered by Computer Science (p. 1049). May be repeated within the term.

Recommended Prerequisite: Admission into computer science PhD program.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 798: Project Seminar. 3 credits.
Master’s degree candidates undertake a project using knowledge gained in MS program. Notes: Topics chosen in consultation with advisor. Meets project or thesis requirement for MS in computer science. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: 18 hours of credit applicable toward the M.S. in computer science.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CS 811: Research Topics in Machine Learning and Inference. 3 credits.
Presents unifying principles that underlie diverse methods, paradigms, and approaches to machine learning and inference. Reviews most known learning and inference systems, discusses strengths and limitations, and suggests most appropriate areas of application. Hands-on experience by experimenting with state-of-the-art learning and inference systems and working on projects tailored to research interests. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (CS 681\textsuperscript{B}, 687\textsuperscript{B} or 688\textsuperscript{B}).\textsuperscript{B} Requires minimum grade of B-.

Enrollment is limited to Graduate level students.
Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CS 818: Topics in Computer Systems. 3 credits.
Discussion of current research topics in computer systems. Topics vary according to faculty interest. Possible topics include peer-to-peer computing, high-performance distributed computing, sensor and ad hoc networks, autonomic computing, virtualization, and web services and middleware. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.
Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 880: Research Topics in Artificial Intelligence.** 3 credits.
Special topics in artificial intelligence not occurring in regular computer science sequence. Notes: Requires substantial student participation. Subject matter may include continuation of existing 600- or 700-level courses in artificial intelligence or other topics. May be repeated for credit when subject matter differs. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 884: Advanced Topics in Computer Vision and Robotics.** 3 credits.
Covers recent developments. Topics motivated by applications to autonomous robotic systems, mobile robot navigation, multirobot systems, human-computer-environment interaction, image/video search and analysis, content discovery, and visual surveillance. Topics include 3D structure and motion recovery, motion understanding, map building and localization, object detection and recognition, and target tracking. Projects and experimental evaluation emphasized. Notes: Course may be repeated with change of topic. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisites:** (CS 682B or 685B).
B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 895: Research Topics in CS.** 3 credits.
Advanced topics not occurring in regular sequence. Notes: May be repeated for credit when subject differs. Only one such course should be used for breadth requirements. Offered by Computer Science (p. 1049). May be repeated within the term.

**Recommended Prerequisite:** Doctoral status.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 896: Directed Reading and Research.** 1-6 credits.
Reading and research on a specific topic under the direction of a faculty member. Notes: Students can sign up for this class only after satisfying the CS PhD breadth requirement. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Permission of Instructor.

**Registration Restrictions:**
Enrollment limited to students in the VS-PHD-CS program.

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CS 990: Dissertation Topic Presentation.** 0 credits.
Students put together a professional presentation of a research proposal and present it for critique to fellow students and interested faculty. Notes: Must be completed before the presentation of a dissertation research proposal. Offered by Computer Science (p. 1049). May not be repeated for credit. Equivalent to CEIE 990, IT 990, STAT 990.

**Recommended Prerequisite:** Student must have passed the PhD qualifying examinations.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Research

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CS 998: Doctoral Dissertation Proposal.** 1-12 credits.
Work on a research proposal that forms the basis for a doctoral dissertation. Notes: No more than 24 credits of CS 998 and 999 may be applied to the doctoral degree requirements. Offered by Computer Science (p. 1049). May be repeated within the degree.

**Recommended Prerequisite:** Student must have passed the PhD qualifying examinations and must have a dissertation advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Dissertation
Conflict Analysis and Resolution (CONF)

**100 Level Courses**

**CONF 101: Conflict and Our World.** 3 credits.
Brief history of field, survey of key conflict resolution themes and theories, and intervention methods. Overview includes general factors of conflict and its resolution; and nature of conflict in interpersonal, group, organizational, and international situations. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**CONF 210: Theories of Conflict Analysis and Resolution.** 3 credits.
Students will utilize critical thinking and analytical skills to begin an in-depth examination of the major theories of conflict analysis and resolution. Theories and case studies will include root causes and dynamics of conflict and methods of conflict analysis and resolution. Notes: Required course for all CONF majors (BA and BS) beginning Fall 2011. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**CONF 300: Conflict Resolution Techniques and Practice.** 3 credits.
Advanced consideration of CONF 101 topics, introduction of core notion of reflective practice, conflict resolution techniques, practice, third party roles, and ethics. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONF 301: Research and Inquiry in Conflict Resolution.** 3 credits.
Introduces social science research methods at undergraduate level. Covers basic epistemology of social research, including quantitative and qualitative methods, emphasizing participatory action research, and evaluation and assessment work. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONF 310: Special Topics in Practice.** 1-3 credits.
Examines selected topics related to practice in the field of conflict analysis and resolution. Topics vary, addressing practical skills and knowledge necessary to conflict resolution practice. Notes: May be repeated if topics vary. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 6 credits.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONF 314: Advising Seminar for Conflict Majors.** 1 credit.
Examines issues and opportunities relevant to CONF majors to enhance their overall success in the program. Topics may include academic planning, field experience processes, critical thinking in coursework, career exploration and readiness, and co-curricular opportunities. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONF 320: Interpersonal Conflict Analysis and Resolution.** 3 credits.
Considers personal, relational, social and cultural dimensions of interpersonal conflict. Introduces concepts and skills for understanding the causes, patterns, systems and dynamics of difficult issues and situations. Uses readings, case studies, and role plays to develop ability to analyze and intervene in interpersonal conflicts. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CS 999: Doctoral Dissertation.** 1-12 credits.
Dissertation research under the supervision of the dissertation director. Notes: No more than 24 credits of CS 998 and 999 may be applied to the doctoral degree requirements. Offered by Computer Science (p. 1049). May be repeated within the degree.

Recommended Prerequisite: Admission to candidacy.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CONF 317: Theories of Conflict Analysis and Resolution.** 3 credits.
Considers personal, relational, social and cultural dimensions of interpersonal conflict. Introduces concepts and skills for understanding the causes, patterns, systems and dynamics of difficult issues and situations. Uses readings, case studies, and role plays to develop ability to analyze and intervene in interpersonal conflicts. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 325: Dialogue and Difference. 3 credits.
Covers challenges of communicating across differences of age, gender, language, culture, political orientation, and contextual situations. Students will engage in preparing and analyzing communication strategies in conflict situations and will participate in a dialogue over the term that explores the meaning and experience of difference on the Mason campus. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 330: Community, Group, and Organizational Conflict Analysis and Resolution. 3 credits.
Covers conflict in communities, groups and organizations. Introduces theories of social harmony and conflict, drawing on sociology, social psychology, community psychology, organizational psychology, administration of justice, philosophy, and conflict resolution. Uses case studies, class presentations, and group projects to develop ability to analyze conflict and make recommendations for change. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 331: Simulation in Community and Organizational Conflict Resolution. 1 credit.
Builds on the theories and concepts presented in CONF 330 to focus on the practice of group and community conflict. Through intensive simulations using conflict cases, students will have the opportunity to practice conflict resolution skills such as dialogue, problem solving, mediation and negotiation and gain a practical understanding of third party roles and intervention strategies in community, group, and organizational settings. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 335: Justice and Reconciliation. 3 credits.
Explores justice and reconciliation from a conflict perspective. Drawing on approaches in the interdisciplinary fields of sociolegal studies and conflict analysis and resolution, the course considers these and other questions: How does injustice fuel conflict? What role should justice play in guiding conflict prevention and addressing the aftermath of violence? What is reconciliation and how do we know when it has been achieved? Are justice and reconciliation mutually reinforcing processes or does one stand in the way of the other? The first part of the course focuses on foundational concepts and questions understood through domestic US examples, examining topics such as: gender equality and gender violence, migration and integration, discrimination, identity politics, healing communities, and environmental justice. We then broaden our perspective geographically, as we examine justice and reconciliation as responses to mass atrocity. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 340: Global Conflict Analysis and Resolution. 3 credits.
Covers conflict at macro level, introducing theories of international and global violence and conflict, drawing from disciplines of international relations, political science, intercultural communication, and conflict resolution. Covers impact of globalization and structural causes of conflict. Uses class discussions, case studies, and final paper to develop analytical skills to help in analysis of conflict. Prepares for further course work for international conflict concentration. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 341: Simulation in Global Conflict Resolution. 1 credit.
Focuses primarily on global conflict resolution practice. Using the methodologies of dialogue, problem-solving, and intensive simulation, students will increase their theoretical and practical understanding of peace making, peace building, and transformation processes within a specific international case. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree for a maximum 2 credits.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 345: Social Dynamics of Terrorism, Security, and Justice. 3 credits.
Presents students with analytical frameworks to account for terrorist acts and organizations and explore social dynamics underlying the development of, and response to, terrorism. Topics may include recruitment into violent groups, counterterrorism and human rights concerns, role of religious and political ideologies in terrorism and counterterrorism, media coverage of terrorism, and effects of terrorism on social structures and processes. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 370: Internship Field Experience. 1-9 credits.
Internships will provide an opportunity for students to gain practical experience, reflect on those experiences, and apply academic theories outside of the normal classroom environment. Students will apply academic theories learned in the classroom to situations that arise in the work environment. Students must obtain approval and complete an internship proposal application in order to be registered for the course. Notes: Course does not have a regular meeting time; students submit work via blog and e-mail; some meetings with instructor. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree for a maximum 9 credits.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 375: Special Programs Field Experience. 1-6 credits.
Learning experience in the application of conflict analysis and resolution (CAR) skills in special program settings. Provides supervised practice in CAR techniques, leadership, program implementation, and strategies to facilitate conflict resolution in educational institutions or community settings. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Fieldwork
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 385: International Field Experience. 3 credits.
Investigates conflict theory through international field experience including participation in formally organized courses offered by Global Education Office or another form of international field experience approved by program director. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: CONF 101 and permission of advisor.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 386: Context and Synthesis: Study Abroad. 1 credit.
Investigates conflict theory through cross cultural experience which includes participation in formally organized semester abroad programs offered by the Global Education Office or another form of international field experience approved by the program director. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree for a maximum 2 credits.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 392: Youth and Conflict. 3 credits.
Explores aspects of youth and conflict in terms of context and dynamics at the local, regional, and global levels, as well as interactions with violence and peace. Youth is more than a distinct life phase or political category; this course challenges the boundaries of how we understand the considerations and constraints of the transition to adulthood. Objectives of the course are: to develop a better understanding of the generational and gendered dynamics of conflict and peace; to situate youth contextually, socially, culturally, economically, and politically; to explore impacts of gender, age, and context upon youth individually as well as within constituent groups; to incorporate youth into theoretical and practical maps of conflict analysis and resolution. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 393: Violence: Causes, Dynamics & Alternatives. 3 credits.
Examines causes, sources, and origins of group violence with particular attention to group violence and ethnic conflict. Explores alternative proposals that explain why violence becomes a primary, or at least a viable, form of resolving conflict in some societies. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 394: Human Rights and Inequality. 3 credits.
Examines inequality, social justice, and human rights in an age of globalization. Topics may include international law and order, welfare-and social policy, regionalism and multilateralism, environmental protection, gender equality, terrorist and transnational criminal networks, human trafficking, modern slavery, world poverty, corporate military firms, governance of global financial institutions, security, and transnational social movements. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 397: Study Abroad Special Topics. 1-9 credits.
Transfer credit for relevant coursework taken during direct exchange study abroad trips. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 12 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 398: Special Topics in Conflict Analysis and Resolution. 3 credits.
Examines selected topics relating to conflict resolution techniques and practices. Topics vary but may include mediation, negotiation, reflective practice, and facilitation. Notes: May be repeated if topics vary. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 9 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 399: Special Topics in Advanced Techniques and Practices. 3 credits.
Examines selected topics relating to conflict resolution techniques and practices. Topics vary but may include mediation, negotiation, reflective practice, and facilitation. Notes: May be repeated if topics vary. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 9 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONF 425: Mediating Conflict. 3 credits.
A skill development course connecting conflict resolution theory and practice to the mediation process through lectures, discussion, self-reflection, experiential learning, and role-plays. This course has been approved to meet the 20-hour basic education requirements for mediation
certification by the Judicial Council of Virginia and the Office of the Executive Secretary, Supreme Court of Virginia. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONF 435: Building Peace in Divided Societies**. 3 credits.
A major challenge to peacebuilding efforts domestically and globally are the boundaries that communities believe separates themselves from others. The boundaries have ethnic, racial, religious or cultural roots, often with long histories of division and violence. This class will examine case studies and strategies from around the globe of peacebuilding in complex communities. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONF 490: RS: Integration**. 3 credits.
Capstone course in which students reflect on what they have learned, integrating knowledge from course work and synthesizing it to cogent body of knowledge. Includes class discussion and final project that demonstrates understanding of conflict theory and reflective practice. Offered by Conflict Analysis & Resolution (p. 936). Limited to three attempts.

**Mason Core:** Synthesis (p. 142)

**Specialized Designation:** Research/Scholarship Intensive

**Registration Restrictions:**
- **Required Prerequisite:** CONF 301
  - Requires minimum grade of C.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONF 499: Independent Research in Conflict Analysis and Resolution**. 1-6 credits.
Readings and research conducted on individual basis in consultation with instructor. Notes: Student may not present more than 3 credits for graduation credit. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree for a maximum 6 credits.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**CONF 501: Introduction to Conflict Analysis and Resolution**. 3 credits.
Introduces field of conflict analysis and resolution. Examines definitions of conflict and diverse views of its "resolution." Explores thinking about human behavior, and social systems as they relate to origins of conflict and role of conflict in violent and peaceful social change. Considers appropriate responses to conflict at interpersonal, intergroup, industrial, communal, and international levels. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 600: Foundations of Conflict Analysis and Resolution**. 6 credits.
This course offers an integration of theory, research and practice to investigate the inner workings of our field. It includes conflict theories, models and modes of practice that function as the grounding to subsequent courses in the curriculum, and exploration of some of the key contemporary debates. The course includes opportunities for linking theory to practice with experimental learning activities. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 610: Conflict Inquiry**. 3 credits.
Introduces students to the philosophies behind social science research and the methods for conducting research in the field of conflict resolution. Focuses on the identification of research problems associated with particular conflict situations, selection of appropriate research methods, and the design of effective research projects. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 600.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONF 620: Reflective Practice in Interpersonal-Multiparty Conflicts**. 3 credits.
Introductory skill-building course integrating conflict theory and practice using reflective practitioner model. Students learn necessary skills for...
third-party facilitation and mediation, including active listening, empathy, paraphrasing, reframing, and negotiation, in addition to analytical skills of problem solving and creation of transformational processes. Cases for practice focus on interpersonal and intergroup conflict. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, 600, or 801

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 625: Engaging Conflict.** 3 credits.
This course will provide students an experiential opportunity to consider the relationship between social science theories and conflict analysis and resolution work; and engagement in a variety of forms with real world conflict. Each course will provide students the opportunity to engage in research and practice activities, choosing the appropriate modalities for the conflict they are engaging with. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** CONF 600.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Fieldwork

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 650: Conflict Analysis and Resolution Advanced Skills.** 3 credits.
Introduces innovative practices and provides structure to reflect on and improve ability to work within conflict settings. Considers the intersection of theory and practice, with special attention to the challenges of translation, adaptation, and transfer of skills and models. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600 or CONF 801.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 651: Collaborative Community Action & Participatory Governance.** 3 credits.
Covers designing collaborative processes to work with diverse stakeholders to build meaningful and lasting shared agreements. Considers applications in land use, development, or other community planning contexts. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Specialized Designation:** Green Leaf Related Course

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 652: Conflict Analysis and Resolution for Prevention, Reconstruction, and Stabilization Contexts.** 3 credits.
Considers conflict analysis and resolution approaches to designing, implementing, and evaluating holistic cross-sectoral, conflict-sensitive initiatives in areas of potential violence and postconflict reconstruction and stabilization contexts. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CONF 653: World Religions, Diplomacy, and Conflict Resolution. 3 credits.
Analyzes ways world religions play role in conflicts, war, diplomacy, peacemaking, and conflict resolution. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 654: Mass Atrocity: Early Warning and Prevention. 3 credits.
This course provides students with scholarly, practical, and relevant knowledge of Genocide and Atrocity Prevention. Students will analyze genocide and mass-atrocities as part of a spectrum of violence and conflict, and gain expertise in prevention mechanisms, including: early warning indicators, early prevention strategies, diplomacy, international justice, legal infrastructures, negotiation, mediation, humanitarian relief and intervention, civilian protection, and civil society-based solutions. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Corequisite: CONF 501 or CONF 600 or CONF 801

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 657: Facilitation Skills. 3 credits.
Covers range of skills in group facilitation processes, with emphasis on conflict analysis and resolution approaches to improve group communication. Includes skill-building exercises. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Coll Nursing Health Science or Conflict Analysis Resolution colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 658: Diversity and Difference in Conflict Analysis and Resolution. 3 credits.
Covers elements of cultural diversity, understanding, and awareness, as well as creative ways of approaching issues of diversity, identity, worldviews, and territory. Considers individuals, organizations, communities and nations. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 659: Leadership in Conflict Analysis and Resolution. 3 credits.
Covers roles and styles of leadership in interpersonal, organizational, community, group, and international conflicts. Considers cultural roles of leaders as insider-partials, negotiators, facilitators, and mediators. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 660: Conflict Assessment and Program Evaluation. 3 credits.
Covers assessment methods appropriate to conflict contexts and related evaluation approaches and techniques for use in areas of peace building, community processes, or interpersonal conflict. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.
Recommended Prerequisite: CONF 501 or 502. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Coll Nursing Health Science or Conflict Analysis Resolution colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 665: Special Topics in Conflict Analysis and Resolution. 3 credits.
In-depth study of contemporary areas of conflict resolution practice.
Notes: Fulfills elective requirement for certificate program. Topics vary.
Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: CONF 501 or CONF 600.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution college.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 668: Applied Integration for Graduate Certificates. 3 credits.
Capstone course facilitating integration of learning in the graduate certificate programs and appropriate mentored application and experiential learning. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501; CONF 660; and CONF 650, 651, 652, or 653.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Coll Nursing Health Science or Conflict Analysis Resolution colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 682: Principles of Environmental Conflict Resolution. 3 credits.
Explores the nature and characteristics of environmental conflict and efforts to manage, resolve or transform it. Students will develop a capacity to assess the strengths and weaknesses of environmental conflict resolution processes while learning about best practices for preventing, preparing for, and addressing environmental conflict. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit. Equivalent to EVPP 682.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree, Undergraduate or Washington Consortium level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 683: Environmental Conflict Resolution: Situation Assessment, Process Design and Best Practices. 3 credits.
Explores best practices for managing, resolving, and transforming environmental conflict using environmental conflict resolution (ECR) processes. Nature and dynamics of environmental disputes, methods for assessing conflict situations, and methods for conducting various forms of ECR processes will be covered in the context of selected case studies with emphasis on student involvement. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit. Equivalent to EVPP 683.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: One of CONF 501, CONF 600, CONF 682 or EVPP 682

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
CONF 694: Internship. 1-6 credits.
Students are expected to mesh theory and practice through observation and experience. Includes comprehensive report analyzing experiences. For 3 credits of internship students must complete 160 hours of work on site. Students must receive permission of the Internship Coordinator prior to registering. Notes: Under direction of internship coordinator, students spend at least 160 hours on project involving study, resolution of conflict for each 3-credit internship. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: 21 credits, including CONF 657.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Special scale. (p. 84)

CONF 695: Selected Topics. 3 credits.
Topics vary; announced each academic year. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: CONF 501, CONF 600 or CONF 801

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Special scale. (p. 84)

CONF 501, CONF 600 or CONF 801.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Special scale. (p. 84)

CONF 697: Directed Readings and Research. 1-6 credits.
Independent reading at master's level on specific topic related to conflict analysis and resolution, as agreed to by student and faculty member. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: CONF 501 or CONF 600

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Recommended Prerequisite: CONF 501 or CONF 600

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Recommended Prerequisite: CONF 501 or CONF 600

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Recommended Prerequisite: CONF 501, CONF 600, or CONF 801

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution college.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 706: Ethics and Conflict. 3 credits.
Students explore issues and controversies in our field about what is just and unjust, morally right and wrong, and good and bad. Such issues are relevant to analysis and practice before, during, after the occurrence of conflict; the major topics include: validity of pacifism, the notions of a just war, the challenges of genocide prevention, non-violent resistance, humanitarian interventions, and human rights activism. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 707: Gender and Violence. 3 credits.
This course will address gendered dimensions of violent conflict and its transformation. Key themes to be explored include gender and post-conflict justice and reconciliation; the gendered politics of memory, speech and representation; militarism and masculinity; sexual violence and disclosures of trauma, victimization and agency; and the ethics and politics of analytic and practice approaches. Case studies will include the partition of India/Pakistan; wartime sexual assault in Bosnia/the DRC; and domestic violence in the U.S. and South Asia. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 708: Identity and Conflict. 3 credits.
Explores complex interrelations of social identity and postmodern conflicts in society. Emphasizes the role of identity in processes of conflict resolution and transformation. Critical rethinking of ethnic, national, and religious identities as both generators and outcomes of conflict are an important part of the course. Extends knowledge on structure and dynamics of identity-based conflicts and develops a framework for their resolution. Course includes lectures, simulations, and case studies. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution college.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 720: Ethnic and Cultural Factors in Conflict Resolution. 3 credits.
Examines the role culture plays in genesis, structuring, and resolution of processes of conflict within and between groups. Special attention to ethnicity and other subcultural markers of identity in complex social systems as generators and outcomes of conflict. Explores relevance of variables to success or failure of conflict resolution. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution college.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 721: Conflict and Race. 3 credits.
Addresses historic analyses of racial and ethnic identity conflicts and their resolution. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution college.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
CONF 722: *Conflict and Religion*. 3 credits.
Explores role of religious ideas, practices, and organizations in conflict, war, peace making, and conflict resolution. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CONF 723: *Conflict and Gender*. 3 credits.
Examines constructs of gender and conflict as they relate to critical analysis of theory and practice. Reviews feminist theories for contributions to social and conflict theories. Uses narratives to explore how gender, power dynamics interact in conflict. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CONF 725: *Conflict and Spirituality*. 3 credits.
Explores the relationship of spirituality to the dynamics of conflicts and conflict resolution. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Explores major historical and contemporary positions on the intellectual, moral, and religious foundations for analyzing and resolving conflict. Enhances critical abilities in metacritique, dialectics, and intellectual self-appropriation. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Looks at how ethnographic tools can be used for conflict analysis. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Introduces major controversies and debates surrounding use of human rights theory and practice cross-culturally. After basic study of human rights philosophy, uses case studies from around the world to examine problems and potential of human rights in today's globalized world. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CONF 730: *Structural Sources of Conflict*. 3 credits.
Examines how structures and institutions affect behavior and give rise to conflictual relationships at all social levels, from interpersonal to the international. Explores role of conflict resolution as political process
providing opportunities for nonviolent system change. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 731:** Conflict in Organizations. 3 credits.
Explores intersection and dynamics of organizational behavior and dimensions of conflict. Involves theoretical perspectives and cases examining conflict analysis and resolution. Practices strategies for prevention and intervention. Field research in greater metropolitan area integrates course content. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 732:** Conflict in Development. 3 credits.
Examines the relationship between processes of political and economic change and conflict; the relationship between democratization and conflict; the relationship between structural adjustment policies and conflict; and the challenges of postconflict reconstruction. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 733:** Law and Justice from a Conflict Perspective. 3 credits.
Contrasts legal processes and institutions with alternative approaches to dispute resolution. Defines and distinguishes among law, "alternative dispute resolution," and problem-solving analysis as methods for resolving rather than controlling conflict. Examines to what extent legal procedures are truly applicable to resolving deep-rooted conflict. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 736:** Globalization and International Conflict. 3 credits.
Explores economic, political, social, and cultural meanings of globalization; how they affect conflict processes at international level; and when and under what conditions globalization promotes cooperation or conflict. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 741:** Negotiations. 3 credits.
Uses negotiating experiences to construct framework for thinking about and analyzing negotiation processes. Framework then used to organize review of research literature on rhythms and patterns of negotiation and to analyze actual cases. Interweaves exercises, class projects with state-of-the-art concepts and findings. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600 or 801

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 746:** Peace Building. 3 credits.
Building on initiatives of United Nations and other multilateral organizations, explores dynamics of post-conflict peace building.
Prepares students of conflict resolution to play innovative roles in reconstruction of civil societies. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 747: Reconciliation. 3 credits.**
Explores processes of acknowledgment, reconciliation, forgiveness, and restitution. Reviews literature, case studies, and other research to assess applicability and impact of these efforts. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 751: Dynamics of Civil Wars. 3 credits.**
Civil wars represent some of the most vexing challenges to peace in the contemporary world. In this seminar we investigate approaches to understanding the grievances and root causes of civil wars but also new research on the political economy of civil war, organizational characteristics of insurgent movements, how rebels and civilians interact during wartime, and how transnational processes shape civil wars. A better understanding of these structures and dynamics is essential to better peacebuilding in the context of internal conflicts. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 752: Dynamics of Post-War Peacebuilding. 3 credits.**
This seminar examines the processes of war termination and comparative peace processes; components and dynamics of peacebuilding and the relationships among peacebuilding, democratization, and state-building; roles of third parties in promoting negotiations, peace implementation and sustainable peacebuilding, reconciliation and reconstruction. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**CONF 751 recommended.**

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 754: Micro-theories of Conflict. 3 credits.**
The goal of this course is to explore theoretical approaches to psychological processes, personality, in-group and intergroup dynamics, and social processes in the society as a whole with the emphasis on their role in the processes of conflict resolution and transformation. Critical understanding of psychological and socio-psychological phenomena as both generators and outcomes of conflict will be an important part of the course. This course has three main parts: psychological processes, approaches to person, and group processes and society. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 755: Transforming Conflict through Insight. 3 credits.**
The Insight approach is best understood as an applied human science. Like other applied sciences, it requires students to master an explanatory framework that enables them to frame their questions, formulate their hypotheses, verify their findings, and plan their actions. Thus, the course is designed follow an activity-based, problem-solving approach to learning and using the Insight approach. The objective is to enable students to master the Insight approach by putting it to work, with course meetings build around analytical exercises and activities designed to illuminate assigned readings. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 501, CONF 600, or CONF 801.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 756: Addressing Intractable Conflict. 3 credits.
This course is about the biggest problems facing our communities, our nation, and our world today. Our communities, our nations (the US and others), and the world have proven remarkably unable to "solve" any of these problems. Why? We assert it is because they are all underlain by a more fundamental problem the inability to constructively deal with difficult and intractable conflicts. These conflicts prevent us as individuals, organizations, and governments (at all levels) from making wise decisions or taking effective action that will address any of these pressing problems. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 757: Conflict and Literature. 3 credits.
The purpose of this course is to teach students to read/interpret written and oral texts; explore what imaginative literature can teach us about the causes, motives, dynamics, and possibilities of resolving violent social conflicts; deepen our understanding of the human dimensions of conflicts involving mass movements for social transformation; and practice creating imaginative works of our own. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution college.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 758: Social Dynamics of Terrorism. 3 credits.
Prepares students with analytical frameworks to account for terrorist acts and organizations and explore social dynamics underlying the development of, and response to, terrorism. Topics may include recruitment into violent groups, counterterrorism and human rights concerns, role of religious and political ideologies in terrorism and counterterrorism, media coverage of terrorism, and effects of terrorism on social structures and processes. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 759: Building Peace in Divided Societies. 3 credits.
Explores the roots of peacebuilding as a conflict resolution strategy in terms of changes over time, basic assumptions underpinning the emergence and continuance of conflict, building peace, and challenges to community participation as well as varied reactions to the building peace enterprise. The tensions theoretically and practically between building peace and continuity of the conflictual status quo will be explored in detail throughout the course. The focus on communities intersects and often conflicts with the more prominent global peacebuilding frame, often considered an elite endeavor as well as the political economy of the status quo as evidenced in the United States. Why, for example, does the term peacbuilding not appear regularly when considering domestic US conflict and its effects? There are, of course, more questions than answers. However, the focus of the course is to expand our thinking, conceptualizing, and theorizing regarding the current state of peacebuilding. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801.

Registration Restrictions:
Enrollment is limited to students with a major in Conf Analysis Resolution.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 759: Professional Development Seminars. 1-3 credits.
These 1- and 2-credit courses are scheduled non-conventionally using weekends, concentrated presentations, and intersession periods to develop advanced professional skills. Possible topics include marketing conflict resolution services, academic course design, training design, mediation, facilitation, family practice, fundraising, writing for publication, advanced field research techniques, and grassroots applications of conflict resolution. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: CONF 501, CONF 600, or CONF 801.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 797:** Proposal Development. 1 credit.
Covers development of research proposal for master’s thesis, including framing a question, literature review, and designing appropriate methodology. Students form master’s thesis committee and review Human Subjects Review Board’s guidelines and procedures. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 600 and CONF 610.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CONF 799:** Thesis. 1-6 credits.
Two semesters, usually taken as 3 credits per semester. Original research or analysis under direction of thesis committee. Contact the Graduate Advisor for registration code. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree.

**Recommended Prerequisite:** CONF 600 and CONF 610

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**CONF 801:** Introduction to Conflict Analysis and Resolution. 3 credits.
Introduces field of conflict analysis and resolution for doctoral students. Examines definitions of conflict and diverse views of resolution. Explores thinking about human behavior and social systems as they relate to origins and role of conflict in violent and peaceful social change. Considers appropriate responses to conflict at interpersonal, intergroup, industrial, communal, and international levels. Notes: Prerequisite or corequisite for all PhD CONF students. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 600 and CONF 610

**Registration Restrictions:**
Enrollment is limited to students with a major in Conf Analysis Resolution.

Enrollment limited to students in a Doctor of Philosophy degree.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 802:** Theories of the Person. 3 credits.
Understanding human conflict requires knowledge of human behavior, motivation, and perception. Reviews and critically analyzes several psychological theories for application to conflict analysis and resolution theory and practice. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 801. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment is limited to students with a major in Conf Analysis Resolution.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Conflict Analysis Resolution or Health and Human Services colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 803:** Structural Theories. 3 credits.
Understanding social conflict and potential for conflict resolution requires that both conflict and cooperation be perceived in relation to patterns of social change. Reviews and critiques significant theories of social change to establish a basis for creative conflict analysis and resolution. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Prerequisite:** CONF 801. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment is limited to students with a major in Conf Analysis Resolution.

Enrollment limited to students in a Doctor of Philosophy degree.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONF 804:** Alternate Theoretical Foundations. 3 credits.
Familiarizes students with the ideas generated by the Frankfurt School of social theorists and others who have extended or altered these ideas. Students will use these insights to deepen an understanding of serious social conflicts and to explore the implications of critical theories for conflict resolution processes. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

**Recommended Corequisite:** CONF 801.

**Registration Restrictions:**
Enrollment limited to students in the CA-PHD-CONF program.
Enrollment is limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Conflict Analysis Resolution college.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 811: Quantitative Foundations. 3 credits.
Building on logic of inquiry, introduces steps in research process to prepare dissertation and implement published research. Covers wide array of quantitative research approaches in social sciences, with emphasis on conflict analysis. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 801

Registration Restrictions:
Enrollment limited to students in the CA-PHD-CONF program.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 812: Qualitative Foundations: Social Sciences. 3 credits.
Continuation of steps in research process to prepare dissertation and implement published research. Builds on CONF 811 by examining qualitative research approaches used in social sciences, with emphasis on conflict analysis. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 801

Registration Restrictions:
Enrollment is limited to students with a major in Conf Analysis Resolution.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 813: Qualitative Foundations: Humanities. 3 credits.
Explores qualitative research design as it pertains to the humanities, including the methods and epistemology behind the various issues likely to emerge in the process of conducting research. In addition to material on research design and methodology, reading assignments include several monographs that employ different qualitative methodologies. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Prerequisite: CONF 801.

Registration Restrictions:
Enrollment is limited to students with a major in Conf Analysis Resolution.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 820: Reflective Practice in Interpersonal-Multiparty Conflicts. 3 credits.
Introductory skill-building course integrating conflict theory and practice using reflective practitioner model. Students learn necessary skills for third-party facilitation and mediation, including active listening, empathy, paraphrasing, reframing, and negotiation, in addition to analytical skills of problem solving and creation of transformational processes. Cases for practice focus on interpersonal and intergroup conflict. Offered by Conflict Analysis & Resolution (p. 936). May not be repeated for credit.

Recommended Corequisite: CONF 801.

Registration Restrictions:
Enrollment is limited to students in a Doctor of Philosophy degree.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONF 897: Directed Reading. 1-6 credits.
Independent reading at doctoral level on a specific topic related to conflict and conflict resolution as agreed to by student and faculty member. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Conf Analysis Resolution.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

900 Level Courses

CONF 998: Doctoral Dissertation Proposal. 1-6 credits.
Work on research proposal that forms basis for doctoral dissertation. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree.

Recommended Prerequisite: Successful completion of comprehensive exam.

Registration Restrictions:
Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Dissertation
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CONF 999: Doctoral Dissertation Research. 1-12 credits.
Research on approved dissertation topic under direction of committee.
Student's dissertation proposal must be approved before registering for 999. Notes: At least 12 credits of 998 and 999 must be accumulated toward degree. Offered by Conflict Analysis & Resolution (p. 936). May be repeated within the degree.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.
Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Coll Nursing Health Science, Conflict Analysis Resolution or Health and Human Services colleges.

Schedule Type: Dissertation
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Conservation Studies (CONS)

100 Level Courses

CONS 100: Introduction to Field Conservation Ecology. 2 credits.
In this immersive 1-week experience, students will acquire firsthand exposure to fieldwork in conservation and how conservation professionals contribute to survival of species in natural habitats. Through a combination of lectures, discussions, fieldwork and outdoor adventure students will be introduced to major concepts of ecology (including diversity, succession, species interactions, communities, populations and ecosystems) in the context of species and habitat conservation. Offered by Provost's Office (p. 1190). Limited to three attempts.

Recommended Prerequisite: Participation in the Washington Youth Summit on the Environment.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 110: Special Topics in Conservation. 1-3 credits.
Students acquire first-hand exposure to a specific topic in conservation and how conservation professionals contribute to the long-term survival of species. Through a combination of lectures, discussions, and field/lab work, students explore current questions, methods and applications related to a particular topic in conservation. Course Format: Sections of this Smithsonian-Mason School of Conservation course will be taught as an intensive, mixed-format (lectures, lab exercises, field exercises) offerings, in residential, full-day, 1-3-week sessions held at the 3,200 acre Smithsonian Conservation Biology Institute in Front Royal, VA. Students may also be required to complete pre-course reading assignments, and carry out and submit final projects during (or within six weeks after) the onsite session. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

CONS 320: Conservation in Practice. 3 credits.
Work with a conservation mentor in a practicum experience. Create a portfolio documenting professional development. Notes: Must be taken concurrently with CONS 401, CONS 402, CONS 410, and CONS 490 or CONS 403, CONS 404, CONS 411, and CONS 491. Only offered through the Smithsonian-Mason Semester. Offered by Provost's Office (p. 1190). Limited to three attempts.

Recommended Prerequisite: Junior standing and a college level biological or
Recommended Corequisite: environmental science course. CONS 401, CONS 402, CONS 410, and CONS 490.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

CONS 400: Conservation Seminar. 2 credits.
Examines key conservation issues, based on readings and discussions from the primary literature. Teaches professional development skills for scientists in conservation including fundraising, poster presentations, and interpretation of findings for diverse audiences. Develops skills for obtaining internships, jobs, or graduate positions. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 6 credits. Equivalent to BIOL 351.

Registration Restrictions:
Required Prerequisites: BIOL 308C, EVPP 301C, 302C, BIOL 377C, EVPP 377C or INTS 401C.
C Requires minimum grade of C.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 401: Conservation Theory. 3 credits.
Introduces the field of conservation biology and science-based management of threatened wildlife, habitats, and human landscapes. Provides theoretical background for understanding the importance of biodiversity conservation and sustainability. Notes: Must be taken concurrently with CONS 320, CONS 402, CONS 410, and CONS 490. Only offered through the Smithsonian-Mason Semester. Students cannot get credit for this course and Biology 318 or NCLC 401. Offered by Provost's Office (p. 1190). Limited to three attempts.

Specialized Designation: Green Leaf Related Course
Recommended Prerequisite: Junior standing and a college level biological or
Recommended Corequisite: environmental science course. CONS 320, CONS 402, CONS 410, and CONS 490.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
CONS 402: Applied Conservation. 4 credits.
A practical scientific approach to the nature of biodiversity and species loss. Students participate in field conservation exercises in a variety of settings, as well as endocrine and reproductive technology labs. Students apply field and laboratory experiences to understanding science's connection to management decision-making for conservation. Notes: Must be taken concurrently with CONS 320, CONS 401, CONS 410, and CONS 490. Only offered through the Smithsonian-Mason Semester. Offered by Provost's Office (p. 1190). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: Junior standing and a college level biological or

Recommended Corequisite: environmental science course. CONS 320, CONS 401, CONS 410, and CONS 490.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 404: Biodiversity Monitoring. 4 credits.
Covers the assessment, monitoring and conservation of species and habitats as well as the tools for sampling species and habitats and the evaluation of those tools' effectiveness. Students use this practical, hands-on knowledge to prepare a series of reports and recommendations for future work. Offered by Provost's Office (p. 1190). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Registration Restrictions:
Required Prerequisites: BIOL 308C, EVPP 301C, 302C, BIOL 377C, EVPP 377C or INTS 401C.
C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 405: Landscape and Macrosystems Ecology. 4 credits.
Identify and characterize patterns in landscapes, investigate how they form and change over time, and consider anthropogenic influences. Model populations and communities across landscapes, and consider ways of managing them to achieve goals in managing species and ecosystem processes at local, regional, and continental scales. Offered by Provost's Office (p. 1190). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: BIOL 308C, EVPP 301C, 302C, BIOL 377C, EVPP 377C or INTS 401C.
C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 406: Small Population Management. 4 credits.
Investigates species vulnerability to extinction and the methodologies of preserving genetic diversity in small populations, both in the wild and in captivity. Teaches modeling and laboratory techniques that promote successful captive breeding, such as hormone analysis and assisted reproductive techniques. Examines captive species in the Smithsonian Conservation Biology Institute to learn husbandry practices and skills from keepers and biologists. Offered by Provost's Office (p. 1190). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: BIOL 308C, EVPP 301C, 302C, BIOL 377C, EVPP 377C or INTS 401C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 410: Human Dimensions in Conservation. 3 credits.
Provides sociological, local and global perspectives on conservation issues including adaptive management, conflict resolution, environmental economics, sustainability, public policy, environmental values and public opinion, and conservation ethics. Notes: Must be taken concurrently with CONS 320, CONS 401, CONS 402, and CONS 490. Only offered through the Smithsonian-Mason Semester. Offered by Provost's Office (p. 1190). Limited to three attempts.

Mason Core: Social/Behavioral Sciences, Encore: Sustainability (p. 142)

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: Junior standing and a college level biological or

Recommended Corequisite: environmental science course. CONS 320, CONS 401, CONS 402, and CONS 490.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 440: Ecology Field Skills. 4 credits.
Directed field studies emphasizing ecology and behavior. Topics vary but may include design of field manipulation, data collection and analysis, and introduction to organisms of study site. May include field trips. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to BIOL 357, EVPP 440.

Recommended Prerequisite: BIOL308 or BIOL310 (or equivalent course), or INTS 401 Conservation Biology

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 460: Statistics and Study Design in Ecology and Conservation. 3 credits.
An understanding of statistics and study design is essential to success in the fields of ecology and conservation. However, many of the analyses of greatest utility for ecological data are frequently unable to be addressed in introductory courses, while advanced courses often delve deeply into a limited set of techniques. This course bridges this gap: building on knowledge obtained in introductory courses, additional techniques appropriate to many forms of ecological data and more advanced approaches will be introduced. This course will address the fundamentals of study design, linking choices made when establishing a research project to the types of analyses appropriate


to the chosen design. Emphasis will be placed on understanding the output of analyses, and separating statistical significance from biological or ecological significance. Additionally, skills in data manipulation, analyses, and graphics using the R statistical computing environment will be developed. Offered by Provost’s Office (p. 1190). Limited to three attempts.

**Registration Restrictions:**

**Required Prerequisites:** BIOL 214\(^C\), SOCI 313\(^C\), STAT 250\(^C\) or CONS 404\(^C\).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 480: Primate Behavior, Ecology and Conservation. 3 credits.
Using primates as a focal taxon, this two-week course examines the theoretical background on how ecology, behavior, and life history influence primate abundance, distribution, and population dynamics. Teaches data collection methods for primate behavior studies, survey methods and habitat assessment techniques. Topics include several conservation-related case studies. Includes the development of a research proposal concerning primate socio-ecological strategies to address larger conservation issues. Notes: Students have the option to register for an “add-on” field experience course, CONS 497 “Primate Behavior and Conservation in Peru”, through the Mason Study Abroad Global Education Office (GEO). In this course, students conduct independent research on primate species in the wild. The course takes place at the Los Amigos Biological Research Station in Peru. Offered by Provost’s Office (p. 1190). Limited to three attempts.

**Recommended Prerequisite:** This course is open to 3rd and 4th year undergraduate students who have obtained a minimum GPA of 2.25. The course is also open to recent graduates, non-degree seeking students and Mason students.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 480: Primate Behavior, Ecology and Conservation. 3 credits.

This course is open to 3rd and 4th year undergraduate students who have obtained a minimum GPA of 2.25. The course is also open to recent graduates, non-degree seeking students and Mason students.

This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 491: RS: Conservation Management Planning. 4 credits.
Explores strategies and decisions that help secure the long-term survival of threatened species and habitats. Focuses on the planning tools necessary to define and set conservation goals and quantitatively assess species and areas of conservation value and prioritization. Offered by Provost’s Office (p. 1190). Limited to three attempts.

**Mason Core:** Encore: Sustainability, Synthesis (p. 142)

**Specialized Designation:** Green Leaf Related Course, Research/Scholarship Intensive

**Registration Restrictions:**

**Required Prerequisites:** BIOL 308\(^C\), EVPP 301\(^C\), 302\(^C\), BIOL 377\(^C\), EVPP 377\(^C\) or INTS 401\(^C\).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 496: Research in Conservation. 6 credits.
One-on-one research experience with a conservation practitioner over 5 weeks (about 36 hours per week) on a conservation research project associated with that practitioner’s program. Offered by Provost’s Office (p. 1190). May be repeated within the degree for a maximum 12 credits.

**Mason Core:** Capstone (p. 142)

**Registration Restrictions:**

**Required Prerequisites:** BIOL 308\(^C\), EVPP 301\(^C\), 302\(^C\), BIOL 377\(^C\), EVPP 377\(^C\) or INTS 401\(^C\).

\(^C\) Requires minimum grade of C.

**Schedule Type:** Independent Study

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 497: Special Topics in Conservation. 1-4 credits.
Topics of current relevance to the field of conservation. Offered by Provost’s Office (p. 1190). May be repeated within the degree for a maximum 9 credits.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

CONS 498: Internship. 1-3 credits.
Directed readings and final reflective paper or project in conjunction with an internship subject to instructor approval. Permission to enroll must be obtained from the Mason Center for Conservation Studies at least two weeks prior to the start of the semester. Offered by Provost’s Office (p. 1190). May be repeated within the degree for a maximum 9 credits.

**Schedule Type:** Internship

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)
**CONS 499: Independent Study/Research.** 1-3 credits.
An independent project or directed exploration into an area of conservation not covered by other courses. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Permission of instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

**CONS 540: Ecology Field Skills.** 4 credits.
Graduate level directed field studies emphasizing ecology and behavior. Topics vary but include design of field manipulations, data collection and analysis, and introduction to organisms of study site. May include field trips. Offered by Provost's Office (p. 1190). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 308 or BIOL 310, or EVPP 305 and EVPP 306, or INTS 401 or equivalent course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONS 560: Statistics and Study Design in Ecology and Conservation.** 3 credits.
An understanding of statistics and study design is essential to success in the fields of ecology and conservation. However, many of the analyses of greatest utility for ecological data are frequently unable to be addressed in introductory courses, while advanced courses often delve deeply into a limited set of techniques. This course bridges this gap: building on knowledge obtained in introductory courses, additional techniques appropriate to many forms of ecological data and more advanced approaches will be introduced. This course will address the fundamentals of study design, linking choices made when establishing a research project to the types of analyses appropriate to the chosen design. Emphasis will be placed on understanding the output of analyses, and separating statistical significance from biological or ecological significance. Additionally, skills in data manipulation, analyses, and graphics using the R statistical computing environment will be developed. Offered by Provost's Office (p. 1190). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** BIOL 214\(^C\), SOCI 313\(^C\), STAT 250\(^C\) or CONS 404\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CONS 580: Primate Behavior, Ecology and Conservation.** 3 credits.
Using primates as a focal taxon, this two-week course examines the theoretical background on how ecology, behavior, and life history influence primate abundance, distribution, and population dynamics. Teaches data collection methods for primate behavior studies, survey methods and habitat assessment techniques. Topics include several conservation-related case studies. Includes the development of a research proposal concerning primate socio-ecological strategies to address larger conservation issues. Notes: Students have the option to register for an "add-on" field experience course, CONS 497 "Primate Behavior and Conservation in Peru", through the Mason Study Abroad Global Education Office (GEO). In this course, students conduct independent research on primate species in the wild. The course takes place at the Los Amigos Biological Research Station in Peru. Offered by Provost's Office (p. 1190). May not be repeated for credit.

**Recommended Prerequisite:** This course is open to graduate students who have obtained a minimum GPA of 3.0. The course is also open to non-Mason students.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CONS 597: Special Topics in Conservation.** 1-4 credits.
Topics of current relevance to the field of conservation. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**CONS 625: Statistics for Ecology and Conservation Biology.** 3 credits.
Provides an overview of experimental design and analysis techniques used in cutting-edge ecological research and conservation. Focuses on increasing knowledge of statistical tests, interpretation of results, and ability to disseminate and clearly explain these results. Students gain an overview of applied monitoring and analysis techniques such as distance sampling, genetic analysis, niche and species distribution modeling, and spatial analysis. Notes: Offered through the Smithsonian-Mason School of Conservation in cooperation with the Smithsonian Conservation Biology Institute on site in Front Royal, VA. Course Format: This course is taught as an intensive, mixed format (lectures and computer work) offering, in a residential full-day (8:30am-6pm), 1 week, 10 day or 2 week session. Students complete pre-course assignments, and are graded in participation, computer exercises and a final exam. Some night sessions may occur. Offered by Provost's Office (p. 1190). May not be repeated for credit.
Recommended Prerequisite: Basic statistics course

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONS 630: Species Monitoring & Conservation. 3 credits.
Explores monitoring and conservation research methods and approaches for specific taxa through lectures, case studies, lab exercises, and field work. Focuses on conservation science and conservation outreach techniques. Notes: Offered through the Smithsonian - Mason School of Conservation Studies in cooperation with the Smithsonian Conservation Biology Institute on site in Front Royal, VA. Course Format: This course is taught as an intensive, mixed format (lectures and computer work) offering, in a residential full-day (8:30am-6pm), 1 week, 10 day or 2 week session. Students complete pre-course assignments, and are graded in participation, computer exercises and a final exam. Some night sessions may occur. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: A general biology (or relevant species-related) course and a statistics course, or permission of instructor. Prior coursework in environmental science, zoology and ecology recommended.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CONS 697: Special Topics in Conservation. 1-3 credits.
Topics of current relevance to the field of conservation. Notes: May be repeated for credit with approval of the Smithsonian Mason School of Conservation. Notes: May be repeated for credit with approval of the Smithsonian-Mason School of Conservation. Offered through the Smithsonian-Mason School of Conservation in cooperation with the Smithsonian Conservation Biology Institute on site in Front Royal, VA. Course Format: This course is taught as an intensive, mixed format (lectures and computer work) offering, in a residential full-day (8:30am-6pm), 1 week, 10 day or 2 week session. Students complete pre-course assignments, and are graded in participation, computer exercises and a final exam. Some night sessions may occur. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Counseling and Development (EDCD)

500 Level Courses

EDCD 525: Advanced Human Growth and Development. 3 credits.
Covers human development throughout the life span, including emotional, physical, and cognitive development; and emphasizes personal adjustment and achievement. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**EDCD 601: Introduction to Research in Counseling.** 3 credits.
Enhances knowledge of and involvement in counseling research by introducing techniques and principles to design, implement, and evaluate research projects and program development in community and school settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 602: Foundations in Counseling.** 3 credits.
Provides students with an introduction to the field of professional counseling. Provides graduate students in counseling with knowledge about the history and foundations of counseling, the professional identity and multifaceted role of the counselor, program mission statement and its relationship to counseling. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 603: Counseling Theories and Practice.** 3 credits.
Covers major theoretical approaches to counseling from a multicultural perspective and provides supervised introduction to basic skills. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDCD 602 (may be taken concurrently).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Counseling and Development, Education, Post-Masters Counseling Lic or Psychology.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 604: Assessment and Appraisal in Counseling.** 3 credits.
Prepares students to become informed about psychological and educational tests and assessment procedures that are used and applied in a counseling context. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** EDCD 601B.
B Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 606: Counseling Children and Adolescents.** 3 credits.
Presents theories, techniques, and counseling issues relevant to children and adolescents. Provides practice with an emphasis on process and culturally competent counseling strategies. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** EDCD 603B.
B Requires minimum grade of B.

Enrollment limited to students with a major, minor, or concentration in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 608: Group Processes and Analyses.** 4 credits.
Presents theories appropriate to various types of groups and descriptions of group practices, methods, dynamics, and facilitative skills. Focuses on applying theory to practice. Includes lab. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** EDCD 606B or 609B.
B Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Counseling and Development or Counseling.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
**EDCD 609: Clinical Mental Health Counseling.** 3 credits.
Covers counseling skills, process and strategies associated with major counseling theories. Provides intensive practice in both technical and conceptual skills with emphasis on self-awareness, case conceptualization, racial-cultural considerations, and supervised practice in a community setting. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** EDCD 602*B* and 603*B*.
*B* Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 610: Career and Educational Counseling.** 3 credits.
Presents theories and counseling issues relevant to career counseling in schools and community agencies. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** (EDCD 606*B* or 609*B*) and EDCD 604*B*.
*B* May be taken concurrently.
*B* Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 611: Introduction to Ethical and Legal Issues in School Counseling.** 3 credits.
Introduces principles, practices, and application of ethical and legal issues in school counseling. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** EDCD 602*B*, 603*B* and 613*B*.
*B* Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 613: Introduction to School Counseling.** 3 credits.
Addresses the role of the school counselor and provides an understanding of the coordination of counseling program components as they relate to the school and the wider community. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** EDCD 602*B*.
*B* May be taken concurrently.
*B* Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 615: School-Based Mental Health.** 3 credits.
Provides an overview of mental disorders and disabilities impacting children and adolescents, with particular attention devoted to early identification and intervention in a school setting. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** EDCD 602*B* and 603*B*.
*B* May be taken concurrently.
*B* Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCD 619: Trauma and Crisis Counseling.** 3 credits.
Provides an introduction to trauma and crisis counseling using theories and techniques from bioecological and multicultural-social justice perspectives. Covers assessments and interventions with individuals, families, and communities who have experienced trauma/crisis. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** EDCD 606*B* or 609*B*.
*B* Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 621: School, Family, and Community Collaboration. 2 credits.
Provides an overview of consultation and collaboration theories and practice. Helps students develop consultation and collaboration skills that may be applied in schools, community agencies, or other organizational settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDCD 602B, 613B or 654B.
B Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 626: Principles and Practices of School Counseling. 3 credits.
Focuses on the comprehensive development, delivery, and evaluation of school counseling programs based on the Virginia state model and the American School Counselor Association national model. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDCD 602B and 613B.
B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 628: Counseling and Social Justice. 3 credits.
Discusses the Counseling and Development program's mission statement of Social Justice, Multiculturalism, Internationalism, Advocacy and Leadership. Provides an overview of theories and models of social justice, advocacy, and leadership. Examines theories and models from a multicultural perspective and discusses within the context of counseling in school and community settings. Examines the role of counselors as change agents, leaders, and advocates. Note: Students must have completed 24 credits in the Counseling program. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDCD 660B, 608B and (EDCD 654B or 613B).
A May be taken concurrently.
B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 652: Introduction to Substance Abuse Counseling. 3 credits.
Introduces substance abuse counseling. Covers addiction issues, diagnosis and treatment planning, and individual and group counseling strategies with diverse populations. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDCD 603 or concurrent enrollment.

Registration Restrictions:
Enrollment limited to students with a major, minor, or concentration in Community Agency Counseling or Post-Masters Counseling Lic.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 654: Counseling, Ethics, and Consultation in Community Agencies. 3 credits.
Provides a foundation for engaging in counseling, consultation, and ethical decision making within agency settings. Examines the role of the community agency counselor, with attention to multicultural and social justice perspectives. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDCD 603 or concurrent enrollment.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Community Agency Counseling or Post-Masters Counseling Lic.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 656: Diagnosis and Treatment Planning for Mental Health Professionals. 3 credits.
Introduces students to fundamental concepts in the classification of psychopathology as well as the clinical interviewing skills necessary
to apply DSM-5 diagnoses to clients in a sound and ethical manner. Incorporates an explicit focus on the role of race and culture in diagnosis and treatment. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDCD 603 (may be taken concurrently).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Counseling and Development, Education or Post-Masters Counseling Lic.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 658: **Couples and Family Counseling.** 3 credits.
Introduces major approaches to counseling couples and families. Uses case studies and simulations to facilitate transition from theory to practice. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDCD 609 (may be taken concurrently).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Community Agency Counseling or Post-Masters Counseling Lic.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 660: **Multicultural Counseling.** 3 credits.
Examines multicultural issues in counseling and explores the complexities of culture and its influence on the client/counselor relationship. Promotes awareness and understanding of cultural differences and their effect on the counseling relationship. Investigates variables that interact with culture that may interfere with the counseling relationship, such as historical, political, socioeconomic, psychosocial adjustment, racism, prejudice, discrimination, and oppression. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** EDCD 608B.

**Required Prerequisite:** Completion of CNDV program coursework.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDCD 750: **Practicum in Mental Health Counseling.** 3 credits.
Provides supervised practice in a counseling setting similar to the setting in which the student may work with an emphasis on the counseling process. Provides opportunities to practice counseling skills related to ethics, supervision, self-care, decision-making, and professional identity and relationships. Note: students without 30 hours of prior Counseling program coursework will be dropped. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** EDCD 608B.

**B** Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDCD 751: **Practicum in School Counseling.** 3 credits.
Provides supervised practice in a school counseling setting similar to the setting in which the student may work with an emphasis on the counseling process. Provides opportunities to practice counseling skills related to ethics, supervision, self-care, decision-making, and professional identity and relationships. Note: students without 30 hours of prior Counseling program coursework will be dropped. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** EDCD 608B.

**B** Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDCD 755: **Practicum in Counseling.** 3 credits.
Provides supervised practice in a counseling setting similar to the setting in which the student may work with an emphasis on the counseling process. Offers students the opportunity to practice counseling skills related to ethics, supervision, self-care, decision-making, and professional identity and relationships. Note: students without 30 hours of prior Counseling program coursework will be dropped. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisite:** EDCD 608B.

**B** Requires minimum grade of B.

Enrollment is limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
overall GPA of 3.00; no grade lower than B in skills courses EDCD 603, 606/609 and 608; no more than two grades of C in any other graduate course work required by CNDV program; permission of advisor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Counseling and Development, Education or Post-Masters Counseling Lic.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship
**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDCD 791: Internship in Counseling.** 3 credits.
Provides supervised practice in a counseling setting similar to the setting in which the student may work with an emphasis on the counseling process. Builds on previous practicum experiences. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Completion of CNDV program course work except for electives; overall GPA of 3.00; no grade lower than B in skills courses EDCD 603, 606/609, 608 and 755; no more than two grades of C in any other graduate course work required by CNDV program; permission of advisor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Counseling and Development, Education or Post-Masters Counseling Lic.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship
**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDCD 792: Internship in Mental Health Counseling I.** 3 credits.
Provides supervised practice in a counseling setting similar to the setting in which the student may work with an emphasis on the counseling process. Develops skills in case conceptualization, assessing needs, and applying counseling knowledge and skills with clients under supervision. Note: Completion of all required counseling program coursework with a B or better; permission of advisor; students may be concurrently registered for no more than 6 credits of the following courses: EDCD 610, EDCD 621, or electives. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: EDCD 791B.
B Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Internship
**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDCD 793: Internship in Mental Health Counseling II.** 3 credits.
Provides supervised practice in a counseling setting similar to the setting in which the student may work with an emphasis on the counseling process. Builds on previous practicum and Internship I experiences, including evaluating interventions and programs. Note: Completion of all required counseling program coursework with a B or better; permission of advisor; students may be concurrently registered for program electives. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: EDCD 792B.
B Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Internship
**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDCD 794: Internship in School Counseling I.** 3 credits.
Provides supervised practice in a school counseling setting similar to the setting in which the student may work with an emphasis on the counseling process. Develops skills in case conceptualization, assessing needs, and applying counseling knowledge and skills with clients under supervision. Note: Completion of all required counseling program coursework with a B or better; permission of advisor; students may be concurrently registered for no more than 6 credits of the following courses: EDCD 610, EDCD 621, or electives. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: EDCD 791B.
B Requires minimum grade of B.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

**Schedule Type:** Internship
**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDCD 795: Internship in School Counseling II.** 3 credits.
Provides supervised practice in a counseling setting similar to the setting in which the student may work with an emphasis on the counseling process. Builds on previous practicum and Internship I experiences, including evaluating interventions and programs. Note: Completion of all required counseling program coursework with a B or better; permission of advisor; students may be concurrently registered for program electives. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: EDCD 794B.
- Requires minimum grade of B-.

Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment limited to students in a Graduate Certificate or Master of Education degrees.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDCD 797: Advanced Topics in Education. 1-6 credits.
See EDUC 797. Offered by Graduate School of Education (p. 162). May be repeated within the term.

Registration Restrictions:
Required Prerequisite: EDCD 603B-.
B- Requires minimum grade of B-.

Enrollment is limited to students with a major in Counseling and Development, Counseling or Post-Masters Counseling Lic.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

800 Level Courses

EDCD 894: Advanced Family and Systems Counseling. 3 credits.
Develops advanced level skills and competencies in the practice of family and systems counseling. Multiple theoretical models for practice in a multicultural society will be explored, as will the applications of those models in multiple professional settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to PhD in Counseling and Development Program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 895: Emerging Issues in Counseling and Development. 3 credits.
Examines issues in counseling profession, including counseling theory and methodology, development of client groups, new roles and settings for counselors, emerging assessment procedures, new understanding of diagnosis, and impact of societal changes on counseling profession. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the PhD program or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Counseling and Development or Counseling.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 896: Advanced Multicultural Counseling. 3 credits.
Focuses on advanced issues in multicultural counseling, including multicultural counseling theories, skills, assessment, supervision, research, and ethics. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Masters degree in counseling or related counseling field from an accredited institution of higher education and EDCD 660, or equivalent; EDCD 895; admission to Counseling and Development Doctoral Program, or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 897: Advanced Group Counseling. 3 credits.
For doctoral students who have had experience and training in group work. Provides greater understanding and advanced skill application in group dynamics, group process, and group leadership. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Masters degree in counseling or related counseling field from an accredited institution of higher education and EDCD 608 or equivalent; EDCD 895; admission to the Counseling and Development Doctoral Program, or Permission of Instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 898: Grant Writing and Publishing. 3 credits.
Focuses on grant writing and publishing in counseling and psychology. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Masters degree in counseling or related counseling field from an accredited institution of higher education and EDCD 895; admission to the Counseling and Development Doctoral Program, or Permission of Instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.
EDCD 899: The Theory and Practice of Counseling Supervision. 4 credits. Explores counseling supervision theory from a multicultural and social justice perspective. Students will apply these theories by supervising Master’s level community agency and school counseling practicum students under the supervision of the instructor. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to PhD in Counseling and Development Program; Master’s degree in Counseling or related field, or permission of the instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

900 Level Courses

EDCD 900: Leadership and Advocacy in the Counseling Profession. 4 credits. Introduces students to broad theoretical concepts, strategies, and skills related to leadership and advocacy within the counseling profession, and will help students integrate leadership and advocacy into their professional identity. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to PhD in Counseling and Development Program.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 990: Advanced Internship in Counseling Leadership. 3 credits. Provides supervised practice in counseling leadership setting or position. Emphasizes counseling leadership in practice. Notes: Biweekly class emphasizes site processing, leadership skills, and topical seminars. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the Ph.D. in Education program, Counseling and Development specialization; EDCD 628 or equivalent; EDCD 895.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 991: Advanced Internship in Counseling. 6 credits. Provides an intensive multicultural social justice oriented field based supervised experience. Emphasizes intensive use of multicultural competencies in practice, supervision, and program development and evaluation in order to address social justice issues for clients in school or community settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the Ph.D. in Education program, Counseling and Development specialization, EDCD 628 or equivalent, EDCD 895 and EDCD 896.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCD 992: Advanced Internship in Social Justice. 3 credits. Provides opportunities to implement programs and strategies to affect social justice for clients in school or community settings. Notes: Biweekly class emphasizes topical seminars and supervision. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the PhD in Education program, Counseling and Development specialization, EDCD 628 or equivalent; EDCD 895.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

100 Level Courses

CRIM 100: Introduction to Criminal Justice. 3 credits. Overview of the American system of criminal justice, covering theories of justice, criminal law, policing, courts and associated pre and post-trial legal processes, punishment and corrections, and juvenile justice. Required for all criminology majors and minors. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Specialized Designation: Discovery of Scholarship.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
200 Level Courses

CRIM 210: Introduction to Criminology. 3 credits.
Explores and evaluates how crime is defined and measured, and examines crime patterns and trends. Provides an overview and critical assessment of the major theories of crime causation. Notes: CRIM majors who are concentrating in criminal justice are strongly encouraged to take this course before or during the first semester of taking upper-level courses in the concentration. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 220: Introduction to Law and Society. 3 credits.
Introduces the relationship between law and society. Discusses theoretical perspectives from a number of social science disciplines. promotes a foundational understanding of the concept of law and the origins, development, and role of law in society, particularly outside of formal legal institutions. Topics covered may include legal mobilization, law and social change, social movements, law and inequality, and law’s relationship to social control. Notes: CRIM majors who are concentrating in Law and Society are strongly encouraged to take this course before or during the first semester of taking upper-level courses in the concentration. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 230: Introduction to Homeland Security. 3 credits.
Introduces fundamental concepts of homeland security. Examines governmental actions designed to prevent, prepare for, respond to, and recover from man-made and natural disasters. Focuses on efforts to align preparedness, incident management, and emergency response plans from various agencies (federal, state, local, tribal, private sector, and non-governmental). Notes: CRIM majors who are concentrating in homeland security and justice are strongly encouraged to take this course before or during the first semester of taking upper-level courses in the concentration. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

CRIM 301: Public Law and the Judicial Process. 3 credits.
Covers American judicial organization and operation, role of the Supreme Court in policy formation, and selected constitutional principles. Offered by Criminology, Law and Society (p. 332). Limited to three attempts. Equivalent to GOVT 301.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 302: Delinquency. 3 credits.
Presents theories of juvenile delinquency and societal reactions to it, gender differences in rates and types, historical overview, development of juvenile justice system, and critical assessment of juvenile justice and its alternative. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 304: Computer Crime, Forensics, and Auditing. 3 credits.
Covers computer crime, relevant laws, agencies, standards, auditing, logging, forensics, and related software. Explores legal principles such as chain of evidence, electronic document discovery, eavesdropping, and entrapment. Hands-on experience with forensics tools. Offered by Criminology, Law and Society (p. 332). Limited to three attempts. Equivalent to IT 357.

Recommended Prerequisite: IT 103 or IT 104 and a grade of B or better in IT 223.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 305: Crime and Crime Policy. 3 credits.
Examines the development of crime policy, including the influence of crime trends, politics, public opinion, media, criminological theory, and empirical research. Considers the effectiveness of crime policy. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 306: Criminal Justice Ethics. 3 credits.
Analyzes ethical principles relevant for those working in criminal justice. Required for all criminology majors. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 307: Social Inequality, Crime, and Justice. 3 credits.
Explores the significance of social inequality (especially race and gender inequality) for several crime and criminal justice issues. Examines variations in criminal offending and victimization, and explores disparities in criminal justice processing. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.
Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 308: Human Rights and Justice. 3 credits.
Studies the norms, laws, and systems for the promotion and protection of human rights. Provides a foundation for understanding historical, legal, political, economic, and ethical aspects of human rights. Examines ideological and cultural perspectives, sources of violations, the United Nations, regional and national mechanisms, special issues (e.g., women, torture, children, minorities), and the role of nongovernmental organizations. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 310: Introduction to the Intelligence Community. 3 credits.
Introduces students to the structure, function, and process of the intelligence community including the basic skills in writing, research, and presentation used in intelligence analysis. Required for all intelligence analysis minors. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 312: Intelligence Analysis Techniques. 3 credits.
Introduces the key analytical techniques used by entry-level analysts in the Intelligence community. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: CRIM 310 or L310.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 315: Research Methods and Analysis in Criminology. 3 credits.
Provides an introduction to research design, methods, and analysis in the field of criminology. Students learn to understand, interpret, and critique quantitative and qualitative research approaches, and become intelligent consumers of research. Notes: This course does not meet the College’s IT requirements. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Specialized Designation: Scholarly Inquiry.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 320: Crime and Place. 3 credits.
Focuses on the analysis of locations that attract and repel crime, displacement of crime, and identifying and measuring crime concentrations. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 325: Hate Crime. 3 credits.
Provides an introductory understanding of the definitions of hate crime; extremist groups and individuals; reporting, investigation, and prosecution of hate crimes; and hate crime policy and legislation. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 350: Counterintelligence. 3 credits.
Introduces the legal authority, objectives, and guidelines of the counterintelligence discipline. Covers the investigative, defensive, offensive, and collection activities of the counterintelligence function. Notes: Elective course for the Intelligence Analysis minor. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: CRIM 310 or L310.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

CRIM 400: Applied Criminal Psychology. 3 credits.
Uses overview of psychological and criminological theories to apply behavioral science theory to practical application in forensic settings. Focuses on analysis of various crime scenes and characteristics of offenders. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 401: Policing in America. 3 credits.
Fundamental issues relevant to contemporary public policing in America: role and history of police; impact on crime, disorder, and other social problems; discretion and its control; moral hazards; police legitimacy and public support; police culture and the police organization; and community policing. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100
CRIM 402: Punishment and Corrections. 3 credits.
Covers theories on forms of punishment systems; punishment and corrections as a product of historical, cultural, and political changes; differences by race and gender in punishment and corrections; problems of social control and violence in prisons; alternative rehabilitation; and community prevention strategies. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 403: Community Corrections. 3 credits.
Studies the purposes and goals of community-based corrections and its various components, including pretrial diversion, probation, parole, and emerging alternatives to traditional incarceration. Addresses issues related to offenders returning to the community and critical issues facing jails, community corrections, and the management of offenders in community settings. Examines the role of community corrections within the broader correctional system. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 404: Crime Victims and Victimization. 3 credits.
Explores experiences of crime victims, distribution of the risks of victimization, and causes and consequences of victimization. Also considers nature and influence of victim's rights advocates. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 405: Law and Justice around the World. 3 credits.
Comparative inquiry into the models of legal and justice systems around the world. Considers how social and legal norms are created, and how different societies exercise powers of social control. Evaluates justice models in action, including law and courts, policing, corrections, and juvenile justice. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 406: Family Law and the Justice System. 3 credits.
Introduction to the elements of family law, and exploration of its influence on American social life and contemporary notions of justice. Topics include marriage and parenting, divorce, custody and support, nontraditional families, and domestic violence. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 407: Advanced Topics in Law and Society. 3 credits.
Provides an in-depth examination of the law's role in social life to deepen students' appreciation of the law in action. Focuses on scholarly research that describes and explains how legal actors, processes, and institutions operate in the world. Topics include: theories of legal change, law's relationship to class, gender, and race, and law, culture, and identity. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100 or GOVT 301

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 408: Criminal Courts. 3 credits.
Studies the workings, advantages, and frailties of criminal courts, and explores whether the system works effectively and efficiently. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100 or GOVT 301

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 409: Community Policing. 3 credits.
Study of community policing, particularly in the United States. Covers history and development of community policing, community relations, problem solving, and issues of organizational change. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 410: Criminal Investigations. 3 credits.
Focuses on criminal investigations and the role of the criminal investigator in the criminal justice system. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
CRIM 411: Innovations in Policing. 3 credits.
New developments in law enforcement's response to technical, legal, and social change. Examines law enforcement policies and practices in the past and present, and directions for the future. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 422: Controversial Legal Issues. 3 credits.
Focuses on the study of law as an institution that continuously interacts with other social institutions at the individual, community, state, and federal levels. Examines how constitutional and statutory laws are interpreted by the courts to determine and define the law through contemporary, controversial, legal issues. Explores how the courts, using the law, resolve today's most controversial issues. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 423: Constitutional Law: Civil Rights and Liberties. 3 credits.
Studies First Amendment freedoms of speech, press, assembly, association, and religion; the right to privacy; and Fourteenth Amendment right to equal protection. Offered by Criminology, Law and Society (p. 332). Limited to three attempts. Equivalent to GOVT 423.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 424: Constitutional Law: Criminal Process and Rights. 3 credits.
Studies constitutional law pertaining to the rights of the criminally accused from investigation and evidence through attorney, trial, and punishment stages at federal and state levels. Required for all criminology majors. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 425: Criminal Justice Management. 3 credits.
Explains the management function for current and future criminal justice managers. Emphasizes communication, leadership skills, and organizational development. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: D or higher in CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 430: Criminal Law. 3 credits.
An overview of the definitions and elements of crimes, defense strategies, and the differences in criminal law across states. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 460: Surveillance and Privacy in Contemporary Society. 3 credits.
Philosophical perspectives, historical context, technological developments, and institutional changes that surround controversies about privacy and surveillance in contemporary society. Explores public and private institutions conducting surveillance, how they calculate and manage risk, and legal constraints on surveillance activities. Offered by Criminology, Law and Society (p. 332). Limited to three attempts. Equivalent to GOVT 460.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 462: Law Enforcement and Homeland Security. 3 credits.
Examines the effect of 9/11 on law enforcement organizations in the United States and explores the evolving relationship between the military, federal, state, and local law enforcement agencies in the post-9/11 era. Emphasis on understanding the entire framework of homeland security in the United States and the unique issues faced by local law enforcement. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 471: Prevention and Deterrence of Crime. 3 credits.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 475: Theory and Politics of Terrorism. 3 credits.
Explores origins of terrorism, tracing development from early states to a modern mode of conflict. Presents national, regional, and global perspectives. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.
CRIM 490: Special Topics. 1-3 credits.
Recent developments in the field. Notes: Topics vary. May be used to fulfill requirements for different concentrations in the BS in criminology, law, and society depending on the topic. May be repeated when topic is different. Offered by Criminology, Law and Society (p. 332). May be repeated within the term for a maximum 15 credits.

Recommended Prerequisite: CRIM 100

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 495: Capstone in Criminology, Law and Society. 3 credits.
Provides an in-depth examination of a historical and contemporary issues facing criminology and law and society scholars. Focuses on the philosophies, practices, and procedures used by individuals and organizations and uses a variety of materials, experiences and resources. Offered by Criminology, Law and Society (p. 332). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Specialized Designation: Scholarly Inquiry, Writing Intensive in Major

Recommended Prerequisite: CRIM 100; ENGL 101/ENGH 101; ENGL 302/ENGH 302; COMM 100, or 104; 60 credits.

Schedule Type: Lecture, Recitation

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

CRIM 498: Research Practicum. 1-3 credits.
Supervised research experience with a professor in a non-classroom setting. Offers students an opportunity to gain valuable research experience and training in research. Students are required to work 45 hours (across the semester) per credit. Notes: Open to majors in CRIM with 60 credits and permission of instructor and department. Offered by Criminology, Law and Society (p. 332). May be repeated within the term for a maximum 6 credits.

Registration Restrictions: CRIM 100 and CRIM 315.
CRIM 509: Justice Organizations and Processes. 3 credits.
Examines structures, practices, and performance of organizations involved in administration of justice: law enforcement, courts and legal agencies, corrections, regulatory and related agencies, and private organizations. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. Equivalent to PUAD 509.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 510: Policing in a Democratic Society. 3 credits.
Fundamental issues in policing a democratic society: police mission, subculture, performance measurement, moral hazards, discretion, impact on crime and disorder, legitimacy, community policing, and other reforms. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 511: Evidence-based Crime and Justice Policy. 3 credits.
Examines the role that science and research play in criminal justice agencies, policies and practices. Includes understanding the strengths and limitations of the evidence-based practices framework, reviewing evidence about the effectiveness, fairness, theoretical underpinnings, and efficiency of various policies and practices to deal with crime and justice issues, and understanding how research is translated into policy and practice. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 512: Implementing Crime and Justice Policy. 3 credits.
Introduces students to the art and science behind implementing policies in today's criminal justice organizations. While considering effective, best, and evidence-based practices, students will learn about both processes and outcomes related to adopting, adapting, implementing and sustaining reform in justice agencies. Key concepts include technology transfer, transportability, uptake, diffusion, fidelity, and change. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 513: Leadership in Justice Organizations. 3 credits.
Explores theory and evidence of various approaches to leadership and management as applied in justice organizations. Examples of leadership approaches include, trait, skills, style, contingency, path-goal, transformational, servant, team, and psychodynamic. Practical aspects of coping with the risks of leadership are included. Involves case studies and student self analysis using diagnostic tools. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
CRIM 514: Legal and Ethical Issues in Criminal Justice. 3 credits. Legal and ethical issues in the making and administration of criminal justice policy in the United States. Covers the legal framework governing each issue, competing values influencing policies and practice, and the history of legal reforms in the criminal justice system. Recurrent underlying themes are legalized discretion, gender and racial equality, due process, and procedural justice. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Schedule Type: Seminar
Grading: This course is graded on the Graduate Regular scale. (p. 84)

CRIM 515: Criminal Justice Research Methods and Data Analysis. 3 credits. Methods of scientific inquiry applied to criminal justice issues. Includes formulation of research questions, logic of inquiry, research design, observation, measurement, and introduction to social statistics and applications to criminal justice data analysis. Learn to critique research and present data in agency reports. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Schedule Type: Seminar
Grading: This course is graded on the Graduate Regular scale. (p. 84)


Recommended Prerequisite: CRIM 515.

Registration Restrictions: Enrollment limited to students with a major in Criminal Justice or Criminal Justice and Society or a license in criminal justice.

Schedule Type: Seminar
Grading: This course is graded on the Graduate Regular scale. (p. 84)

CRIM 517: Research Practicum in Justice Policy and Practice. 3 credits. Student-initiated research project supervised by instructor. Student will identify a client criminal justice organization or stakeholder group and conduct useful research on an issue of interest to that organization or group, producing a policy-oriented white paper suitable for delivery to the organization or group. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Recommended Prerequisite: CRIM 515, CRIM 516.

Registration Restrictions: Enrollment limited to students with a major in Criminal Justice or Criminal Justice and Society.

Schedule Type: Seminar
Grading: This course is graded on the Graduate Regular scale. (p. 84)

CRIM 521: The Constitution, Criminal Procedure, and Security. 3 credits. Focuses on understanding legal doctrines that form basis of U.S. constitutional criminal procedural rights and how doctrines develop, why courts rule as they do, and evaluating strengths, weaknesses of rights. For MS Students. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Schedule Type: Seminar
Grading: This course is graded on the Graduate Regular scale. (p. 84)

CRIM 523: Law and Social Control. 3 credits. Competing conceptions of law, political systems, and social control. Intellectual traditions behind social control, its definitions, and mechanisms for regulating public and private behavior, by both individuals and organizations in society. For MS Students. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Schedule Type: Seminar
Grading: This course is graded on the Graduate Regular scale. (p. 84)
CRIM 541: Conduct of Justice Organizations at the Street Level. 3 credits.
How justice organizations behave at lowest levels, where service is
delivered and discretion is greatest (suspects, victims, witnesses, police
officers, prison guards, parole officers, attorneys, and others who interact
with the justice system). For MS students. Offered by Criminology, Law
and Society (p. 332). May not be repeated for credit.

CRIM 544: Corrections. 3 credits.
Covers the social institutions and processes involved in punishment,
control, and behavior change. Reviews the consequences of different
policies and organizational approaches. For MS students. Offered by
Criminology, Law and Society (p. 332). May not be repeated for credit.

CRIM 545: Crime Analysis. 3 credits.
History, theory, and techniques of crime analysis and crime mapping.
Includes routine activities, pattern, and rational choice theories. Review
of data types. Application of crime analysis to crime control tactics,
strategies, and administration. Offered by Criminology, Law and Society
(p. 332). May not be repeated for credit.

CRIM 561: Politics of Crime Policy. 3 credits.
Explores political context of crime policy. Examines influence of public
opinion, interest groups, scientific community, and other political forces.
In-depth, case-study comparison of several crime policies. For MS
students. Offered by Criminology, Law and Society (p. 332). May not be
repeated for credit.

CRIM 562: Crime and Place. 3 credits.
Examines the concentration of crime at places, including geographic,
environmental, and sociological features that attract or repel crime.
Discusses theoretical explanations, crime prevention strategies, and
the measurement of crime concentrations. For MS students. Offered by
Criminology, Law and Society (p. 332). May not be repeated for credit.

CRIM 595: Special Topics. 3 credits.
Recent developments in the field or topics not covered by regularly
listed courses. The course content varies. For MS students. Offered by
Criminology, Law and Society (p. 332). May be repeated within the term
for a maximum 9 credits.

700 Level Courses
CRIM 700: Values, Ethics, and Criminal Justice Policy. 3 credits.
Overview of important public values and classical and contemporary
theories for understanding how these values apply to the criminal justice
CRIM 710: Criminological Theory. 3 credits.
Summarizes key principles and development of major criminological theories and evaluates the state of the empirical evidence for each one. Provides a critical assessment of different perspectives and identifies weaknesses and gaps. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Graduate or Non-Degree.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 720: Law and Social Science. 3 credits.
Examines social science approaches to the law and the social processes that affect the behavior of legal actors and institutions. Includes theory and research in the law and society tradition. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. Equivalent to GOVT 728.

Registration Restrictions:
Enrollment limited to students with a class of Graduate or Non-Degree.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Focuses on understanding legal doctrines that form basis of U.S. constitutional procedural rights and how doctrines develop, why courts rule as they do, and evaluating strengths, weaknesses of rights. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. Equivalent to GOVT 713.

Recommended Prerequisite: CRIM 720 or GOVT 728, or permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 723: Law and Social Control. 3 credits.
Competing conceptions of law, political systems, and social control. Intellectual traditions behind social control, its definitions, and mechanisms for regulating public and private behavior, by both individuals and organizations in society. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Recommended Prerequisite: CRIM 720 or GOVT 728, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 730: Courts and Constitutional Law. 3 credits.
Role, influence, and effects of U.S. courts in creating constitutional norms and interpreting them. Special attention to First and Fourteenth Amendments, Commerce Clause. Analyzes leading court cases. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 740: Justice Organizations. 3 credits.
Understanding and evaluating criminal justice policies, practices, and structures in an organizational context. Draws on organizational theory and empirical research to explore the challenges and opportunities to shape criminal justice processes and outcomes. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. Equivalent to PUAD 790.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 741: Street Level Criminal Justice. 3 credits.
How justice organizations behave at lowest levels, where service is delivered and discretion is greatest (suspects, victims, witnesses, police officers, prison guards, parole officers, attorneys, and others who interact with the justice system). Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. Equivalent to PUAD 723.

Recommended Prerequisite: CRIM 740 or PUAD 790, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CRIM 742: Leadership in Justice and Security Organizations.** 3 credits.
Examines leadership theories, and explores fundamental questions about leadership in justice and security organizations today. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

**Recommended Prerequisite:** CRIM 740 or GOVT 790, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CRIM 743: Changing Justice and Security Organizations.** 3 credits.
Examines challenges of changing justice organizations, how changes have been successfully and unsuccessfully implemented in the past, and what change strategies appear to be the most effective. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. Equivalent to PUAD 797.

**Recommended Prerequisite:** CRIM 740 or PUAD790, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CRIM 744: Corrections.** 3 credits.
Covers the social institutions and processes involved in punishment, control, and behavior change. Reviews the consequences of different policies and organizational approaches. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

**Recommended Prerequisite:** CRIM 740.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CRIM 760: Evidence-Based Crime Policy.** 3 credits.
Explores the theoretical and empirical support for crime and justice interventions and policies, and examines the translational link between research and criminal justice practices. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CRIM 761: Politics of Crime Policy.** 3 credits.
Explores political context of crime policy. Examines influence of public opinion, interest groups, scientific community, and other political forces. In-depth, case-study comparison of several crime policies. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

**Recommended Prerequisite:** CRIM 760/GOVT 792 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CRIM 762: Crime and Place.** 3 credits.
Examines the concentration of crime at places, including geographic, environmental, and sociological features that attract or repel crime. Discusses theoretical explanations, crime prevention strategies, and the measurement of crime concentrations. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

**Recommended Prerequisite:** CRIM 760.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**CRIM 764: Sentencing.** 3 credits.
Explores theories of punishment and sentencing practices. Examines political, sociological, criminological, and organizational influences on sentencing processes and decisions. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

**Recommended Prerequisite:** CRIM 760.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

CRIM 780: Research Methods. 3 credits. 
Introduces logic and methods of scientific inquiry in justice, law, and crime policy. Includes conceptualization of research questions, observation, measurement, research design, and principles of causality. Evaluation of extant research according to scientific principles. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. 

Recommended Prerequisite: Undergraduate course in social science research methods or statistics, or permission of instructor.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students. 

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar 
Grading: 
This course is graded on the Graduate Regular scale. (p. 84) 

CRIM 781: Justice Program Evaluation. 3 credits. 
Practical exploration of assessment techniques used in evaluating need for and consequences of justice programs and policies. Design and measurement, interpreting and presenting results. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. Equivalent to PUAD 791. 

Recommended Prerequisite: PUAD 511/612, CRIM 780, or two graduate-level statistics courses; or permission of instructor.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students. 

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar 
Grading: 
This course is graded on the Graduate Regular scale. (p. 84) 

CRIM 782: Statistics I. 3 credits. 
Focuses on descriptive and inferential statistical methods and theory with application to problems within the justice field. Explores the logic of inferential statistical methods in general and null hypothesis significance testing in particular. Covers widely used statistical procedures within the applied social sciences. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. 

Recommended Prerequisite: An undergraduate social science research methods course or an undergraduate statistics course.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students. 

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar 
Grading: 
This course is graded on the Graduate Regular scale. (p. 84) 

CRIM 783: Statistics II. 3 credits. 
Focuses on the theory and application of multivariate regression methods as applied within the justice field. Topics include tests for and consequences of violating assumptions of the generalized linear model, dummy coding of categorical variables, testing of interaction effects, logistic regression, ordered and multinominal logit, and missing data analysis. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. 

Recommended Prerequisite: CRIM 782 or a comparable course. 

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students. 

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar 
Grading: 
This course is graded on the Graduate Regular scale. (p. 84) 

CRIM 784: Experimental Criminology. 3 credits. 
Discusses the methodological, statistical, ethical, and practical concerns associated with experimental research designs in criminology. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. 

Recommended Prerequisite: CRIM 780. 

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students. 

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar 
Grading: 
This course is graded on the Graduate Regular scale. (p. 84) 

CRIM 790: Capstone in Policy and Practice. 3 credits. 
Student-initiated research project supervised by instructor. Students must work with a justice organization to conduct useful research and produce a policy-oriented white paper. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit. 

Recommended Prerequisite: CRIM 780 or permission of instructor. 

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students. 

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study 
Grading: 
This course is graded on the Graduate Regular scale. (p. 84) 

CRIM 795: Special Topics. 3 credits. 
Recent developments in field, or topics not covered by regularly listed courses. Notes: Topics vary. May be repeated when topic is different. Offered by Criminology, Law and Society (p. 332). May be repeated within the term for a maximum 15 credits. 

Recommended Prerequisite: CRIM 780. 

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students. 

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar 
Grading: 
This course is graded on the Graduate Regular scale. (p. 84)
**CRIM 796: Directed Reading.** 1-3 credits.
Independent reading at doctoral level on specific topic related to justice, law, or crime policy as agreed to by student and faculty member and approved by coordinator of CRIM program. Offered by Criminology, Law and Society (p. 332). May be repeated within the term for a maximum 15 credits.

**Recommended Prerequisite:** Successful completion of 12 graduate level CRIM credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Students in a Non-Degree Undergraduate degree may not enroll.**

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**CRIM 797: Professionalization Seminar.** 0 credits.
Introduces doctoral students to research, scholarship and teaching practices in the field to promote their professional development. Notes: Required for Ph.D. students. Offered by Criminology, Law and Society (p. 332). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Students in a Non-Degree Undergraduate degree may not enroll.**

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CRIM 799: Master’s Thesis.** 1-6 credits.
Research on approved master’s thesis topic under direction of thesis committee with approval of chair. Notes: Minimum 3, maximum 6 credits for doctorate. Maximum of credits of CRIM 799 applicable to masters degree requirements. Offered by Criminology, Law and Society (p. 332). May be repeated within the degree.

**Recommended Prerequisite:** Submission and approval of thesis proposal.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Students in a Non-Degree Undergraduate degree may not enroll.**

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**900 Level Courses**

**CRIM 998: Doctoral Dissertation Proposal.** 1-6 credits.
Work on a research proposal forming basis for doctoral dissertation. Notes: Minimum 3, maximum 6 credits for doctorate. Maximum of 27 credits of CRIM 998/CRIM 999 applicable to doctoral degree requirements. Offered by Criminology, Law and Society (p. 332). May be repeated within the degree.

**Recommended Prerequisite:** Students must complete all core analytical course degree requirements.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**CRIM 999: Doctoral Dissertation Research.** 1-21 credits.
Doctoral dissertation research and writing under direction of student’s dissertation committee. Notes: Minimum 12, maximum 21 credits for doctorate. Maximum of 27 credits of CRIM 998/CRIM 999 applicable to doctoral degree requirements. Offered by Criminology, Law and Society (p. 332). May be repeated within the degree for a maximum 21 credits.

**Registration Restrictions:**
Enrollment limited to students within the degree for a maximum 21 credits.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Cultural Studies (CULT)**

**300 Level Courses**

**CULT 320: Globalization and Culture.** 3 credits.
Examines cultures in globalization, with special attention to the role of technologies and new media. Provides historical and contemporary contexts for understanding the relationships among circuits of production and consumption; population flows; social inequalities and collective identities; globalization from "above" and "below," built and natural environments. Offered by Cultural Studies (p. 519). Limited to three attempts.

**Recommended Prerequisite:** GLOA 101 or SOCI 120

**Registration Restrictions:**
Students with a class of Freshman may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CULT 390: Topics in Cultural Studies.** 1-3 credits.
Topics of current interest in interdisciplinary cultural studies, covering such fields as media, popular culture, political economy, social identities, or regions in globalization. Notes: May be repeated for credit when topic is different. Offered by Cultural Studies (p. 519). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:**

**Registration Restrictions:**

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**800 Level Courses**

**CULT 802: Histories of Cultural Studies.** 3 credits.
Historical survey of principal works and theories in the development of cultural studies. Notes: This course is designed for PhD level students. Students in a related MA program may take this course as the capstone to their MA as they are about to matriculate into the PhD in cultural
CULT 810: Culture and Political Economy. 3 credits. 
Surveys social science and humanities classics that relate cultural production and consumption to underlying political economic conditions. Includes Marx, Lukacs, Frankfurt School, semiotic neo-Marxism, productivist theories of power indebted to Foucault, Baudrillard, Bourdieu, Harvey, Jameson, Mauss, Mill, Polanyi, Sahlins, A. Smith, and Weber. Notes: This course is designed for the PhD student. Those students not admitted to a PhD program are required to contact the instructor. Offered by Cultural Studies (p. 519). May not be repeated for credit.

Recommended Prerequisite: Admission to a doctoral program, or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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CULT 812: Visual Culture. 3 credits. 
Examines theories, production, consumption, and reception of visual culture. Covers film, video, visual arts, music, display, ritual, performance, performativity, and theories of the aesthetic. Includes key readings from theorists such as Adorno, Artaud, Benjamin, Brecht, Bryson, Doane, Fiske, Heath, Marcuse, Merleau-Ponty, and Sartre. Notes: This course is designed for the PhD student. Those students not admitted to a PhD program are required to contact the instructor. Offered by Cultural Studies (p. 519). May not be repeated for credit.

Recommended Prerequisite: Admission to a doctoral program or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

CULT 816: Science/Technology. 3 credits.
Considers theories and major debates on culture of science, social construction of nature, and effects of technology on modern cultural forms. Includes readings from theorists such as Nietzsche, Heidegger, Horkheimer, Feyerabend, Bahro, Haraway, and Latour. Notes: This course is designed for the PhD student. Those students not admitted to a PhD program are required to contact the instructor. Offered by Cultural Studies (p. 519). May not be repeated for credit.

Recommended Prerequisite: Admission to a doctoral program or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CULT 818: Social Institutions. 3 credits.
Considers theories of institutional practice and social structures, from Max Weber to Michel Foucault. Covers prisons, bureaucracies, museums, schools, political parties, and social movements. Notes: This course is designed for the PhD student. Those students not admitted to a PhD program are required to contact the instructor. Offered by Cultural Studies (p. 519). May not be repeated for credit.

Recommended Prerequisite: Admission to a doctoral program, or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CULT 820: After Colonialism. 3 credits.
Surveys racial, ethnic, caste, and national identities in colonial contexts; scientific racism in periphery and core sites; subsequent history of race, ethnic, national identities and conflicts; classical and contemporary texts by authors such as DuBois, Fanon, Gilroy, and Spivak; and particular place of issues of national, racial, and ethnic identities in contemporary cultural studies. Notes: This course is designed for the PhD student. Those students not admitted to a PhD program are required to contact the instructor. Offered by Cultural Studies (p. 519). May not be repeated for credit.

Recommended Prerequisite: Admission to a doctoral program, or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CULT 860: Special Topics in Cultural Studies. 3 credits.
Specialized interdisciplinary topics in cultural theory and analysis. Notes: These courses are designed for the PhD student. Those students not admitted to a PhD program are required to contact the instructor. Topics vary. May be repeated for credit when topic is different. Offered by Cultural Studies (p. 519). May be repeated within the term.

Recommended Prerequisite: Admission to a doctoral program, or permission of the instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CULT 870: Independent Study. 1-3 credits.
Reading and research on a specific topic guided by advisors, supporting the development of a Field Concentration. Offered by Cultural Studies (p. 519). May be repeated within the term for a maximum 15 credits.

Recommended Prerequisite: Admission to a PhD program, successful completion of all core courses, or permission of director.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies.

Enrollment is limited to Graduate level students.

Schedule Type: Research

Grading:
This course is graded on the Graduate Special scale. (p. 84)

CULT 880: Field Concentration. 3 credits.
Intensive research course, resulting in a Field Statement and oral defense. Notes: Requires permission of field advisor. Offered by Cultural Studies (p. 519). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Admission to cultural studies doctoral program, successful completion of core courses, and an additional 18 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies.

Enrollment is limited to Graduate level students.

Schedule Type: Research

Grading:
This course is graded on the Graduate Special scale. (p. 84)

900 Level Courses

CULT 998: Doctoral Dissertation Proposal. 1-6 credits.
Develop research proposal that forms basis for doctoral dissertation. Notes: A maximum of 6 credits may be applied to the degree. Subject to continuous registration requirement. Offered by Cultural Studies (p. 519). May be repeated within the degree for a maximum 24 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to students with a major in Cultural Studies.

Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

CULT 999: Doctoral Dissertation. 1-12 credits.
Doctoral dissertation research and writing under direction of dissertation committee. Offered by Cultural Studies (p. 519). May be repeated within the degree.

Recommended Prerequisite: CULT 998.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.
Enrollment is limited to students with a major in Cultural Studies.
Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Curriculum and Instruction (EDCI)

300 Level Courses

EDCI 370: Young Adult Literature in Multicultural Settings. 3 credits.
Examines literary works written for and about young adults, introduces critical issues surrounding teaching of young adult literature in multiculturally diverse schools, and requires reading and review of young adult literature. Notes: Significant online work is required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDCI 372: Teaching Mathematics in the Secondary School. 3 credits.
Covers curricula, current issues, and research literature in secondary school mathematics. Emphasis is on developing different styles of teaching. Field experience is required for those seeking initial teacher licensure. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Corequisite: EDUC 422

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - Mathematics 6-12.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDCI 423: Methods for Teaching PK-6 English Learners in Inclusive Classrooms. 3 credits.
Examines current research, theory, and policy as applied to teaching and learning with K-6 English learners (ELs). Explores research-based methods, instructional frameworks, and culturally and linguistically responsive strategies for teaching ELs effectively in K-6 inclusive classrooms. This course requires 15 hours of field observation. Offered by Graduate School of Education (p. 162). Limited to two attempts.

Recommended Prerequisite: Admission to Elementary Education licensure program; ELED course sequence as approved by advisor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

EDCI 469: Teaching English in Secondary School. 3 credits.
Provides study of advanced methods, materials, content, and organization of English programs in secondary school. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDUC 422. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - English 6-12.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Focuses on learning processes for mathematics. Introduces national and state standards regarding content and methodologies for teaching mathematics. Examines instructional methods and materials in relation to secondary mathematical content, curriculum, and assessment. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDCI 372, EDUC 422.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - Mathematics 6-12.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDCI 473: Teaching Science in the Secondary School. 3 credits.
Builds fundamental knowledge of science teaching and learning including standards-based curriculum design and research-based teaching strategies. Notes: School-based field experience required for those seeking initial teacher licensure. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: Admission to the Secondary Education Program.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - Biology 6-12, Secondary Ed - Chemistry 6-12, Secondary Ed - Physics 6-12 or Secnd Ed - Earth Science 6-12.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EDCI 479: Advanced Methods of Teaching English in the Secondary School.** 3 credits.
Guides students in working effectively with national and local standards for teaching secondary English. Continuation course in methods from EDCI 469. Offered by Graduate School of Education (p. 162). Limited to three attempts. Equivalent to EDCI 669.

**Recommended Prerequisite:** EDCI 469.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - English 6-12.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EDCI 483: Advanced Methods of Teaching Science in Secondary School.** 3 credits.
Provides advanced study of teaching and curriculum development based on research and current issues. Emphasizes integrating science and technology, adapting instruction to needs of diverse learners, and promoting safety. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Recommended Prerequisite:** EDCI 473.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - Biology 6-12, Secondary Ed - Chemistry 6-12, Secondary Ed - Physics 6-12 or Secnd Ed - Earth Science 6-12.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EDCI 490: Student Teaching in Education.** 6 credits.
Provides intensive, supervised clinical experience in approved school for fall or spring semester. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Recommended Prerequisite:** Completion of licensure and all endorsement course work.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - Biology 6-12, Secondary Ed - Chemistry 6-12, Secondary Ed - Mathemati 6-12, Secondary Ed - English 6-12, Secondary Ed - Physics 6-12 or Secnd Ed - Earth Science 6-12.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**EDCI 491: Internship Seminar in Secondary Training.** 2 credits.
Focuses on critical reflection regarding effects of teacher actions others; develops skills as reflective practitioner; presents research-based rationales for instructional decision-making. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Recommended Prerequisite:** Admission to the professional semester.

**Recommended Corequisite:** EDCI 490.

**500 Level Courses**

**EDCI 510: Linguistics for PreK-12 ESOL Teachers.** 3 credits.
Examines language as a system, with particular focus on teaching culturally and linguistically diverse students in grades PreK-12. Considers teaching implications of phonology, morphology, syntax, semantics, and pragmatics. Requires 20 hours of PK-12 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in English as a Second Language or Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 516: Bilingualism and Language Acquisition Research.** 3 credits.
Examines first and second language acquisition theories past and present. Explores how PK-12 bilingual and multilingual learners' cultures and languages are valuable assets in classrooms and addresses implications for instruction and assessment. Develops understanding of research around instructional environments that promote bilingualism and biliteracy. Requires 20 hours of PK-12 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Study

Grading:
This is course is graded on the Graduate Special scale. (p. 84)

EDCI 519: Methods of Teaching Culturally and Linguistically Diverse Learners. 3 credits.
Examines approaches, methods, and techniques for teaching culturally and linguistically diverse learners in bilingual and ESL classrooms, as well as resources available in the field. Critically analyzes and demonstrates teaching approaches based on second language acquisition research, including teaching language through content. Requires 20 hours of PK-12 classroom fieldwork in public schools. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDCI 510B and 516B.
*May be taken concurrently.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lectures

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDCI 520: Assessment of Language Learners. 3 credits.
Examines innovative approaches to assessing language learners. Topics include identification, placement, monitoring of student progress, development of authentic performance-based measures, design of portfolios, application of measurement concepts, analysis of assessment instruments, and linking assessments to instruction. Requires 20 hours of PK-12 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDCI 519B or 560B.
*May be taken concurrently.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDCI 544: Curriculum and Methods of Teaching in Elementary Education. 3 credits.
Introduction to general methods of teaching in elementary schools focusing on planning, teaching strategies, management, assessment, and differentiation. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the Elementary Education graduate program, must be taken in programmatic sequence.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 545: Assessment and Differentiation. 3 credits.
Provides a research-based introduction to differentiated instruction for children in grades PK-6. Emphasis on the assessment of learners and differentiation of instruction to meet the needs of all learners. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission into the Elementary Education graduate program, must be taken in programmatic sequence.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 546: Integrating Technology in Elementary Classrooms: Literacy. 1 credit.
Studies the development and integration of technology in the elementary education literacy curriculum. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission into Elementary Education graduate

Recommended Corequisite: program. EDCI 556.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
**EDCI 547: Integrating Technology in Elementary Classrooms: Mathematics.** 1 credit.
Studies the development and integration of technology in the elementary education mathematics curriculum. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission into Elementary Education graduate

**Recommended Corequisite:** program. EDCI 552.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 552: Mathematics Methods for the Elementary Classroom.** 1-3 credits.
Introduces methods for teaching all children topics in arithmetic, geometry, algebra, probability, and statistics in elementary grades. Focuses on using manipulatives and technologies to explore mathematics and solve problems. Notes: Requires field experience in public schools. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Admission to the Elementary Education licensure program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 554: Methods of Teaching Social Studies and Integrating Fine Arts in the Elementary Classroom.** 3 credits.
Focuses on the design and delivery of standards-based integrated curriculum centered on the social sciences. Includes integration of fine arts and examines the central role of the arts in learning. Notes: School-based field experience required. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Admission into Elementary Education licensure program; must be taken in programmatic sequence.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDCI 555: Literacy Teaching and Learning in Diverse Elementary Classrooms I.** 3 credits.
Provides research-based introduction to literacy teaching and learning for younger children. Emphasizes language development; reading and writing processes; emergent literacy; culture, families, and literacy; and literacy integration in the curriculum. Notes: School-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Elementary Education licensure program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 556: Literacy Teaching and Learning in Diverse Elementary Classrooms II.** 1-3 credits.
Provides research-based introduction to literacy teaching and learning for older children. Emphasizes literacy and language processes and development; connections among cultures, families, and literacy; and literacy integration in curriculum. Notes: School-based field experience required. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Admission to the Elementary Education Licensure program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to students with a major in Curriculum and Instruction.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDCI 557: Integrating Technology in PreK-6.** 3 credits.
Studies the development and integration of technology in the elementary education curriculum including the use of technology to address the learning needs of diverse students. Notes: School-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Elementary Education licensure program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to students with a major in Curriculum and Instruction.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 560: Methods of Teaching in Foreign/World Languages.** 3 credits.
Covers approaches, theories, and methods of teaching foreign and second languages, with practical application to classroom. Students demonstrate teaching strategies, develop lesson and unit-planning skills, and evaluate curricula and materials. Notes: Requires field experience in schools. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission into Elementary Education graduate program; capstone course for degree must be taken last in programmatic sequence.

**Registration Restrictions:**
Required Prerequisites: EDCI 516B or SPAN 502B.
* May be taken concurrently.
B- Requires minimum grade of B-.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 567: Teaching Social Studies in the Secondary School.** 3 credits.
Provides teacher candidates an introduction to methods, frameworks, and practices of teaching social studies in secondary schools. Notes: Requires 15 hours of school-based field experience. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDUC 522. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduation Deadline Extended, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 569: Teaching English in the Secondary School. 3 credits.
Provides study of advanced methods, materials, content, and organization of English programs in secondary school. Notes: 15 hours school-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 522. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 570: Teaching Young Adult Literacy in a Multicultural Setting. 3 credits.
Examines literary works written for and about young adults. Introduces critical issues surrounding teaching young adult literature in multiculturally diverse public schools and requires reading and reviewing young adult literature from several genres. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 572: Teaching Mathematics in the Secondary School. 3 credits.
Emphasizes developing different styles of teaching. Notes: 15 hours school-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 522. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

EDCI 573: Teaching Science in the Secondary School. 3 credits.
Provides study of methods, materials, content, and organization of science programs. Emphasizes curriculum planning, current methodologies, safety, and trends in secondary schools. Notes: 15 hours school-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Specialized Designation: Green Leaf Related Course
Recommended Prerequisite: EDI 522. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 597: Special Topics in Education. 1-6 credits.
Provides advanced study on selected topic or emerging issue in American or international education. Notes: May be repeated for credit with GSE permission. Offered by Graduate School of Education (p. 162). May be repeated within the degree.

Recommended Prerequisite: Admission to program in GSE.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in ASTL-Alternative Education, ASTL-Early Childhood Educ, Gifted Child Education, ASTL - History, ASTL-Instructional Technology, ASTL - Literacy/Reading, ASTL - Mathematics, ASTL-NBPTS Preparation Core, ASTL - Science or Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Special scale. (p. 84)

600 Level Courses

EDCI 600: Workshop in Education. 1-6 credits.
Offers full-time workshops and weekend seminars on selected topics in education and education tour seminars. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 617: Using Digital and Popular-Culture Media with Grades 4-12.** 3 credits.
Exposes students to recent knowledge on how middle and high school teachers can use digital media and popular culture texts to engage students in subject area learning or literacy development. Focus is on grades 4-12. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to a GSE licensure, Master’s, or doctoral program and at least one year of PK-12 teaching experience, completion of EDCI 569, EDCI 567, EDCI 572, EDCI 573, or EDCI 544, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 621: Introduction to Gifted and Talented Learners.** 3 credits.
Examines nature and needs of gifted and talented learners. Participants become knowledgeable about characteristics of gifted and talented students, and examine role of culture in manifestation of gifts and talents as well as gifted behaviors in special populations. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.


Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 622: Curriculum Differentiation for Diverse Learners.** 3 credits.
Develops personal and professional rationale for differentiating instruction in mixed-ability classrooms, as well as skills and knowledge of strategies to utilize pre-assessment data and plan for and implement differentiated instruction. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in ASTL-Alternative Education, ASTL-Early Childhood Educ, Gifted Child Education, ASTL - History, ASTL-Instructional Technology, ASTL - Literacy/Reading, ASTL - Mathematics, ASTL-NBPTS Preparation Core, ASTL - Science or Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 623: Models and Strategies for Teaching Gifted Learners.** 3 credits.
Provides framework to examine and apply curriculum models and instructional strategies advocated for use with gifted students according to national and state standards that reflect best practices in gifted education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 624: Assessment, Identification, and Evaluation of Gifted Learners.** 3 credits.
Examines broad understandings of intelligence and assessment. Provides techniques to identify gifted students. Develops specific understandings of assessment techniques and awareness of the influences of language, culture, ethnicity, gender, and exceptionality on recognition and subsequent identification of giftedness. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in ASTL-Alternative Education, ASTL-Early Childhood Educ, Gifted Child Education, ASTL - History, ASTL-Instructional Technology, ASTL - Literacy/Reading, ASTL - Mathematics, ASTL-NBPTS Preparation Core, ASTL - Science or Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 625: Contemporary Issues and Trends in Gifted Education. 3 credits.
Focuses on research, trends, issues, legislation, and litigation concerning gifted and talented children. Provides professionals in gifted education and related fields with knowledge and skills to serve as advocates for gifted-child education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDCI 621, 622, 623, and 624.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.


Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDCI 630: Supporting English Learners in PK-12 Schools. 3 credits.
Provides new knowledge for classroom teachers who wish to know more about second language acquisition and how to effectively serve English Learners in their classrooms and schools. Examines research in first and second language acquisition, bilingualism, and includes teachers’ application of new knowledge for culturally responsive curriculum development and student assessment. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite:

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 644: Mathematics Learning and Assessment (K-8). 3 credits.
Introduces students to learning theories and associated assessment practices specific to mathematics education. Intended for mathematics specialists and teachers interested in problems of learning and assessment across K-8 settings in mathematics education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the MEd in Education Leadership, Mathematics Education Leadership concentration

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Curriculum and Instruction or Education Leadership.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 645:** *Curriculum Development in Mathematics Education.* 3 credits. Analysis, design, and evaluation of school mathematics curricula. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Mathematics Education Leadership Masters Degree Program or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Curriculum and Instruction or Education Leadership.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 646:** *Mathematics Education Leadership for School Change.* 3 credits. Surveys current literature and large-scale studies in mathematics education. Engages students in research, study, and discussion of factors that affect teaching and learning of mathematics in school settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Mathematics Education Leadership Masters Degree Program or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 660:** *Integrated STEM Teaching.* 3 credits. Provides an interdisciplinary approach to integrating science, technology, engineering, and mathematics (STEM) into teaching practice across all disciplines. Explores aspects of STEM education through literature, recent national reports, discussion, and practice. Involves participation in problem-based and project-based learning activities, inquiry learning, while using technology to gain and display information. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDCI 663:** *Research in Science Teaching.* 3 credits. Investigates the research and methodology involved in teaching and learning biological, chemical, physical, and earth sciences from K-12. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Course in teaching science in elementary or secondary school, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in ASTL-Alternative Education, ASTL-Early Childhood Edu, Gifted Child Education, ASTL-History, ASTL-Instructional Technology, ASTL-Literacy/Reading, ASTL-Mathematics, ASTL-NBPTS Preparation Core, ASTL-Science, Curriculum and Instruction or Education Leadership.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDCI 666:** *Research in Mathematics Teaching.* 3 credits. Explores curricula, current issues, and research literature in elementary school mathematics. Emphasizes development of different styles of teaching. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
EDCI 667: Advanced Methods of Teaching Social Sciences in the Secondary School. 3 credits.
Emphasizes interdisciplinary curriculum and instruction, implementing national state standards, authentic assessment, and adaptations for diverse populations. Notes: School-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDCI 567 and EDUC 522.

Recommended Corequisite: EDRD 619.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 669: Advanced Methods of Teaching English in the Secondary School. 3 credits.
Continuation course in methods (See EDCI 569). Guides students in working effectively with national and local standards for teaching secondary English. School-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit. Equivalent to EDCI 479.

Recommended Prerequisite: EDCI 569 and EDUC 522.

Recommended Corequisite: EDRD 619.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 670: Advanced Methods in Science Teaching. 3 credits.
Application of major principles of education and psychology for the improvements of science teaching in secondary schools. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 671: Innovations in Science Teaching. 3 credits.
Focuses on the development and selection of teaching materials that reflect concepts of technology innovation with an emphasis on middle and secondary school science. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 672: Advanced Methods of Teaching Mathematics in the Secondary School. 3 credits.
Focuses on learning processes for mathematics. Introduces national and state standards regarding content and methodologies for teaching mathematics. Examines instructional methods and materials in relation to secondary mathematical content, curriculum, and assessment. School-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDCI 572, EDUC 522.

Recommended Corequisite: EDRD 619.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDCI 673: Advanced Methods of Teaching Science in the Secondary School. 3 credits.
Provides advanced study of teaching and curriculum development based on research and current issues. Emphasizes integrating science and technology, and adapting instruction to the needs of diverse learners. School-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDCI 573 and EDUC 522.

Recommended Corequisite: EDRD 619.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 684: Advanced Methods of Teaching Foreign/Second Languages in PK-12 Schools.** 3 credits.
Blends theoretical knowledge and practical application. Provides advanced study of second language pedagogy and teaching trends. Topics include multiple learning styles, alternative forms and assessment, and teaching diverse populations. Notes: Requires school-based field experience. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**

**Required Prerequisites:**

- EDCI 520* B- and 560 B-

*May be taken concurrently.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**EDCI 702: Internship in Mathematics Education.** 3 credits.
Offers practical experiences and professional challenges for mathematics leaders in authentic educational settings. Activities emphasize school-based and classroom based research and leadership. Develops the skills and abilities of the mathematics leaders to analyze classroom practice, investigate teaching and disseminate information about mathematics education in professional development settings for teachers. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a major in Curriculum and Instruction or Education Leadership.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 776: Consultation and Collaboration in Diverse K-12 Settings.** 3 credits.
Focuses on ways in which practicing education professionals collaborate in serving diverse learners and their families. Explores methods for co-planning and co-teaching in the general education classroom and ways for sharing responsibilities for instruction and assessment. Includes ways for dealing with difficult interactions are part of understanding how to implement collaborative and inclusive models of education for diverse learners. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Corequisite:** Completion of all other program requirements EDCI 777

**Registration Restrictions:**

**Required Prerequisites:** EDCI 792, 793 or 794.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:** This course is graded on the Graduate Special scale. (p. 84)

**EDCI 777: Research to Practice.** 3 credits.
Provides culminating experience that synthesizes and applies essential elements of teaching culturally & linguistically diverse and exceptional learners in international contexts. Emphasizes teacher as change agent through critical inquiry into practice. Promotes collaboration among teachers and school professionals to advance achievement of diverse learners. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Completion of all other program requirements

**Recommended Corequisite:** EDCI 776

**Registration Restrictions:**

**Required Prerequisites:** EDCI 792, 793 or 794.

**EDCI 790: Internship in Education.** 1-6 credits.
Intensive, supervised clinical experience for full semester in accredited school. Students must register for appropriate section. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** EDU 522, EDU 672, two methods classes in content area; passing Praxis II and VCLA, completing all endorsements.

**Recommended Corequisite:** EDCI 791

**Registration Restrictions:**

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
**EDCI 791:** *Internship Seminar in Secondary Teaching.* 2 credits.
Focuses on critical reflection regarding effects of teacher actions on others; develops skills as a reflective practitioner; presents research-based rationales for instructional decision-making. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the professional semester.

**Recommended Corequisite:** EDCI 790.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDCI 792:** *Internship in Education: PK-6 International Elementary Education.* 6 credits.
Provides intensive, supervised clinical experience for a full semester in an accredited school. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Completion of all licensure tests and endorsement requirements.

**Registration Restrictions:**
Required Prerequisites: EDRD 515B, EDUC 511B, 512B, 513B, 514B, 516B and 520B.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 793:** *Internship in Education: PK-12 Foreign/World Language Education.* 6 credits.
Provides intensive, supervised clinical experience for a full semester in an accredited school. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Completion of all licensure tests and endorsement requirements.

**Registration Restrictions:**
Required Prerequisites: EDCI 516B, 520B, 560B, 684B, EDRD 620B, EDUC 511B and 537B.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDCI 794:** *Internship in Education: PK-12 Foreign/World Language Education.* 6 credits.
Provides intensive, supervised clinical experience for a full semester in an accredited school. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Completion of all licensure tests and endorsement requirements.

**Registration Restrictions:**
Required Prerequisites: EDCI 516B, 520B, 560B, 684B, EDRD 620B, EDUC 511B and 537B.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDCI 810:** *Foundations of Science Education Research.* 3 credits.
Explores and analyzes the range of research designs currently utilized by science education researchers. Develops an understanding of the assumptions and frameworks of different types of science education inquiry through an examination of ways of knowing. Examines historical trends that have taken place in science education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor.

**Recommended Corequisite:** EDUC 800.

**Registration Restrictions:**
Enrollment is limited to students with a concentration in Science Education Research.

Enrollment limited to students in the E1-PHD-EDUC program.

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### 800 Level Courses

**EDCI 810:** *Foundations of Science Education Research.* 3 credits.
Explores and analyzes the range of research designs currently utilized by science education researchers. Develops an understanding of the assumptions and frameworks of different types of science education inquiry through an examination of ways of knowing. Examines historical trends that have taken place in science education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor.

**Recommended Corequisite:** EDUC 800.

**Registration Restrictions:**
Enrollment is limited to students with a concentration in Science Education Research.

Enrollment limited to students in the E1-PHD-EDUC program.
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 811:** *Current Trends in Science Education Research*. 3 credits.
Provides an in-depth examination and analysis of literature and research in science education. Examines theoretical foundations of research studies in science education, discusses methodologies of research, critique research, and examines trends in emerging science education research. Includes presentations by science education researchers as well as opportunities for graduate students to explore research ideas with colleagues within the class. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDCI 810.

**Registration Restrictions:**
Enrollment limited to students in the E1-PHD-EDUC program.
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 813:** *Focused Science Education Research*. 3 credits.
Provides an opportunity for students to gain hands-on experience designing and conducting a research study in science education that leads to publication and/or conference presentations. The scholarship embodied in student development to this point in the doctoral program will lead students to work with a science education faculty member of their choice to development and seek to answer a research question of interest. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRS 810, EDRS 811, EDRS 827.

**Registration Restrictions:**
Students cannot enroll who have a concentration in Science Education Research.

Enrollment limited to students in the E1-PHD-EDUC program.

Enrollment is limited to Graduate level students.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDCI 855:** *Mathematics Education Research on Teaching and Learning*. 3 credits.
Surveys most current research literature in mathematics education. Engages students in research, study, and discussion of mathematics education research on teaching and learning in school settings. Builds on students' educational and professional experiences to ensure students are well versed in research that has influenced mathematics education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Mathematics Education Leadership Ph.D. program.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDCI 856:** *Mathematics Education Curriculum Design and Evaluation*. 3 credits.
Engages students in research, analysis, design, and evaluation of school mathematics curricula from various methodologies and theoretical approaches. Examines how mathematics education and mathematics curricula is culturally, historically, and politically situated. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Mathematics Education Leadership PhD program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDCI 858:** *Mathematics Education Research Design and Evaluation*. 3 credits.
Examines methods of research appropriate for mathematics education. Develops knowledge of the scope and evolution of research methodologies from a range of perspectives. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Mathematics Education Leadership Ph.D. program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)
EDCI 859: Current Issues in Mathematics and STEM Education Research. 3 credits.
This introduces contemporary topics in mathematics education research. Students learn about current issues in research design and topics of interest in mathematics teaching, learning, policy and practice. They apply this knowledge to develop pilot studies. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Cyber Security Engineering (CYSE)

100 Level Courses

CYSE 101: Introduction to Cyber Security Engineering. 3 credits.
Provides comprehensive introduction to the principles, applications, and practice of cyber security engineering. Students learn the basic concepts and terminology of cyber security and how cyber security is commonly addressed after the design and implementation phases. Students are introduced to the systems engineering and design processes and learn to integrate and apply cyber security tools and techniques in these processes. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

CYSE 205: Systems Engineering Principles. 3 credits.
Introduction to systems engineering with a focus on cyber security engineering. Emphasize development of analytical, technical, management, and teamwork skills through exercises in planning, documentation, presentation, and the creative process of IT engineering design. Analyze case studies involving systems engineering role in cyber security. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 211: Operating Systems and Lab. 3 credits.
Addresses basic issues such as virtual memory, kernel and user mode, system calls, threads, context switches, interrupts, interprocess communication, coordination of concurrent activities. May also address: concurrency, processes and multi-threading, context switching, synchronization, scheduling, and deadlock. Memory management, dynamic memory allocation, address translation. Management of file systems, storage devices, directories, protection, scheduling and crash recovery. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 220: Systems Modeling. 3 credits.
Introduces modeling of dynamical systems. Formulation of mathematical models from system descriptions, including computer, economic, transportation, electrical power and mechanical systems. Analytical and numerical methods for solving models and studying their behavior. Discrete-time and continuous time systems. Linear and nonlinear systems. Introduction to computer modeling using MATLAB. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MATH 203C and PHYS 160C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 230: Computer Networking. 3 credits.
Introduces network concepts; OSI reference model and layering; data coding; analog/digital communications review; physical layer and data link control; Data Link Layer Control protocols; flow control; error control; link management; common link protocols. LAN and WAN; connection-oriented and connectionless packet switching; circuit-switched networks and control signaling; congestion control and traffic management; transport layer client-server model; domain name systems, routing methods. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CS 112C, CYSE 101C and MATH 113C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

CYSE 301: Digital Systems. 3 credits.
Introduces digital circuits, systems and computers. Topics include binary systems and codes, digital logic gates and circuits, microelectronics and integrated circuits, coding and multiplexing, multi-vibrators, shift registers, counters, analog-to-digital converters, and elementary computer architecture. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts. Equivalent to ECE 301.
Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 325: Discrete Events Systems Modeling. 3 credits.
Introduces basic modeling of the dynamics of discrete event systems. Both analytical and simulation techniques for the modeling and analysis of such systems are considered. Relevant concepts from discrete mathematics are included and appropriate software tools are used to examine different engineering applications. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: STAT 344C.
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 330: Introduction to Network Security. 3 credits.
Introduces cryptography and its applications in networks. Reviews basic firewalls architectures and VPNs. Overview of current network security protocols, security of routing protocols, the DNS, and e-mail security. Discuss threat of attacks that use viruses, worms, rootkits, botnets and countermeasures; distributed denial of service attacks and spam countermeasures. Introduces basic concepts of security of wireless networks. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CYSE 101C, CS 222C and CYSE 230C.
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

CYSE 411: Secure Software Engineering. 3 credits.
This course provides a foundation for building secure software by applying security principles to the software development lifecycle. Topics covered include: security in requirements engineering, secure designs, risk analysis, threat modeling, deploying cryptographic algorithms, defensive coding, penetration testing, fuzzing, static analysis, and security assessment. Students will learn the practical skills for developing and testing secure software. Notes: This course may be of interest to students specializing in software aspects of cyber security engineering. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: CYSE 330C.
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
CYSE 425: Secure RF Communications. 3 credits. Reviews current systems of Radio Frequency (RF) communications and related cyber security issues. This course focuses on security issues in wireless networks, such as cellular networks, wireless LANs, Bluetooth, NFC, RFID, mobile security, anti-jamming communication, and physical layer security. The course will first present an overview of wireless networks, then focus on attacks and discuss proposed solutions and their limitations. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CS 222 C or 262 C) and (ECE 465 C, CYSE 230 C or CS 455 C).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering, Computer Science, Cyber Security Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 430: Critical Infrastructure Protection. 3 credits. Consists of a four week lecture course followed by ten weekly seminars presented by students. The lecture part provides a description of US Designated Critical Infrastructure Sectors and a corresponding list of federal sector specific agencies (SSAs). Each student selects a sector, develops and presents a seminar talk on critical cyber security issues involved in a given sector. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 445: System Security and Resilience. 3 credits. Focuses on modeling and evaluation of the engineering systems that are expected to operate in a contested cyber environment. Covers architectures and modeling, uses a variety of techniques, establishing measures of performance that are relevant to the domain of operation, evaluating the security or vulnerability of the system to cyber exploits, and then assessing its resilience. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Recommended Corequisite: CYSE 450.

Registration Restrictions:
Required Prerequisites: CYSE 325 C or 330 C.
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 450: Cyber Vulnerability Lab. 1 credit. Lab for CYSE 445. Provides hands-on experience in security issues of network systems. Issues in ethical hacking, penetration testing, forensics and incident handling and response will be discussed. Notes: This is a hands-on lab course, with short lecture introductions. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 451: Power Grid Security. 3 credits. Overview of integrating smart grid into the current system. Includes the seven domains (bulk generation, transmission, distribution, customer, operations, markets, and service providers) as well as the electrical and communication interfaces that connect the layers and domains. Focuses on monitoring equipment in the smart grid. Provides an overview of security principles and approaches for applying them to the smart grid. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: CYSE 466 C.
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
CYSE 462: Mobile Devices and Network Security. 3 credits.
Embedded security features of hand-held wireless devices. Data link
layer encryption and authentication protocols applied in mobile devices.
Security factors in the decisions on configuring wireless mobile devices
and network infrastructure. Robust cryptography that is needed to attain
the highest levels of integrity, authentication, and confidentiality. Offered
by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in
Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 465: Transportation Systems Design. 3 credits.
 Discusses common elements and differences among problems that
occur securing road, rail, air and sea transportation systems. Covers
threats to control systems. Introduces control measures. Discusses past,
present and future of in-vehicle and on-road safety systems, and cyber
threats to emerging autonomous cars. Analyzes cyber threats to aviation
and sea transportation security and available countermeasures. Offered
by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in
Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 467: GPS Security. 3 credits.
Provides background in long-range navigation developments; early
global systems; space based systems; GPS and GLONASS systems;
system architecture; spacecraft and earth station characteristics; design
concepts of the CA and P GPS signal modes; frequencies, modulation,
and other design aspects; clock issues; range and accuracy calculations
and limitations; advanced concepts. Explains advanced concepts in
global navigation satellite systems. Offered by Volgenau School of
Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: CYSE 425 C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 470: Human Factors and Cyber Security Engineering. 3 credits.
This course explores the human factor in cyber security engineering.
The focus is on understanding human performance characteristics and
limitations, and the various research, design, and evaluation methods
needed to address them when engineering secure systems. Topics
include, for example, perception, cognition, memory, situation awareness,
decision making, stress, automation, and human-computer display and
interaction design principles. Offered by Volgenau School of Engineering
(p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CYSE 205 C and STAT 344 C.
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in
Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 475: Cyber Physical Systems. 3 credits.
Introduces cyber physical systems as an integration of physical
processes, computation, and networking. Discusses modeling
and simulation of cyber physical systems, system design and
implementation. Analyze such systems based on abstractions for
modeling physical systems and abstractions for modeling data
transformations. Covers security issues in cyber physical systems and
applications selected from infrastructure, energy, transportation, robotics,
manufacturing, and communications domains. Offered by Volgenau
School of Engineering (p. 1011). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CYSE 330 C, 421 C and 450 C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 476: Cryptography Fundamentals. 3 credits.
Covers basic concepts of cryptology, types of cryptosystems, security
services, and key management. Gradually introduces mathematical
background required for understanding cryptography. Discusses modern
secret-key stream and block ciphers, modes of operation, public key
cryptosystems (RSA, elliptic curve, and post-quantum cryptography),
hash functions, message authentication codes, and digital signature
schemes. Covers key cracking machines, side-channel attacks, and
fault attacks. Discusses popular cryptographic modules, such as True
Random Number Generators and Physical Unclonable Functions, used
for key generation and device authentication. Introduces educational and
public domain software implementing modern cryptographic algorithms.
Offered by Volgenau School of Engineering (p. 1011). Limited to two
attempts.

Registration Restrictions:
Required Prerequisites: CYSE 330 C, ECE 465 C or CS 455 C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering,
Computer Science, Cyber Security Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CYSE 477: Intrusion Detection. 3 credits.**
The objective of this course is to provide an in depth introduction to the science and art of intrusion detection. The course covers methodologies, techniques, and tools for monitoring events in computer systems or networks, with the objective of preventing and detecting unwanted process activity and recovering from malicious behavior. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CYSE 478: Cyber Security Audit and Compliance. 3 credits.**
Fundamental concepts of the Cyber Security Compliance and Testing process. This will revolve around defining a control framework, the attendant control objectives and the reporting system for an organization. Covers the process of creating a control structure with goals and objectives, audit a given cyber infrastructure against it, and if found inadequate, establish a systematic remediation procedure. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisite: CYSE 421C.

C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CYSE 479: Methods of User Authentication. 3 credits.**
Discusses limitations of passwords and PINs and introduces alternatives. Covers user authentication based on security tokens and smart cards. Introduces basics of biometric systems, based on information such as fingerprints, facial features, iris, and voice. Discusses the use and security of electronic ID cards and passports. Covers methods of distinguishing human from internet bots over the network, such as CAPTCHA’s. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: CYSE 211C, 301C and 330C.

C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CYSE 480: Malicious Software and Hardware. 3 credits.**
Introduces various types of malicious software (malware). Discusses malware analysis using virtual machines, sandboxes, process monitors, packet sniffers, de-obfuscation, etc. Introduces hardware Trojans and other forms of malicious hardware. Discusses prevention techniques at the design, fabrication, and post-fabrication level. Introduces various countermeasures against malicious software and hardware. The course has a lab with Windows and Android operating systems. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: CYSE 211C and 301C.

C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CYSE 491: Engineering Senior Seminar. 2 credits.**
This course covers a variety of responsibilities of cyber security engineers including: engineering ethics, government policies, laws and regulations affecting cyber security engineering, industry practices, entrepreneurship. Effective technical communications. Incorporates global implications of cyber security engineering. Speakers include faculty, invited guests from industry and government, as well as students. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Corequisite:** CYSE 492.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CYSE 492: Senior Advanced Design Project I. 2 credits.**
First semester of a two semester capstone course in the Cyber Security Engineering program. Development of a design project by a team of students. Conception of the project and determination of its feasibility. Work includes developing preliminary design and implementation plan. Projects will aim at the integration of the technical material learned in several courses and incorporation of industry input. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

**Recommended Corequisite:** CYSE 491.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Cyber Security Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Gradning:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**CYSE 493: Senior Advanced Design Project II. 3 credits.**
Second semester of a two semester capstone course in the Cyber Security Engineering program. Project includes designing a cyber-
physical security system, writing required software, assembling hardware if needed, conducting experiments or studies, and testing the complete system. Requires oral and written reports during project and at completion. Offered by Volgenau School of Engineering (p. 1011). Limited to two attempts.

Mason Core: Capstone (p. 142)

Registration Restrictions:
Required Prerequisite: CYSE 492C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

CYSE 499: Special Topics in Cyber Security Engineering. 3 credits.
Special Topics in the Cyber Security Engineering area, with different content in different terms. Offered by Volgenau School of Engineering (p. 1011). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: 60 credits towards BS in Cyber Security Engineering.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

CYSE 570: Fundamentals of Operating Systems. 3 credits.
Operating system design and implementation as it relates to management and interaction of processor, memory, files, and I/O devices. Includes security considerations and a review of data structures, programming concepts, and computer systems architecture. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

CYSE 580: Hardware and Cyber Physical Systems. 3 credits.
Covers computer architecture and hardware to support subsequent cyber-physical systems modules. Introduces cyber-physical systems as an integration of physical processes, computation, and networking. Discusses modeling and simulation of cyber-physical systems, system design, and implementation. Covers security issues in cyber-physical systems and applications selected from infrastructure, energy, transportation, robotics, manufacturing, and communications domains. Students study and build cyber-physical systems. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Dance (DANC)

100 Level Courses

DANC 101: Dance Appreciation. 3 credits. Introduces dance as universal human activity, expression of cultural identity, and art form. Survey of global dance includes folk, ceremonial and ritual, trance, court, classical, and theatrical. Offered by School of Dance (p. 844). Limited to three attempts.

Mason Core: Arts (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 114: Rhythmic Analysis and Music Resources for Dance. 3 credits. Introduces rhythmic structure, notation, and basic forms of music. Offered by School of Dance (p. 844). Limited to three attempts.

Registration Restrictions:
Enrollment is limited to students with a major in Dance.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 118: World Dance. 3 credits. Performance of a world dance form through presentation of fundamental techniques, music and culture. Area of concentration may vary to include an array of world dance forms. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 6 credits.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 119: Dance in Popular Culture: Afro-Latino Dance. 3 credits. Performance of a popular dance form through presentation of fundamental techniques, music, and culture. Area of concentration may vary to include an array of popular dance forms. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 120: Special Topics in Dance. 1-3 credits. Rotating topic. Introduction and exploration of topical studies in dance or related study areas; topic depends on instructor. Notes: May be repeated if course content differs. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 9 credits.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 125: Modern/Contemporary Dance I. 3 credits. Introduces fundamentals of modern dance technique. Emphasizes improving anatomical awareness and alignment, increasing strength and flexibility, and developing rhythmic sensitivity. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts, Encore: Well-Being (p. 142)

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 131: Beginning Jazz Technique. 3 credits. Introduces fundamentals of jazz dance technique, explores the musical and cultural traditions of jazz dance, and its historical context. Emphasizes improving anatomical awareness and alignment, increasing strength and flexibility, and developing rhythmic sensitivity. Also introduces jazz improvisation and choreography. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 145: Ballet I. 3 credits. Introduces fundamental elements of ballet technique and vocabulary. Stresses learning vocabulary and movement characteristics of this highly stylized art form. Emphasizes improving anatomical awareness and alignment, increasing strength and flexibility, and developing musicality. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts, Encore: Well-Being (p. 142)

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 150: Dance Improvisation. 3 credits. Explores movement invention and discovery. Movement explored in relation to other art forms such as literature, painting, sculpture, and architecture; enhancing kinesthetic awareness; sensitivity to others; and the environment. Prerequisite for dance composition and choreography series. Offered by School of Dance (p. 844). Limited to three attempts.

Registration Restrictions:
Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 161: Beginning Tap Dance. 3 credits. Introductory exploration of rhythms and steps basic to the art form of tap dancing including its musical and cultural traditions. Emphasizes improving anatomical awareness and alignment, increasing strength and
flexibility and developing rhythmic sensitivity. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

**Mason Core:** Arts (p. 142)

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 170:** Orientation to Dance Production. 1 credit.
Introduces sound, lighting, and stage management elements and terminology as related to dance performance. Intensive workshop setting emphasizes laboratory experience. Offered by School of Dance (p. 844). Limited to three attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major in Dance.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**DANC 210:** Anatomy and Kinesiology for Dance. 3 credits.
Covers aspects of anatomy and kinesiology that directly apply to correct development of dance technique. Emphasizes exercise correctives and imagery to correct insufficient muscle pattern and reduce stress on the body. Offered by School of Dance (p. 844). Limited to three attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major in Dance.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 225:** Modern/Contemporary Dance II. 3 credits.
Further develops knowledge, skills, and appreciation of modern dance through continued exploration of techniques, aesthetics, and creativity. Continuing the development of anatomical awareness and alignment, technical clarity, and rhythm. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 9 credits.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** DANC 125 or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 231:** Intermediate Jazz Technique. 3 credits.
Further study of the concepts of jazz dance technique, and in-depth study of 21st century jazz dance forms. Emphasizes furthering anatomical awareness and alignment, developing technical clarity, rhythm and syncopation. Continues exploration of jazz improvisation and choreography. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 12 credits.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** DANC 131 or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 245:** Ballet II. 3 credits.
Further develops fundamental elements of ballet technique and vocabulary. Stresses increasing vocabulary and movement characteristics of this highly stylized art form. Continuing emphasis on improving anatomical awareness and alignment, increasing strength and flexibility, and developing musically. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 9 credits.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** DANC 145 or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 251:** Dance Composition I. 3 credits.
Introduces basic principles for composing dance movement. Focuses on simple compositional forms as they apply to solo performer, discussion, analysis, and evaluation of artistic choices. Students maintain video and written journals to document their artistic process. Offered by School of Dance (p. 844). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** DANC 150<sup>C</sup>. 
<sup>C</sup> Requires minimum grade of C.

Enrollment is limited to students with a major in Dance.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 252:** Dance Composition II. 3 credits.
Explores compositional elements in dance as they apply to group forms. Offers continued experience in developing and manipulating movement phrases using a variety of compositional forms. Introduces conducting rehearsals and selecting music. Students discuss, analyze, and evaluate artistic choices in composition using appropriate dance arts vocabulary and terminology, and maintain video and written journals to document artistic process. Offered by School of Dance (p. 844). Limited to three attempts.
Registration Restrictions:
Required Prerequisites: (DANC 150\textsuperscript{C} and 251\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 270: Dance Production Lab. 1 credit.
Practical experience in stage crew, sound, or lighting of dance productions through rehearsal to public performance for university dance concerts or guest artist programs. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Required Prerequisite: DANC 170\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Enrollment is limited to students with a major in Dance.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 301: What is Dance?. 3 credits.
Explores connections among literature, music, theater, and visual art within aesthetic framework of dance. Examines development and ideals of Western theatrical dance, and historical and social context in which they were created. Method of instruction includes lecture, discussion, and studio experiences. Offered by School of Dance (p. 844). Limited to three attempts.

Mason Core: Arts (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 318: Global Perspectives: World Dance Forms. 3 credits.
Continued in-depth study of world dance form including technique, music, and culture. Texts, video, performances, music, participatory events, and guest artist presentations. Lecture, studio. Area of concentration varies to include as many cultures as possible. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

Mason Core: Global Understanding (p. 142)

Registration Restrictions:
Required Prerequisites: (DANC 118\textsuperscript{C} or 119\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 324: Introduction to Dance Conditioning. 1-3 credits.
Course involves intensive rehabilitation and conditioning exercises and realignment training geared for the individual dancer. In-depth understanding of injury prevention and neuromuscular re-education are applied to ballet and modern technique classes. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 325: Modern/Contemporary Dance III. 1-3 credits.
Explores intermediate level of modern dance technique. Emphasizes improving anatomical awareness, increasing strength and flexibility, expanding modern dance vocabulary, and developing flow and dynamic range. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 24 credits.

Mason Core: Arts (p. 142)

Registration Restrictions:
Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 331: Advanced Jazz Dance. 3 credits.
In-depth studio study of 21st century jazz dance forms. Continues concepts and vocabulary introduced in DANC 231, and further emphasizes alignment, technical clarity and virtuosity. Emphasizes mastery of rhythm and syncopation. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Recommended Prerequisite: DANC 231 or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 335: Ballet III. 1-3 credits.
Provides continued ballet training for intermediate-level dancer. Emphasizes increasing technical proficiency, improving anatomical awareness, and developing deeper understanding of skills and principles of ballet technique and how they provide foundation to teach and perform. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 24 credits.

Mason Core: Arts (p. 142)

Registration Restrictions:
Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
DANC 360: Choreography. 3 credits.
Continued choreographic exploration and research, culminating in bringing completed works to production. Offered by School of Dance (p. 844). Limited to three attempts.

Specialized Designation: Impact Associated.

Registration Restrictions:
Required Prerequisites: (DANC 150C, 251C and 252C).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 362: RS: Directed Choreography. 1 credit.
Faculty-guided, individual learning experience where students learn to choreograph a dance work by auditioning dancers, costuming, staging, lighting, selecting musical accompaniment, and composing original movement material. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 6 credits.

Specialized Designation: Research/Scholarship Intensive

Registration Restrictions:
Required Prerequisites: (DANC 150C, 251C, 252C and 360C).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 370: Dance Performance. 1 credit.
Practical experience in performance, repertory, and choreography through rehearsal and public performance of university dance concerts or guest artist programs. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 371: Residency Workshop. 1 credit.
Rehearsal and performance of new or restaged dance by guest choreographer in intensive rehearsal setting. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to students with a major in Dance.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 372: Advanced Dance Production. 1 credit.
Methodology and practice of costume and lighting design, as dictated by specific needs of dance performance. Notes: Taught in series of workshop settings. Offered by School of Dance (p. 844). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (DANC 170C and 270C).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Dance.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 390: Dance History I. 3 credits.
Examines dance as it developed as Western theatrical form from its beginnings in social and folk dance through evolution into ballet. Emphasizes romantic and classical ballet. Also studies American dance forms as they evolved in spectacles, burlesques, minstrelsy, and social dance. All forms of dance placed in social, political, cultural, aesthetic, and historical contexts. Offered by School of Dance (p. 844). Limited to three attempts.

Mason Core: Arts (p. 142)

Specialized Designation: Writing Intensive in Major

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 391: Dance History II. 3 credits.
Examines revolutions in transformation of 20th-century Western dance into forms and institutions that radically departed from predecessors. Development of contemporary dance carried with it reflections of the influence of technology and media as well as concept of global culture. Renewed interest in traditional dance forms acknowledges power of dance to serve as carrier of cultural and societal values. Dance forms placed in social, political, cultural, aesthetic, and historical contexts. Offered by School of Dance (p. 844). Limited to three attempts.

Mason Core: Arts (p. 142)

Specialized Designation: Writing Intensive in Major

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

DANC 399: Independent Study. 1-3 credits.
Individual research or creative project supervised by faculty member. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Permission of director of School of Dance.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

**DANC 410: Introduction to Contemporary Movement Theories.** 3 credits.
Introduction to movement theories combining somatic theory with practical application to dance training. Focus on ways somatic practices can deepen perceptual processes and influence movement aesthetics. Theories studied may include: Alexander Technique, Feldenkrais Method, Body-Mind Centering, and Ideokinesis. Offered by School of Dance (p. 844). Limited to three attempts.

**Registration Restrictions:**

Required Prerequisite: DANC 210C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Dance.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 418: Global Dance Intensive.** 3 credits.
Intensive investigation of selected dance idiom within cultural and artistic contexts. Course work supplemented by participation in and observation of ambient culture. Analyzes similarities, differences, and common antecedents between selected culture and North American dance idioms. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

**Mason Core:** Global Understanding (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 420: Special Topics in Dance.** 1-3 credits.
In-depth presentation and exploration of topical studies in dance or related study areas. Notes: Topic depends on instructor. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** 9 hours of DANC or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 425: Modern/Contemporary Dance IV.** 1-3 credits.
Advanced-level exploration of modern dance technique. Emphasizes refining alignment, developing ability to self-correct, and replicating sophisticated movement sequences. Preparation to enter professional field of dance. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 18 credits.

**Mason Core:** Arts (p. 142)

**Registration Restrictions:**
Enrollment is limited to students with a major in Dance.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 445: Ballet IV.** 1-3 credits.
Provides preprofessional ballet training for advanced-level dancer. Emphasizes attainment of high-quality technical and performance skills, application of anatomical principles, and mastery of sophisticated classical movement sequences. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 18 credits.

**Mason Core:** Arts (p. 142)

**Registration Restrictions:**
Enrollment is limited to students with a major in Dance.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 453: Teaching Creative Movement.** 3 credits.
Provides theory, methodology, and practicum experience in preparation for teaching creative movement to children K-12, with some application to special populations. Offered by School of Dance (p. 844). Limited to three attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major in Dance.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 454: Methods of Teaching Dance.** 3 credits.
Examines dance pedagogy, focusing on principles needed for teaching sound technique. Students learn skills, methods, and instructional procedures for classroom. Emphasizes curriculum development, proper course sequencing, implementation of teaching strategies, and classroom management techniques. Students study teaching methods appropriate for K-12, gifted and talented, and special-needs students. Intensive practice in implementing these skills includes lab, field-teaching experiences. Offered by School of Dance (p. 844). Limited to three attempts.

**Mason Core:** Oral Communication (p. 142)

**Registration Restrictions:**
Enrollment limited to students with a class of Senior.

Enrollment is limited to students with a major in Dance.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**DANC 490: Senior Dance Seminar.** 3 credits.
Culminating seminar devoted to analyzing and synthesizing knowledge and skills gained through undergraduate course work as it applies to dance, arts education, and professional development. Students develop senior project including written and oral presentation in public forum. Offered by School of Dance (p. 844). Limited to three attempts.

**Mason Core:** Synthesis (p. 142)

**Registration Restrictions:**
Enrollment limited to students with a class of Senior Plus or Senior.
Enrollment is limited to students with a major in Dance.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

**DANC 501: Graduate Dance Seminar.** 1-3 credits.
Presentation and discussion of current issues in dance specific to education, research, and professional development in the field. Offered by School of Dance (p. 844). May be repeated within the degree.

**Recommended Prerequisite:** Admission to MFA in Dance program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DANC 510: Contemporary Movement Theories.** 3 credits.
In-depth study of movement theories combining somatic theory with practical application to dance training. Focus is on ways somatic practices can deepen perceptual processes and influence movement aesthetics. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DANC 520: Special Topics in Dance.** 1-3 credits.
In-depth presentation and exploration of topical studies in dance and/or related study areas. Notes: Topic depends on instructor. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DANC 525: Advanced Modern Dance.** 1-3 credits.
Advanced study of modern technique, emphasizing sophisticated technical ability and performance skills, includes comparison of pedagogical perspectives. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 18 credits.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DANC 545: Advanced Ballet.** 1-3 credits.
Advanced study of ballet technique with an emphasis on high technical ability, performance skills and ballet vocabulary, includes comparison of pedagogical perspectives. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 18 credits.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DANC 560: Advanced Choreography.** 3 credits.
Intensive study and exploration of choreographic forms. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

DANC 570: Advanced Dance Performance. 1-3 credits.
Public performance/presentations in university or professional productions. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Admission to Dance MFA program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

DANC 571: Residency Workshop. 3 credits.
Rehearsal direction of a new or restaged work by a guest choreographer in an intensive rehearsal process. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Admission to Dance MFA program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

DANC 580: Laban Movement Analysis. 3 credits.
Introduction to the components of Laban Movement Analysis: body, shape, effort and space. Offered by School of Dance (p. 844). May not be repeated for credit.

Recommended Prerequisite: Admission to Dance MFA program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

DANC 598: Philosophy and Aesthetics of Dance. 3 credits.
Study of philosophical theories and aesthetic principles of dance as a performing art. Offered by School of Dance (p. 844). May not be repeated for credit.

Recommended Prerequisite: DANC 390 and DANC 391, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

DANC 599: Independent Study. 3 credits.
Individual research or creative project. Offered by School of Dance (p. 844). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Admission to Dance MFA program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

600 Level Courses

DANC 615: Contemporary Trends. 3 credits.
Study of contemporary art and artists and their philosophical theories, aesthetics and practices as they relate to the creation of new work. Offered by School of Dance (p. 844). May not be repeated for credit.

Recommended Prerequisite: Admission to Dance MFA program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

DANC 627: Advanced Teaching Seminar. 3 credits.
Discussion and readings from varied pedagogical theories examining diverse approaches to teaching technique and theory culminating in
development of a teaching portfolio. Offered by School of Dance (p. 844). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DANC 672: Dance Production.** 3 credits.
Artistic Direction of university or professional performance including mentoring of choreographers, adjudication of work, coordination with lighting designer, costumer, sound technician and managing director. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DANC 680: Dance Management.** 3 credits.
Exploration of the technical, financial and economical aspects of dance management including areas of marketing, fundraising, publicity, incorporation, booking non-profit vs. profit making organizations and issues relating to current practices in the performing arts industry. Offered by School of Dance (p. 844). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**700 Level Courses**

**DANC 790: Internship.** 1-3 credits.
In depth study in selected subject area of interest. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DANC 798: Directed Choreography/Project.** 1-3 credits.
This course provides intensive independent choreographic study, culminating in the creation of a significant dance work or body of works, presented in a professional level public performance. The choreography must demonstrate the student’s mastery of choreographic craft, an original concept and compelling artistry. Offered by School of Dance (p. 844). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to MFA in Visual and Performing Arts: Dance Concentration and DANC 560.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**DANC 799: Thesis.** 1-6 credits.
Creation and documentation of original research including planning, performance, recording and written reflecting under direction of thesis committee. Offered by School of Dance (p. 844). May be repeated within the degree.

**Recommended Prerequisite:** Admission to Dance MFA program.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Data Analytics Engineering (DAEN)**

**500 Level Courses**

**DAEN 500: Data Analytics Fundamentals.** 3 credits.
Provides a foundation in data analytics from which the student will build. Focuses on a dataset where students will use analytics tools and apply statistical methodologies in order to extract information of value. Offered
by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**DAEN 527: Learning From Data. 3 credits.**
This is an introductory course in machine learning and pattern recognition that covers basic theory, algorithms, and applications. Machine learning is the science of getting computers to act without being explicitly programmed. This course balances theory and practice, and covers the mathematical as well as the heuristic aspects. It provides a broad introduction to machine learning and pattern recognition. Topics include: (i) supervised learning (parametric/non-parametric algorithms, support vector machines, kernels, neural networks). (ii) Unsupervised learning (clustering, dimensionality reduction, recommender systems, autoencoders). (iii) Learning theory (bias/variance tradeoffs, VC theory, generalization). (iv) Ensemble methods (boosting and bagging, random forests). (v) Deep learning (deep belief networks, convolutional neural networks, deep autoencoders). The course will draw from numerous case studies and applications. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit. Equivalent to ECE 527.

**Recommended Prerequisite:** (MATH 203 and STAT 346) or equivalent

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**DAEN 690: Data Analytics Project. 3 credits.**
Capstone project course for MS in Data Analytics program. Key activity is completion of a major applied team project resulting in an acceptable technical report and oral briefing. Student should plan to take this course in the last semester of studies. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

**Recommended Prerequisite:** Completion of 18 credit hours of coursework in the MS Data Analytics program and departmental approval to register. It is also recommended that DAEN 690 be taken in your last semester.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**DAEN 698: Data Analytics Research Project. 1-3 credits.**
Conduct a research project to be chosen and completed under guidance of a graduate faculty member that results in an acceptable technical report. Notes: No more than a total of three credits may be taken from within the DAEN program. Offered by Volgenau School of Engineering (p. 1011). May be repeated within the term for a maximum 3 credits.

**Recommended Prerequisite:** Graduate Standing, completion of at least two core courses and a minimum of 12 credits in the DAEN program, and permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**Early Childhood Education (ECED)**

**200 Level Courses**

**ECED 201: Introduction to Early Childhood Education for Diverse Learners. 3 credits.**
Explores major theories of learning in culturally, linguistically, ability, and socioeconomically diverse early childhood education contexts. Focuses on identifying developmentally effective approaches, instructional strategies, and tools to connect with children and families that positively influence young children’s learning. Emphasizes anti-biased curriculum and considers advocacy pathways for early childhood educators. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**ECED 401: Developmental Pathways of Diverse Learners, Birth-Adolescence. 3 credits.**
Examines child and adolescent development from diverse perspectives. Addresses typical and atypical physical, social and emotional, language, and intellectual development. Explores role of individual differences
and culture in understanding and interpreting child and adolescent development. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECED 402: Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners.** 3 credits.
Examines complexity of language and literacy development of diverse young learners. Emphasizes language acquisition, reading, and writing in prekindergarten and kindergarten contexts. Focuses on evidence-based assessment and instructional practices that promote prekindergarten and kindergarten children's language and literacy development. Explores social, cultural, affective, cognitive, and educational factors that play a role in language acquisition and literacy learning. Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECED 403: Inclusive Curriculum for Young Learners: Planning Instruction and Guidance.** 3 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECED 404: Engaging Families of Diverse Learners, Birth – Grade 6.** 3 credits.
Focuses on strategies for developing culturally appropriate family professional engagement to benefit children, birth – sixth grade, including children from diverse cultural and linguistic backgrounds and children with special needs. Explores theories and research supporting a family-centered approach, including family and professional rights and responsibilities, especially in the special education process. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECED 405: Introduction to Early Childhood Special Education.** 3 credits.
Surveys current knowledge about young children with disabilities within the context of human growth and development and learning expectations in the preschool years. Includes historical factors and legislation affecting service delivery. Notes: Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECED 406: Medical and Developmental Aspects of Disabilities of Diverse Young Learners.** 3 credits.
Focuses on medical and developmental aspects of children with disabilities, birth to age 5. Emphasizes the role of professionals in service delivery. Explores etiology, symptomatology, and management of neuromotor and developmental disabilities. Emphasizes positioning, adaptive strategies, and understanding assistive technology devices. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECED 411: Assessment of Diverse Young Learners.** 3 credits.
Examines types of assessment, including family-centered child assessment, for planning and implementing effective programs for culturally, linguistically, and ability diverse children, birth through third grade. Addresses selection, administration, analysis, and interpretation of formal and informal assessments. Field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
**Required Prerequisites:** (ECED 401C or 501C) and (ECED 403C or 503C). C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECED 412: Language and Literacy Assessment and Instruction for Diverse Primary Grade Learners.** 3 credits.
Examines ways to assess and develop reading, writing, and the language arts in primary grade classrooms. Addresses instructional strategies and practices that promote language and literacy development in culturally, linguistically, socioeconomically, and ability diverse children. Offered by Graduate School of Education (p. 162). Limited to three attempts. Equivalent to ECED 512.

**Registration Restrictions:**
**Required Prerequisites:** ECED 402C or 502C. C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECED 413: Integrating Social Studies Across the Content Areas for Diverse Young Learners.** 3 credits.
Explores social studies content, assessment, curriculum development, planning, and instructional practices. Examines strategies for guiding children's behavior, integrating social studies instruction across content areas, and planning and implementing community of learners inclusive of children with diverse abilities and cultural, linguistic, and socio-economic backgrounds. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Recommended Prerequisite:** ECED 403.

**Schedule Type:** Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 415: Mathematics for Diverse Young Learners. 3 credits.
Examines ways to foster development of mathematics in preschool to third-grade children. Covers construction of mathematics lessons and hands-on experiences that promote learning in children with diverse abilities and cultural and linguistic backgrounds. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: ECED 403.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 416: Science for Diverse Young Learners. 3 credits.
Examines ways to foster development of science in preschool to third-grade children. Covers construction of science lessons and hands-on experiences that promote learning in children with diverse abilities and cultural and linguistic backgrounds. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: ECED 403.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 422: Developing Language, Literacy, and Communication of Diverse Infants and Toddlers. 3 credits.
Examines instructional strategies, resources, and technologies, including assistive technologies, to develop language, literacy, and communication of diverse infants and toddlers. Explores monolingual and multilingual language acquisition, cultural and linguistic diversity, and language delays and disorders. Focuses on the importance of adult-child interaction and the role of the family in children's language, literacy, and communication development. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 423: Early Intervention for Infants & Toddlers with Disabilities: Collaborative & Consultative Approaches. 3 credits.
Covers methods of service delivery for infants and toddlers with disabilities and their families. Explores key aspects of consultation, interdisciplinary collaboration, service coordination, and family-centered services. Focuses on culturally responsive practices. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 450: Practicum in Early Childhood Education for Diverse Learners. 3 credits.
Provides opportunities to observe and participate in early care and education programs for young children with varied abilities and from diverse cultural, linguistic, and socioeconomic backgrounds. Offers a context for developing and enacting content, strategies, and pedagogical knowledge. Explores the implementation of recommended practices in inclusive environments. Examines classroom environments, assessment and instructional practices, family engagement, and guiding and supporting positive behavior. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: ECED 401C, 402C and 403C.
C Requires minimum grade of C.

Schedule Type: Fieldwork

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 470: Advanced Practicum in Early Childhood Education for Diverse Learners. 3 credits.
Provides opportunity for practical application of inclusive practices based on early childhood principles, theories, and recommended practices. Offers context for developing and enacting content, strategies, and pedagogical knowledge. Provides opportunity to work with young children and their families in early care and education program settings that serve children with varied abilities from diverse cultural, linguistic, and socioeconomic backgrounds. Promotes collaboration with families and other professionals. Enhances communication skills and professionalism. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Fieldwork

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 485: Applied and Teacher Research in Early Childhood Education. 3 credits.
Develops fundamental concepts, principles, and methods of research in early childhood education, with emphasis on interpreting and applying research results. Critiques research and uses findings in educational settings. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 490: Internship in Early Childhood Education. 3 credits.
Enables students to participate full time in an internship in early childhood education (birth-grade 3). Links university course work to real world of working with diverse young children and their families. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Required Prerequisites: ECED 401C, 402C, 403C, 404C and 411C.
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Early Childhood Spec Ed Licens, Early Child Sp Ed E/P Ed Licens, Early/Primary Educ PK-3 Licens, Early Childhood Ed-PK3 or Early Childhood Special Edu.
Enrollment limited to students in a Bachelor of Science or Post-Baccalaureate Certificate degrees.

Enrollment limited to students in the Education Human Development college.

Schedule Type: Student Teaching

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ECED 491: Seminar in Early Childhood Education for Diverse Learners. 3 credits.
Provides opportunity to evaluate and reflect upon classroom practices and interactions with diverse young children, families, and other professionals. Examines evidence-based practices used in early childhood classrooms to respond to the individual and group strengths, needs, and interests of young children with varied abilities from culturally, linguistically, and socioeconomically diverse backgrounds. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Required Prerequisite: ECED 490*C.

*May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECED 497: Special Topics in Early Childhood Education. 1-3 credits.
Provides study on selected topic or emerging issue in Early Childhood Education. Notes: May be repeated for credit with ECE program permission. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 9 credits.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

ECED 501: Developmental Pathways of Diverse Learners, Birth-Adolescence. 3 credits.
Examines child and adolescent development from diverse perspectives. Addresses typical and atypical physical, social and emotional, language, and intellectual development. Explores role of individual differences and culture in understanding and interpreting child and adolescent development. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECED 502: Foundations of Language and Literacy for Diverse Prekindergarten and Kindergarten Learners. 3 credits.
Examines complexity of language and literacy development of diverse young learners. Emphasizes language acquisition, reading, and writing in prekindergarten and kindergarten contexts. Focuses on evidence-based assessment and instructional practices that promote prekindergarten and kindergarten children's language and literacy development. Explores social, cultural, affective, cognitive, and educational factors that play a role in language acquisition and literacy learning. Notes: Field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECED 503: Inclusive Curriculum for Young Learners: Planning Instruction and Guidance. 3 credits.
Explores principles of learning, curriculum development, and relationship between assessment and instruction. Examines role of play and active exploration in learning. Addresses guiding children's behavior and the role of families and culture in children's learning. Notes: Field experience required Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECED 504: Engaging Families of Diverse Young Learners. 3 credits.
Focuses on strategies for developing culturally appropriate family professional partnerships to benefit children, including children from diverse cultural and linguistic backgrounds and children with special needs. Explores theories and research supporting a family-centered approach, including family and professional rights and responsibilities, especially in the special education process. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 505: Introduction to Early Childhood Special Education.** 3 credits.
Surveys current knowledge about young children with disabilities within the context of human growth and development and learning expectations in the preschool years. Includes historical factors and legislation affecting service delivery. Notes: Field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 506: Medical and Developmental Aspects of Disabilities of Diverse Young Learners.** 3 credits.
Focuses on medical and developmental aspects of children with disabilities, birth to age 5. Emphasizes the role of professionals in service delivery. Explores etiology, symptomatology, and management of neuromotor and developmental disabilities. Emphasizes positioning, adaptive strategies, and understanding assistive technology devices. Offered by Graduate School of Education (p. 162). May not be repeated for credit. Equivalent to EDSE 558.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 512: Language and Literacy Assessment and Instruction for Diverse Primary Grade Learners.** 3 credits.
Examines ways to assess and develop reading, writing, and the language arts in primary grade classrooms. Addresses instructional strategies and practices that promote language and literacy development in culturally, linguistically, socio-economically, and ability diverse children. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: ECED 402B or 403B.

**B-** Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 513: Integrating Social Studies Across the Content Areas for Diverse Young Learners.** 3 credits.
Explores social studies content, assessment, curriculum development, planning, and instructional practices. Examines strategies for guiding children's behavior, integrating social studies instruction across content areas, and planning and implementing community of learners inclusive of children with diverse abilities and cultural, linguistic, and socio-economic backgrounds. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** ECED 503

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
ECED 514: Mathematics and Science for Diverse Young Learners. 3 credits. Examines ways to foster development of mathematics and science in preschool to third-grade children. Covers construction of math and science lessons and hands-on experiences that address the needs of culturally, linguistically, and ability diverse children. Notes: Field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Early Childhood Education program or approval of course instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ECED 515: Mathematics for Diverse Young Learners. 3 credits. Examines ways to foster development of mathematics in preschool to third-grade children. Covers construction of mathematics lessons and hands-on experiences that promote learning in children with diverse abilities and cultural and linguistic backgrounds. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** ECED 403 or ECED 503.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ECED 516: Science for Diverse Young Learners. 3 credits. Examines ways to foster development of science in preschool to third-grade children. Covers construction of science lessons and hands-on experiences that promote learning in children with diverse abilities and cultural and linguistic backgrounds. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** ECED 403 or ECED 503.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ECED 522: Developing Language, Literacy, and Communication of Diverse Infants and Toddlers. 3 credits. Examines instructional strategies, resources, and technologies, including assistive technologies, to develop language, literacy, and communication of diverse infants and toddlers. Explores monolingual and multilingual language acquisition, cultural and linguistic diversity, and language delays and disorders. Focuses on the importance of adult-child interaction and the role of the family in children's language, literacy, and communication development. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Early Childhood Education program or approval of course instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ECED 523: Early Intervention for Infants & Toddlers with Disabilities: Collaborative & Consultative Approaches. 3 credits. Covers methods of service delivery for infants and toddlers with disabilities and their families. Explores key aspects of consultation, interdisciplinary collaboration, service coordination, and family-centered services. Focuses on culturally responsive practices. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Early Childhood Education program or approval of course instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ECED 597: Special Topics in Early Childhood Education. 1-3 credits. Provides study on selected topic or emerging issue in Early Childhood Education. Notes: May be repeated for credit with ECE program permission. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**ECED 601:** *Frameworks for Early Childhood Education.* 3 credits.
Analyzes foundational frameworks for developing perspectives for working with culturally, linguistically, and ability diverse young learners, birth to age 8, and their families. Examines foundational work from fields of early childhood education, early childhood special education, multicultural education, and second language acquisition. Notes: Must be taken as final course or with final courses of the program. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 685:** *Applied and Teacher Research in Early Childhood Education.* 3 credits.
Develops fundamental concepts, principles, and methods of research in early childhood education, with emphasis on interpreting and applying research results. Critiques research and uses findings in educational settings. Serves as a capstone course in early childhood education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Taken with or after final course of program or with permission of the program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 691:** *Policy Perspectives in Early Childhood Education.* 3 credits.
Explores historical and current trends and issues involving legislation and policy in early childhood education, multilingual education, early childhood special education, and multicultural education. Focuses on historical role of social advocacy, development of advocacy skills, and collaboration and consultation with other professionals and staff in early childhood education of services and context of service delivery. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 700 Level Courses

**ECED 702:** *Early Writing: Cognition, Language, and Literacy.* 3 credits.
Examines early writing research and practice related to cognition, language, and literacy in the early education of diverse learners, including special education and multicultural/multilingual education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Approval of instructor and admission to the PHD program.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 704:** *Family Research and Practice in Early Childhood Education.* 3 credits.
Explores the relationship between families and professionals in providing appropriate early care and education, birth through grade 3, including children with special education needs and those from culturally, linguistically, and economically diverse backgrounds. Includes in-depth study, analysis, and discussions of original research as well as synthesis of findings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Approval of instructor and admission to the PHD program.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 710:** *International Perspectives in Early Childhood Education.* 3 credits.
Examines international perspectives in early childhood education in various contexts to increase students’ knowledge of approaches to planning and implementing effective programs for culturally, linguistically, and ability diverse children by professionals working with young children and families to inform, connect, and enrich U.S. based programs in early childhood education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.
**Recommended Prerequisite:** Admission to the M.Ed. in Curriculum and Instruction, Concentration in Early Childhood Education for Diverse Learners, the Ph.D. in Education, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECED 788: Internship in Early Childhood Education Prekindergarten-Third Grade.** 6 credits.
Enables students to participate full time in an internship in early childhood education (prekindergarten through third grade). Links university course work to real world of working with diverse young learners and their families. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** ECED 401 or 501, ECED 403 or 503 and Admission to the Early Childhood Education Prekindergarten-Third Grade Licensure Graduate Certificate Program. Endorsement and standardized test requirements (Praxis Core Academics Skills for Educators or qualifying substitution, Praxis II, and Virginia Communication and Literacy Assessment) must be met the semester prior to the internship.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**ECED 789: Internship in Early Childhood Special Education Birth - Five.** 6 credits.
Enables students to participate full time in an internship in early childhood special education (birth-5). Links university course work to real world of working with children with special needs and their families. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** ECED 401 or 501, ECED 403 or 503, and Admission to the Early Childhood Special Educational Licensure Graduate Certificate Program. All standardized test requirements (Praxis Core Academic Skills of Educators or qualifying substitution and Virginia Communication and Literacy Assessment) must be met prior to applying to the internship.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**ECED 790: Internship with Diverse Preschool Children.** 3 credits.
Enables students to participate full time in an internship with diverse preschool children. Links university course work to real world of working with diverse young learners and their families. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ECED 401 or 501, ECED 403 or 503, and Admission to the Early Childhood Education Prekindergarten – Third Grade (Licensure) Graduate Certificate Program. All endorsement and standardized test requirements (Praxis Core Academics Skills for Educators or qualifying substitution, Praxis II, and Virginia Communication and Literacy Assessment) must be met the semester prior to the internship.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**ECED 791: Internship with Diverse Infants and Toddlers.** 3 credits.
Enables students to participate full time in an internship with diverse infants/toddlers. Links university course work to real world of working with diverse young learners and their families. Notes: Students enroll in both infant/toddler (3 credits) and preschool (3 credits) internships. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ECED 401 or 501, ECED 403 or 503, and Admission to the Early Childhood Special Education (Licensure) Graduate Certificate Program. All standardized test requirements (Praxis Core Academic Skills for Educators or qualifying substitution and Virginia Communication and Literacy Assessment) must be met the semester prior to the internship.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**ECED 793: Internship in Preschool Early Childhood Special Education.** 3 credits.
Enables students to participate full time in an internship in preschool early childhood special education. Links university course work to real world of working with diverse young learners and their families. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ECED 401 or 501, ECED 403 or 503, and Admission to the Early Childhood Special Education (Licensure) Graduate Certificate Program. All standardized test requirements (Praxis Core Academic Skills for Educators or qualifying substitution and Virginia Communication and Literacy Assessment) must be met the semester prior to the internship.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

ECED 795: Internship in Kindergarten - Third Grade. 3 credits.
Enables students to participate full time in an internship in early childhood education in kindergarten through third grade. Links university course work to real world of working with diverse young learners and their families. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: ECED 401 or 501, ECED 403 or 503, and Admission to the Early Childhood Education Prekindergarten - Third Grade Licensure Graduate Certificate Program. Endorsement and standardized test requirements (Praxis Core Academic Skills for Educators or qualifying substitution, Praxis II, and Virginia Communication and Literacy Assessment) must be met prior to applying for the internship.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

ECED 801: Current Research and Trends in Early Childhood Education. 3 credits.
Examines research and trends in the early education of children. Explores issues that influence the education of young children with special education needs and children from culturally, linguistically, and economically diverse backgrounds. Examines practices appropriate for diverse young learners. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Admission to the PhD in Education program or post-master’s status and approval of course instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECED 804: Family Research and Practice in Early Childhood Education. 3 credits.
Explores the relationship between families and professionals in providing appropriate early care and education, birth through grade 3, including children with special education needs and those from culturally, linguistically, and economically diverse backgrounds. Includes in-depth study, analysis, and discussions of original research as well as syntheses of findings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the PhD in Education program or or advanced-master’s status with approval of course instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECED 812: Early Writing: Cognition, Language, and Literacy. 3 credits.
Examines writing research and practice related to cognition, language, and literacy in the early education of diverse learners, including special education and multicultural/multilingual education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the PhD in Education program or advanced-master’s status with approval of course instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

Economics (ECON)

100 Level Courses

ECON 100: Economics for the Citizen. 3 credits.
Not available to economics majors. Broad introduction to economic concepts and how they can contribute to a better understanding of the world around us. Applies and develops concepts to current economic and social problems and issues. Less formal modeling than in the 103-104 sequence. Offered by Economics (p. 345). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
**ECON 103: Contemporary Microeconomic Principles.** 3 credits.
Introduces microeconomics in the context of current problems. Explores how market mechanism allocates scarce resources among competing uses; uses supply, demand, production, and distribution theory to analyze problems. Offered by Economics (p. 345). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 104: Contemporary Macroeconomic Principles.** 3 credits.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Recommended Prerequisite:** ECON 103.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 105: Environmental Economics for the Citizen.** 3 credits.
Introduction to economic concepts and how they can be applied to environmental policy issues such as air and water pollution, climate change, natural resource use, and sustainability. Focus is on concepts, policy, and case studies rather than formal modeling exercises. Offered by Economics (p. 345). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Focused Course

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**ECON 296: Special Topics in Economics.** 3 credits.
Provides coverage of a specialized topic in economics at the introductory level. Topics vary by section. Notes: May be repeated for credit when topic is different. Offered by Economics (p. 345). May be repeated within the term for a maximum 9 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**ECON 306: Intermediate Microeconomics.** 3 credits.
Basic factors of price and distribution theory, analysis of demand, costs of production and supply relationships, and price and output determination under various market structures. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 103 and 104 and MATH 108 or 113.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 308: Managerial Economics and Strategy.** 3 credits.
Analysis of major strategic business situations including pricing strategy, incentives and contracts, game theory, and vertical and horizontal integration. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 306.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 309: Economic Problems and Public Policies.** 3 credits.
Economic problems in light of current and proposed public policies. Topics include environmental issues, international trade policies, and regulatory issues and their historical roots. Offered by Economics (p. 345). Limited to three attempts.

**Mason Core:** Synthesis (p. 142)

**Recommended Prerequisite:** ECON 100 or 103 and 104 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 310: Money and Banking.** 3 credits.
Monetary, commercial, and central banking systems, with particular emphasis on their relationship with American government programs, fiscal policies, and controls. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 103, 104 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 311: Intermediate Macroeconomics.** 3 credits.
Aggregate economic accounts, including measuring national income; determinants of levels of income and output; and causes and solutions for problems of unemployment, inflation, and economic growth. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 103 and 104 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 321: Economics of Labor.** 3 credits.
Defines factors that determine levels of wages and employment, and economic consequences. Emphasizes recent developments in unionism, collective bargaining, and industrial technology. Offered by Economics (p. 345). Limited to three attempts.
Recommended Prerequisite: ECON 306.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 330: Public Finance. 3 credits.
Covers intergovernmental financial relationships; types, incidences, and consequences of taxation; other sources of governmental income; governmental expenditures and their effect; public economic enterprises; public borrowing; and debt management and its economic effect. Offered by Economics (p. 345). Limited to three attempts.

Recommended Prerequisite: ECON 306 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 335: Environmental Economics. 3 credits.
Microeconomic analysis of environmental problems. Topics include externalities and market failure, alternative solutions and policies, problems in monitoring and enforcement, economic analysis of development of legislation and regulation, and applications to current policy issues. Offered by Economics (p. 345). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: ECON 103 and 104.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 340: Introduction to Mathematical Economics. 3 credits.
Mathematical treatment of theory of firm and household behavior, stabilization policy, growth theory, input-output analysis, and linear programming. Offered by Economics (p. 345). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (ECON 306\(^C\), 311\(^C\) and MATH 113\(^C\)).
\(^C\) Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 345: Introduction to Econometrics. 3 credits.
Modern statistical techniques in estimating economic relations. Offered by Economics (p. 345). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (ECON 306\(^D\) and 311\(^D\)) and (STAT 250\(^D\) and 350\(^D\) or STAT L350) or (STAT 344\(^D\) and 354\(^D\)).
\(^D\) Requires minimum grade of D.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 355: The Political Economy of Nonprofit Institutions. 3 credits.
Applies the basic principles of economics to teach students to think critically about nonprofit institutions. Examines the economics of nonprofit institutions, how incentives influence the evolution of charities, and current issues in nonprofit organizations. Offered by Economics (p. 345). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: ECON 103 and ECON 104 or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 360: Economics of Developing Areas. 3 credits.
Economic growth characteristic of developing countries. Economic development, obstacles to development, policies, and planning. Offered by Economics (p. 345). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Recommended Prerequisite: ECON 103 and 104 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 361: Economic Development of Latin America. 3 credits.
Economic development, institutions, and problems of Latin America. Offered by Economics (p. 345). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Recommended Prerequisite: ECON 103 and 104 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 362: African Economic Development. 3 credits.
Issues of economic development as applied to Africa. Includes overview of early economic history in Africa and post-independence development, and contemporary development problems. Offered by Economics (p. 345). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Recommended Prerequisite: ECON 103 and 104.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 365: Topics in Economic History. 3 credits.
Possible topics include ancient, medieval, modern European, and American economic history, using econometric analysis as necessary.
Notes: May be repeated when topic is different. Offered by Economics (p. 345). May be repeated within the term for a maximum 6 credits.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** ECON 103 and 104.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 367:** *Money, Markets, and Economic Policy.* 3 credits.  
Applies basic economic concepts and principles to issues facing the U.S. and global economies. Topics include productivity and economic growth, taxes, healthcare, globalization, income distribution and financial crises, with an emphasis on market structure, social institutions and the not-always rational behavior of investors and consumers. Offered by Economics (p. 345). Limited to three attempts. Equivalent to GOVT 367.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 370:** *Economics of Industrial Organization.* 3 credits.  
Factors influencing industrial structure, and industrial conduct and performance. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 306 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 374:** *Health Economics.* 3 credits.  
Microeconomic analysis of health and medicine. Topics include the determinants of health, health externalities, health insurance, the health effects of medicine, the supply and demand of medicine, medical quality and regulation, and information asymmetries. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 103 and ECON 104 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 380:** *Economies in Transition.* 3 credits.  
Examines problems and achievements of formerly communist and socialist countries including China, Eastern European countries, and Russia and other countries of the former Soviet Union as they transition to more market-oriented economies. Includes market economics and central planning. Offered by Economics (p. 345). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Recommended Prerequisite:** ECON 103 and 104 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 385:** *International Economic Policy.* 3 credits.  
Introduces economic way of thinking on trade and international finance. Presents historical and current information on consequences of trade and protectionism. Notes: May not be applied toward the elective course requirement needed for a major or minor in economics. Offered by Economics (p. 345). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 390:** *International Economics.* 3 credits.  
Foreign exchange market, balance of payment, foreign trade policies, and theories of international trade. Offered by Economics (p. 345). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Recommended Prerequisite:** ECON 306 and ECON 311 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 395:** *Effective Writing in Economics.* 3 credits.  
Develops students' ability to express economic arguments effectively through writing. Applies the basic principles of economics to teach students to think critically about economic problems. Offered by Economics (p. 345). Limited to two attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Recommended Prerequisite:** ECON 103 and ECON 104 or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**ECON 403:** *Austrian Economics.* 3 credits.  
Microeconomic and macroeconomic models and misallocation of resources. Alternative economic tools from noted Austrian economists. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 306 and 311.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 410:** *Public Choice.* 3 credits.  
Applies economic theory, methodology to study nonmarket decision making. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 306.

**Schedule Type:** Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 412: *Game Theory and Economics of Institutions*. 3 credits.
Introduces game theory and its relevance for analyzing framework of
rules and institutions within which economic processes occur. Applies
game theoretical concepts to comparative analysis of causes and effects
of alternative institutional arrangements. Offered by Economics (p. 345).
Limited to three attempts.

**Recommended Prerequisite:** ECON 306 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 415: *Law and Economics*. 3 credits.
Economic analysis of the law. Topics include introduction to legal
institutions and legal analysis; application of economic concepts to
the law of property, contracts and torts, criminal and constitutional law;
economic efficiency of common law; and public choice perspective on
the evolution of the law. Offered by Economics (p. 345). Limited to three
attempts.

**Recommended Prerequisite:** ECON 306 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 420: *International Money and Finance*. 3 credits.
Examines models of balance of payments, exchange rate behavior, and
open economy macroeconomics. Includes international financial system
and issues such as globalization and international financial instability.
Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 306 and 311, or permission of
instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Provides a survey of financial economics including a brief overview of the
U.S. and international financial system and the role of different financial
institutions. Covers the leading theoretical models in the field. Offered by
Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 103, ECON 104, ECON 306, ECON 311.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 435: *Economics of Energy*. 3 credits.
Examines various issues in the energy industry using tools from
microeconomic theory, law and economics and public choice. Topics
include issues related to oil, historical and current energy regulation,
and environmental issues associated with energy. Offered by Economics
(p. 345). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** ECON 306.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

credits.
Introduces design principles to develop systems to allocate resources.
Students must participate in experiment demonstrations of different
allocation mechanisms. They also are exposed to experimental methods
in economics and market design. Offered by Economics (p. 345). Limited
to three attempts. Equivalent to SYST 480.

**Recommended Prerequisite:** MATH 213.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 445: *Design and Analysis of Experiments*. 3 credits.
Topics include comparing two or more treatments, and computing
and interpreting analysis of variance. Discusses randomized block,
Latin square, and factorial designs; and applications to economics
experiments. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** STAT 250 or 344, or MATH 351, or IT 250, or
permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 460: *Senior Seminar in Philosophy, Politics, and Economics*. 3 credits.
Covers issues in the philosophy, economics, and political science of
institutions, information, and collective action. Through case studies of
existing legal and political institutions, applies the insights to problems
in politics, policy making, social-choice theory, and social, moral, and
political philosophy. (Specific content varies). Notes: Serves as the
capstone course for the PPE program. Offered by Economics (p. 345).
Limited to three attempts. Equivalent to GOVT 469, PHIL 460.

**Recommended Prerequisite:** PHIL 358 and ECON 412 or permission of
instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ECON 470: *Economics of Regulation*. 3 credits.
Examines various issues surrounding concepts of regulation using tools
from microeconomic theory and public choice. Topics include antitrust,
rate regulation, policy rationales for regulation, and issues of current
interest. Offered by Economics (p. 345). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** ECON 306.

**Schedule Type:** Lecture
**ECON 471: Airline Economics.** 3 credits.
Economic theory as it is applied to commercial airlines. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 306 or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 481: The Development of Economic Thought.** 3 credits.
Developments in economic thought from 1500 to the present. Emphasizes historical origins, impact on contemporary economics, and theoretical validity. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** ECON 306 and 311 or permission of instructor.

**Specialized Designation:** Writing Intensive in Major

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 485: Smithian Political Economy I.** 3 credits.
Studies the thought of Adam Smith. As the first in a two-course sequence, course focuses on The Theory of Moral Sentiments. Offered by Economics (p. 345). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 486: Smithian Political Economy II.** 3 credits.
Studies the thought of Adam Smith. As the second in a two-course sequence, course focuses on The Wealth of Nations. Offered by Economics (p. 345). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 492: Study Abroad.** 1-6 credits.
Study abroad under supervision of George Mason faculty. Course topics, content, and locations vary. Notes: May be repeated with permission of department. Offered by Economics (p. 345). May be repeated within the degree for a maximum 12 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 494: Introduction to Independent Research in Economics.** 3 credits.
Develops skills in finding and evaluating sources, oral presentation, and academic writing. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** Economics majors with 90 credits, and permission of both the department and instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECON 496: Special Topics in Economics.** 3 credits.
Subject matter varies. Notes: May be repeated when topic is different. Offered by Economics (p. 345). May be repeated within the term for a maximum 24 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**ECON 498: Internship.** 3-6 credits.
Students find economics-related internship with assistance from Career Services. Pre-internship proposal and final reflections paper required. Offered by Economics (p. 345). Limited to three attempts.

**Recommended Prerequisite:** 6 upper-level hours in economics, Junior standing, and permission of instructor.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**ECON 499: Independent Study.** 1-4 credits.
Individual study of selected area of economics. Notes: Directed research paper required. Offered by Economics (p. 345). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** Economics majors with 90 credits, and permission of both the department and instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

**ECON 535:** Survey of Applied Econometrics. 3 credits.
Applied introduction to estimating economic relationships. Includes simple equation and simultaneous equation system estimation. Non-Degree students are permitted to enroll based on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** Admission to master's program in economics or OM 210 or STAT 250 and 350, and ECON 306 and 311, and MATH 113; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

600 Level Courses

**ECON 611:** Microeconomic Theory. 3 credits.
Covers theory of behavior of consumers, firms, and resource suppliers; theories of choice under risk and uncertainty; partial equilibrium analysis of competitive and noncompetitive markets; general equilibrium analysis; and welfare economics. Introduces capital theory. Notes: Non-Degree students are permitted to enroll based on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** Admission to master's program in economics or ECON 306 and 311, and MATH 113; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 623:** American Economic History. 3 credits.
Explores development of American economy and evolution of economic institutions. Notes: ECON 637 recommended. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 and 615, or ECON 715 and 811, taken concurrently; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
ECON 630: Mathematical Economics I. 3 credits.
Topics covered include: constrained maximization, differential calculus, integral calculus, linear algebra, matrix algebra, probability, and set theory. Emphasis is placed on economic applications. Notes: Non-Degree students are permitted to enroll depending on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: Admission to master's program in economics, or ECON 306 and 311, and MATH 113, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 632: Economic Systems Design Principles and Experiments. 3 credits.
Introduces analytical and engineering principles to develop exchange systems. Students must become familiar with literature on applied mechanism design; and understand behavioral aspects of auction systems, matching, assignment and transportation problems, and information markets. Also introduces methods for testbedding systems using experimental economics and statistical design. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: A course in linear and nonlinear optimization along with a course in linear algebra.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 637: Econometrics I. 3 credits.
Techniques of estimating relationships between economic variables. Introduces multiple regression and problems associated with single equation model-autocorrelation, multicollinearity, and heteroscedasticity. Notes: Non-Degree students are permitted to enroll based on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: Acceptance to PhD program in economics, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 639: Economic Systems Design Principles and Experiments. 3 credits.
Introduces analytical and engineering principles to develop exchange systems. Students must become familiar with literature on applied mechanism design; and understand behavioral aspects of auction systems, matching, assignment and transportation problems, and information markets. Also introduces methods for testbedding systems using experimental economics and statistical design. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: A course in linear and nonlinear optimization along with a course in linear algebra.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses
ECON 715: Macroeconomic Theory I. 3 credits.
Covers classical, neoclassical, Keynesian, and post-Keynesian theories of income and employment determination; theories of inflation and growth; and demand for money and implications for effectiveness of monetary vs. fiscal policy. Notes: Non-Degree students are permitted to enroll based on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: Admission to doctoral program in economics, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 799: Master's Thesis. 1-6 credits.
Research on approved thesis topic under direction of thesis committee.
Notes: Students must register for a minimum of three credit hours in their first semester of 799 and maintain continuous enrollment in 799 while writing and submitting a thesis. A maximum of 6 credits of 799 may be applied to the degree. Offered by Economics (p. 345). May be repeated within the degree.

Recommended Prerequisite: Admission to MA economics program and permission of thesis advisor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

ECON 811: Microeconomic Theory I. 3 credits.
Theory and applications of behavior of consumers, firms, and resource suppliers. Partial equilibrium analysis of various market structures and introduction to intertemporal choice and capital theory. Review and analysis of classic works in microeconomic theory. Notes: Non-Degree students are permitted to enroll based on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: Admission to doctoral program in economics, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 812: Microeconomic Theory II. 3 credits.
Examines nature of firm; theory of supply; and production functions, factor pricing, and supplies. Introduces microeconomic foundations of theories of public finance and public choice. Notes: Non-Degree students are permitted to enroll based on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 811.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 816: Macroeconomic Theory II. 3 credits.
Aggregate economic activity and price levels with emphasis on dynamic models. Notes: Non-Degree students are permitted to enroll based on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 715 and 811 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 817: Monetary Theory and Policy. 3 credits.
Theory of mechanisms through which central banking affects economic activity and prices. Analyzes demand for money and its relationship to economic activity. Develops monetary theory with emphasis on current theories and controversies in the field. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 615 or 715 and 535 or 637, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 820: History of Economic Thought. 3 credits.
Explores major figures in history of economic thought and tools of analysis they created. Emphasizes classical, neoclassical, and Keynesian theories. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 615 and 715 and 535 or 637, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 821: History of Economic Thought II. 3 credits.
Covers development of economic analysis from marginal revolution of 1877 to present. Emphasizes development of neoclassical economic theory. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 811.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECON 823: Topics in Economic History. 3 credits.
Offers economic analysis of various historical epochs including Industrial Revolution, evolution of political reform, rise of unions, and growth of
government. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 and 615, or ECON 715 and 811; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 825: Political Economy and Public Policy I.** 3 credits.
Covers economic process of public policy formulation and implementation; and economic behavior of principals in policy making and execution. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 826: Political Economy and Public Policy II.** 3 credits.
Specific issues related to political economy of public policy, including privatization, political economy of deficit spending, regulation and deregulation, and economics of rent seeking. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 827: Economic Philosophy.** 3 credits.
Analyzes philosophical organization, including interrelations between economics and legal and political institutions; philosophical presuppositions of capitalist economy under constitutional democracy; alternative presuppositions for non-capitalist economies; and critical evaluation of history of ideas in social and moral philosophy. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 828: Constitutional Economics.** 3 credits.
Analyzes existing and proposed elements of economic constitution. Emphasizes fiscal, monetary, transfer, and regulatory powers of government and constitutional limits on such powers, especially in the United States. Includes analysis of proposed changes in limits. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 829: Economics of Institutions.** 3 credits.
Analyzes framework of rules and institutions for economic activities and transactions. Includes emergence and working properties of different institutions, and classical and contemporary approaches to economic theory of institutions. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 830: Mathematical Economics I.** 3 credits.
Includes algebra and multivariate calculus applied to advanced economic problems. Also covers unconstrained and constrained optimization, formal models of market equilibrium, and models of economic dynamics in continuous and/or discrete time. Notes: Non-degree students are permitted to enroll on space availability determined one week before the first day of classes AND on meeting the prerequisites AND with permission of instructor. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** Admission to doctoral program in economics, or ECON 306 and 311, and MATH 113, MATH 114, and familiarity with elementary differential calculus (univariate and multivariate), elementary integration (univariate), basic matrix/linear algebra (addition, multiplication, inversion), univariate optimization, and logarithms; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 831: Mathematical Economics II.** 3 credits.
Develops the foundations of choice, price, and general equilibrium theory. Topics include choice, preference and utility; consumer demand; competitive firms; general equilibrium; and social choice and welfare.
Economics (ECON)

Special attention is paid to uncertainty and dynamic choice. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** Admission to doctoral program in economics, or ECON 306 and 311, and MATH 113; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 838:** *Econometrics II.* 3 credits.
Explores econometric models and simultaneous equation systems. Includes identifying parameters and least squares bias, alternative estimation methods, and block recursive systems. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 637 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 839:** *Constitutional Economics II.* 3 credits.
Uses economic analysis and methods to explore more deeply than in Constitutional Economics I specific issues in Constitutional Economics. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 628.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 840:** *Law and Economics I.* 3 credits.
Uses economics to analyze U.S. Common-law system, evaluating efficiency and logic of evolution. Notes: No prior knowledge of law required. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 841:** *Law and Economics II.* 3 credits.
Explores empirical analyses of law of property, torts, crime, and family. Also looks at law's effects on freedom and economic growth. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811, and ECON 535 or 637; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 843:** *Smithian Political Economy I.* 3 credits.
Explores the moral philosophy of Adam Smith, with a focus on The Theory of Moral Sentiments, which is studied cover-to-cover in "Great Books" fashion. Offered by Economics (p. 345). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 844:** *Industrial Organization and Public Policy I.* 3 credits.
Structure of American industry and underlying determinants. Includes structure and conduct on industrial performance in light of theory and empirical evidence; and rational antitrust policy and analysis of impact on structure and performance. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 845:** *Smithian Political Economy II.* 3 credits.
Explores the political economy of Adam Smith, with a focus on The Wealth of Nations, which is studied cover-to-cover in "Great Books" fashion. Offered by Economics (p. 345). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Recommended Prerequisite: ECON 844, and ECON 535 or 637; or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECON 849: Public Finance. 3 credits. Theoretical and institutional analysis of government expenditure, taxation, debt management, and intergovernmental fiscal relations. Includes allocative and distributional effects of alternative tax and subsidy techniques, principles of benefit cost, and cost-effectiveness analysis for government decisions. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 611 or 811 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECON 852: Public Choice I. 3 credits. Applies economic theory and methodology to study of nonmarket decision making. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 611 or 811 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECON 854: Public Choice II. 3 credits. Applies public choice approach to study such topics as causes and consequences of governmental growth, behavior of public bureaucracies, and economic reasoning behind constitutional limitations on size and growth of government. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 852 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECON 856: Non-Market Decision Making. 3 credits. Explores the economics of non-market decision making. Considers the application of rational choice theory to decision making by a variety of persons who are neither traditional buyers nor sellers in a variety of contexts that are not traditional markets. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 852 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECON 856: Economic Development. 3 credits. Explores forces contributing to or retarding economic progress in developing countries. Includes role of foreign trade, economic integration, foreign investment, multinational corporations, and technological transfers. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 611 and 615, or 715 and 811, or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECON 869: International Trade and Policy. 3 credits. Studies classical, neoclassical, and modern theories of international trade; theory and practice of world trade models such as project LINK; foreign investment and economic growth, tariffs and nontariff barriers, and economic integration; and recent developments, with emphasis on natural resources. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 611 or 811 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

ECON 871: International Monetary Economics. 3 credits. Examines international adjustment mechanism, price and income effects, controls, and monetarist approach; development of international monetary system; demand for international reserves; capital movements; and role of International Monetary Fund. Offered by Economics (p. 345). May not be repeated for credit.

Recommended Prerequisite: ECON 615 or 715 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 880: Theory of the Market Process I. 3 credits.**
Examines theory developed by Menger, Mises, Hayek, and others of the Austrian School, and compares with other popular theories. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 881: Theory of Market Process II. 3 credits.**
Continuation of ECON 880. Explores the market-process approach to analyzing capital accumulation and growth; money and credit institutions; inflation and unemployment; and industrial fluctuations. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 880, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 885: Experimental Economics. 3 credits.**
Designed for graduate students to learn how experimental methods can be used to inform economic research and practice. Students expected to have working understanding of basic economic concepts and multivariate calculus. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 611 or 811 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 886: Experimental Economics II. 3 credits.**
Research in experimental design. Topics represent basic tools to build, test, and implement exchange mechanisms in an applied setting. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 885 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 895: Special Topics in Economics. 3 credits.**
Topics vary according to interests of instructor. Emphasizes new areas of discipline. Offered by Economics (p. 345). May be repeated within the term.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 896: Directed Reading and Research. 1-9 credits.**
Independent reading and research paper on a topic agreed on by student and faculty member. Offered by Economics (p. 345). May be repeated within the term.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**ECON 950: Seminar in Public Finance. 3 credits.**
Important public finance issues treated in seminar format. Offered by Economics (p. 345). May not be repeated for credit.

**Recommended Prerequisite:** ECON 849 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 985: Workshop in Experimental Economics. 3 credits.**
Designed for graduate students who have taken Experimental Economics and Economic Systems Design and are applying experimental methods to their own or collaborative research projects. Offered by Economics (p. 345). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ECON 886.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECON 998: Doctoral Dissertation Proposal Research. 1-9 credits.**
Research on prospective dissertation topic. Notes: For students who have completed course work but have not yet advanced to candidacy. Offered by Economics (p. 345). May be repeated within the degree.

**Recommended Prerequisite:** Admission to PhD economics program, and completed at least 48 credits of coursework, and passed required doctoral exams, and permission of dissertation advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type**: Dissertation

**Grading**: This course is graded on the Undergraduate Regular scale. (p. 84)

**EDUC 301**: *Educating Diverse and Exceptional Learners*. 3 credits.
Introduces educational issues. Explores psychological, sociological, educational, and physical aspects of diverse populations in today’s schools for early and middle education. Emphasizes litigation and legislation pertaining to education of diverse populations. Notes: Requires school-based field experience during course. Offered by Graduate School of Education (p. 162). Limited to two attempts.

**Schedule Type**: Lecture

**Grading**: This course is graded on the Undergraduate Regular scale. (p. 84)

**EDUC 302**: *Human Growth and Development*. 3 credits.
Introduces educational issues. Examines human development through life span with special emphasis on cognitive, language, physical, social, and emotional development of children. Emphasizes contemporary theories of human development and their relevance to educational practice. Notes: Requires school-based field experience. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type**: Lecture

**Grading**: This course is graded on the Undergraduate Regular scale. (p. 84)

**EDUC 300**: *Introduction to Teaching*. 3 credits.
Introduction to educational issues; not applicable in graduate-level teacher education programs. Examines roles of teacher, nature of American schools, and potential contributions of students. Notes: Requires school-based field experience during course. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type**: Lecture

**Grading**:

**EDUC 200**: *Introduction to Education: Teaching, Learning and Schools*. 3 credits.
Introduces educational issues related to learning, schooling and teaching. Examines roles of teachers and nature of American schools and learners. Requires 15 hours of school-based field experience during the course. Offered by Graduate School of Education (p. 162). Limited to two attempts.

**Mason Core**: Social/Behavioral Sciences (p. 142)

**Schedule Type**: Lecture

**Grading**: This course is graded on the Undergraduate Regular scale. (p. 84)

**EDUC 203**: *Disability in American Culture*. 3 credits.
Examines disability, past and present, in American culture through changes in historical, political, legal and societal responses to people with disabilities. Analyses the disability experience through social and behavioral science perspectives, including diversity, bioethical and human rights conceptualizations/constructs of disability. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Mason Core**: Social/Behavioral Sciences (p. 142)

**Schedule Type**: Lecture

**Grading**: This course is graded on the Undergraduate Regular scale. (p. 84)

**EDUC 422**: *Foundations of Secondary Education*. 3 credits.
Analyzes philosophical assumptions, curriculum issues, learning theories, and history associated with current teaching styles. Emphasizes applications to all disciplines taught in secondary schools. Examines educational trends and issues. Notes: 15 hours school-based field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Recommended Prerequisite**: Admission to the secondary Education Program.

**Registration Restrictions**: Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - Biology 6-12, Secondary Ed - Chemistry 6-12, Secondary Ed - Mathematic 6-12, Secondary Ed - English 6-12, Secondary Ed - Physics 6-12 or Secnd Ed - Earth Science 6-12.
Ed - Mathematical 6-12, Secondary Ed - English 6-12, Secondary Ed - Physics 6-12 or Secnd Ed - Earth Science 6-12.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

**EDUC 511:** *Child and Adolescent Development in Global Contexts.* 3 credits. Provides an introduction to teaching culturally & linguistically diverse and exceptional learners, includes analysis of human growth and development, an overview of psychology, and introduction to using technology across the curriculum. Requires 20 hours of PK-12 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a concentration in Tchng Clt Lng Div Exctpl Lrn.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Graduate Special scale. (p. 84)

**EDUC 512:** *Teaching Elementary Social Studies in International Schools.* 3 credits. Builds expertise in methods, including experiential and student-centered learning and developing comprehensive lessons plans to enhance teaching social studies in international PK-6 classrooms. Exposes prospective teachers to critical issues and concerns in teaching social studies in the global classroom. Requires 20 hours of PK-6 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: EDUC 511B-.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Graduate Special scale. (p. 84)

**EDUC 514:** *Teaching Elementary Science in International Schools.* 3 credits. Covers theory and practices of effective teaching of PK-6 science in international schools. Uses laboratory and discovery techniques to design essential science components and integrate them with other disciplines. Introduces design and implementation of activities for developing concepts solving problems, and strengthening thinking skills in PK-6 science. Requires 20 hours of PK-6 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: EDUC 511B-, 512B-, 513B-, 537B- and EDRD 515B-.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Graduate Special scale. (p. 84)

**EDUC 516:** *Language Across the Elementary International School Curriculum.* 3 credits. Introduces current methods of teaching integrated language arts in elementary school settings (PK-6). Includes language and literacy development, second language acquisition, reading and writing in content areas, and children's literature. International focus considers needs of second-language learners in regular classroom settings. Requires 20 hours of PK-6 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: EDUC 511B-, 512B-, 513B-, 537B-.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDUC 518: Military-Connected Youth.** 1 credit.
Provides knowledge and understanding about working with military-connected youth and their families. Emphasizes knowledge of the military culture, strategies for easing school transitions for military-connected youth, and resources for supporting military-connected youth and their families in schools and communities. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 520: Elementary Curriculum, Instruction, and Assessment in International Schools.** 3 credits.
Addresses interrelationship of instruction, curriculum, and assessment in international schools. Includes review of research and effective practice. Requires 20 hours of PK-6 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: EDUC 511B, 512B, 513B, 537B and EDRD 515B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDUC 522: Foundations of Secondary Education.** 3 credits.
Analyzes philosophical assumptions, curriculum issues, learning theories, and history associated with current teaching styles. Emphasizes applications to all disciplines taught in secondary schools. Examines current educational trends and issues in relation to sociology of secondary school settings. Notes: 15 hours school-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 537: Introduction to Culturally & Linguistically Diverse Learners.** 3 credits.
Examines the ways intersections of race, ethnicity, language, socioeconomic status, gender, sexual orientation, and ability affect equity for PK-12 culturally and linguistically diverse (CLD) learners. Invites educators to interrogate ways that personal cultural identity and biases influence instructional and assessment practices with CLD learners and relationships with families. Requires 20 hours of PK-12 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDUC 542: Foundations of Education.** 3 credits.
Examines the historical, philosophical, and sociological foundations of education as they relate to elementary schools, with a particular emphasis on teaching a culturally diverse population. Students will develop an understanding of the relationship between society and education. School-based field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Elementary Education licensure program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 543: Children, Family, Culture, and Schools, 4-12 Year Olds.** 3 credits.
Examines child and family development and ways children, families, schools, and communities interrelate. Links children's developing physical, social, emotional, and cognitive abilities to planning curriculum and developing instructional strategies. Notes: Requires school-based field experience. Offered by Graduate School of Education (p. 162). May not be repeated for credit.
Recommended Prerequisite: Admission to the Elementary Education licensure program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 547: Scientific Inquiry and the Nature of Science. 3 credits.
Incorporates understanding about scientific knowledge in K-12 classrooms. Builds fundamental knowledge of scientific inquiry and the nature of scientific knowledge and skills to weave this knowledge explicitly in curriculum. Focuses on developing inquiry-based lessons for students to investigate science and assessing student understanding of science and the nature of science. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 592: Effective Collaboration for Teaching Diverse Learners in Secondary Social Studies. 3 credits.
Provides history-social studies candidates in secondary education with knowledge and skills necessary to meet the needs of diverse learners in the history-social studies classroom. Emphasizes teacher collaboration between general and special education teachers as an authentic model of practice. Notes: Taught concurrently and in close proximity with special education faculty teaching EDSE 662 to emphasize collaboration between special education and general education teachers. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 595: Perspectives on Exceptl Tching. 3 credits.
Provides an opportunity for pre-service and in-service teachers to interact with young people and teachers in a range of school settings, exploring and documenting their points of view on teaching using a range of methods and visual and technology-oriented media and interview procedures. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 597: Special Topics in Education. 1-6 credits.
Provides advanced study on selected topic or emerging issue in American or international education. Notes: May be repeated for credit with GSED permission. Offered by Graduate School of Education (p. 162). May be repeated within the term.

Recommended Prerequisite: Admission to program in Graduate School of Education.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 598: Directed Reading, Research, and Individual Projects. 1-6 credits.
Presents various subjects and projects, principally by directed study, discussion, research, and participation under supervision of graduate faculty member. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: Admission to degree program, and permission of dean.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**EDUC 606: Education and Culture.** 3 credits.
Uses cultural inquiry process (CIP) and web site to acquire cultural, social, and language-related perspectives on educational processes; and teaches skills to analyze educational settings and expand strategies to address puzzlements in students’ own practice. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisites:** EDUC 612\(^B\) and 613\(^B\).
\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in ASTL-Alternative Education, ASTL-Early Childhood Educ, Gifted Child Education, ASTL - History, ASTL-Instructional Technology, ASTL - Literacy/Reading, ASTL - Mathematics, ASTL-NBPTS Preparation Core, ASTL - Science, Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDUC 608: Teacher Leadership for Professional Learning.** 3 credits.
Examines teacher leadership as a vehicle for professional growth and change. Focuses on the role of teacher learning in strengthening school capacity and offers teachers a foundation for enacting teacher leadership in their own school contexts via mentoring, collaboration, and related professional development endeavors. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 612: Inquiry into Practice.** 2 credits.
Provides experience using research skills to foster systematic and thoughtful inquiry into classroom practice. Explores relevant classroom practice issues through critical writing, action, and research. Emphasizes cultural diversity and gender issues in research. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in ASTL-Alternative Education, ASTL-Early Childhood Educ, ASTL-Instructional Technology, ASTL - Literacy/Reading, ASTL - Mathematics, ASTL-NBPTS Preparation Core, ASTL - Science, ASTL-Teacher Leadership, Curriculum and Instruction or Dsgning Dgtl Lrning in Schools.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDUC 613: How Students Learn.** 3 credits.
Advanced course in study of learning based on research and theory from different disciplines. Focuses on increasing students’ learning through study of different learning systems, and understanding each learner in context of learning process itself. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisite:** EDUC 612\(^B\).
\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.


Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDUC 614: Designing and Assessing Teaching and Learning.** 2 credits.
Explores design and development of curricular, pedagogical, and assessment strategies responsive to needs and interests of students. Investigates factors that affect teaching and learning, and examines multiple ways of knowing that teachers bring to classrooms. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisites:** EDUC 612\(^B\) and 613\(^B\).
\(^B\) May be taken concurrently.
\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDUC 615: Educational Change. 2 credits.
Explores influences on educational change at classroom, school, community, state, and national levels. Investigates implications of factors and influences that affect educational change. Analyzes influences and factors, and involves students in reflecting on their own experiences. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDUC 612B-, 613B-, 614B- and 606*B-.
May be taken concurrently.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in ASTL-Alternative Education, ASTL-Early Childhood Edu, Gifted Child Education, ASTL - History, ASTL-Instructional Technology, ASTL - Literacy/Reading, ASTL - Mathematics, ASTL-NBPTS Preparation Core, ASTL - Science or Curriculum and Instruction.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDUC 621: Teaching and Learning in the International Baccalaureate Program. 3 credits.
Focuses on principles and practices of the International Baccalaureate, organized around four areas of inquiry: curriculum processes, teaching & learning, assessment, and professional learning. Requires 20 hours of PK-12 classroom fieldwork. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a concentration in Tchng Clt Lng Div Excp1 Lrn.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDUC 622: Curriculum Development across IB Programs. 3 credits.
Explores the development of practical knowledge about the design and structure of the IB programs' curricula. Provides a foundation for understanding how the programs are implemented and how student learning developed within them is assessed. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Corequisite: EDUC 621

Registration Restrictions:
Enrollment is limited to students with a concentration in ASTL- Adv Intl Baccalaureate or Tchng Clt Lng Div Excp1 Lrn.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDUC 623: Models and Strategies for Teaching and Learning in IB Schools. 3 credits.
Focuses on the development of the capacity of teachers in IB schools to adopt appropriate teaching strategies and techniques instrumental in ensuring program learning outcomes are achieved. Furthermore, participants develop a deep understanding of the critical relationship between teaching and learning. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDUC 621B- and 622B-.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree, Undergraduate or Washington Consortium level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDUC 624: Assessment and Learning in IB Schools. 3 credits.
Explores the essential role of assessment in teaching IB learners. Addresses formative and summative assessment practices as an integral part of the IB curriculum as well as the use of assessment for differentiation and planning. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Corequisite: EDUC 623

Registration Restrictions:
Required Prerequisites: EDUC 621B- and 622B-.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
**EDUC 626: Inquiry into Action: IB Teachers, Learners, and Schools.** 3 credits.
Uses the action research and qualitative process to help educational practitioners plan and complete an action research study related to IB learners, teachers, or schools. Furthermore, the course examines the social, cultural, and ethical issues of conducting research with students. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**EDUC 627: Contemporary Issues and Trends in IB.** 3 credits.
Focuses on current IB research, trends, and issues as well as international, national, and state/provincial legislation concerning schools and the potential impact on IB schools. Participants are prepared as leaders and advocates for IB programs and their students. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**EDUC 653: Technology and Learning.** 3 credits.
Develops technological knowledge and skills to support teaching and learning and to sustain and enhance learning communities. Teachers explore and critique the possibilities and concerns of using technology in learning environments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**EDUC 647:** Critical Reflective Practice.
Engages students in a learning community of teachers to develop skills of critical reflection on professional practice. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**EDUC 651:** Critical Theories and Pedagogies.
Explores critical theories and pedagogies experientially, including alternative assessments that address educational equity and access, power, and approaches for deepening our practice as citizens in a democracy. Offered by Graduate School of Education (p. 162). May not be repeated for credit.
Registration Restrictions:
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to students with a concentration in Transformative Teaching.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Students in the GMU Korea campus may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 655: Teacher Research Methods. 3 credits.
Introduces teacher research methods and situates them in relation to other research approaches. Emphasizes the understanding and use of various research methods as innovative approaches to teaching and learning. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 651 and EDUC 653.

Registration Restrictions:
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to students with a concentration in Transformative Teaching.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Students in the GMU Korea campus may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 657: Teaching for Democracy and Social Justice. 3 credits.
Focuses on the research that supports teachers to create democratic classroom practices and to support PK-12 students in exercising civic rights. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 651 and EDUC 653.

Registration Restrictions:
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to students with a concentration in Transformative Teaching.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Students in the GMU Korea campus may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 659: Teacher Leadership. 1.5 credit.
Engages learners in data gathering exercises toward articulating a leadership agenda in the context of PK-12 educational environments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission into the MEd Curriculum and Instruction concentration in Teacher Inquiry, Development and Empowerment for Social Justice program (TIDES) cohort. Completion of EDUC 655 and EDUC 657.

Registration Restrictions:
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to students with a concentration in Transformative Teaching.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Students in the GMU Korea campus may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 661: Teacher Empowerment and Policy. 1.5 credit.
Provides advanced study on a selected topic or emerging issue in American or international education with particular attention to developing policy solutions. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 655 and EDUC 657.

Registration Restrictions:
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to students with a concentration in Transformative Teaching.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Students in the GMU Korea campus may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 663: Culturally Relevant Pedagogy. 3 credits.
Offers opportunity to view how language and culture shape realities, including perceptions of children as learners. Explores cultural constraints and transformative possibilities embedded within cultures. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 659.
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Students in the GMU Korea campus may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 665: Teacher Inquiry in Practice I.** 3 credits.
Builds further understanding of teacher research as teachers form and frame salient questions, examine the existing literature related to their questions, and take actions to improve teaching and learning. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDUC 659.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to students with a concentration in Transformative Teaching.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Students in the GMU Korea campus may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 667: Teacher Inquiry in Practice II.** 3 credits.
Builds on the teacher research project begun in Teacher Inquiry in Practice I as teachers continue to address their pedagogical questions, take actions to improve teaching and learning, gather, analyze and interpret multiple forms of data, and share their experience in communities of practice. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDUC 663 and EDUC 665.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to students with a concentration in Transformative Teaching.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Students in the GMU Korea campus may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 669: Teaching and Learning in Practice.** 3 credits.
Admission into the MEd Curriculum and Instruction concentration in Transformative Teaching program. Completion of the EDUC 663 and EDUC 665. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDUC 663 and EDUC 665.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate level students.

Enrollment is limited to students with a concentration in Transformative Teaching.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Students in the GMU Korea campus may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 672: Human Development and Learning: Secondary Education.** 3 credits.
Explores developmental issues associated with middle and high school students, and theories that provide basis for understanding learning process. Addresses implications for designing instruction and curriculum. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDUC 522 and advanced methods course.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 674: Assessing Learning and Teaching in the Secondary School Classroom.** 3 credits.
Supports beginning teachers’ development and design of assessment practices for promoting student learning. Focuses on individual differences and classroom, teacher, school, and cultural factors that impact assessment; different types and purposes of assessment; and relationship of assessment to national and state standards. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDUC 522 and advanced methods course.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Curriculum and Instruction or Secondary Education Licensure.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 675: Research in Secondary Education. 3 credits.  
Links evidence of student learning to make informed instructional decisions. Engages students in critiquing various research paradigms, reviewing literature, and systematically collecting and interpreting evidence to improve practice. Facilitates completion of the M.Ed. exit requirement. Notes: All students enrolled in this course must be working daily in or have access to a classroom setting. The M.Ed. program exit requirement is completed in EDUC 675. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:  
Required Prerequisite: EDCI 790.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Curriculum and Instruction or Secondary Education Licensure.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses
EDUC 797: Advanced Topics in Education. 1-6 credits.  
Advanced study of selected topics in education for students preparing for doctoral studies or who have been admitted to the PhD program in education. Notes: May be repeated for credit with GSED approval. Offered by Graduate School of Education (p. 162). May be repeated within the term.

Registration Restrictions:  
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

800 Level Courses
EDUC 800: Ways of Knowing. 3 credits.  
Provides understanding of characteristic ways of knowing in various liberal arts disciplines while examining subject matter, scope, key concepts, principles, methods, and theories. Analyzes philosophical traditions underlying educational practice and research. Notes: Required course during first spring semester of study in the program. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the PhD program.

Registration Restrictions:  
Enrollment is limited to students with a major in Education.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 802: Leadership Seminar. 3 credits.  
Intensive study of leadership, emphasizing decision and change processes, and assessment and development of leadership skills. Notes: Required course during first semester of study in the program. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:  
Enrollment is limited to students with a major in Education.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 803: Teacher Preparation and Professional Development. 3 credits.  
Explores research and current recommended practices related to teacher preparation and professional development. Provides opportunity for practical application with preservice or inservice teachers. Offered by Graduate School of Education (p. 162). May not be repeated for credit. Equivalent to ECED 803.

Recommended Prerequisite: Approval of instructor and acceptance to PhD program.

Registration Restrictions:  
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 815: Research Inquiries in International Education. 3 credits.  
Focuses on the intersection of international education and research methodologies in educational settings. Students will delve into the construction, implementation, and impact of research in international settings or with an internationally-minded perspective. Through critical inquiry into practice, the course offers students the opportunity to develop more sophisticated understandings of the research process in international education settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDCI 880 or permission of instructor.

Registration Restrictions:  
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 845: Multilingual Learners With Diverse Educational Needs. 3 credits.  
Examines examine issues surrounding identification, assessment, and instruction of multilingual learners with diverse educational needs.
Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD Program in Education or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 850: The Study of Teaching.** 3 credits.
Explores the history and development of the search for teaching effectiveness. The course will trace the various definitions of effectiveness and the methods created to assess effectiveness. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRS 810.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 851: Research on Teacher Education.** 3 credits.
Explores the history and development of the search for effectiveness in the preparation of preservice teachers and the continuing professional development of practicing teachers. The students will examine the substance and gaps in the study of the education of educators. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRS 810.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 852: Technology and Teacher Development.** 3 credits.
Investigates the latest research and issues related to technology integration in teacher education; includes research supporting the incorporation of technology in staff development for in-service K-12 educators, as well as preservice university coursework. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRS 810.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 853: World Perspectives of Teacher Education.** 3 credits.
Focuses on the cross-cultural analysis of current U.S. and internationally based teacher preparation and continuing professional development pedagogical models, policy reforms, and their historical contexts. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to doctoral program.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 854: Working in Schools: Spanning Boundaries/Expanding Roles.** 3 credits.
Prepares future teacher educators and professional developers for their work in K-12 settings. Examines the principles of clinical field experiences, the foundations of school-university partnerships, and the roles/relationships of all stakeholders engaged in field-based teacher preparation and teacher professional development. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRS 810 (may also be taken concurrently).

**Registration Restrictions:**
Enrollment limited to students in the E1-PHD-EDHD or E1-PHD-EDUC programs.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 860: STEM Education Research and Policy.** 3 credits.
Examines research on science, technology, engineering, and mathematics (STEM) education issues and education policy issues including the rationale for STEM education, STEM education policy, models of STEM schools in K-12 education, STEM education leadership, informal STEM education, STEM curriculum and instruction, and research in STEM education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRS 810.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Examines public policy decision-making in education at local, state, and national levels, and its impact on education institutions, students, and public. Focuses on theories and methodological approaches, and resolution of competing policy arguments in political arena. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to doctoral program.

**Registration Restrictions:**
Enrollment is limited to students with a major in Education.

**Schedule Type:** Lecture

**Grading:**
EDUC 871: Advanced Policy Issues in Education. 3 credits.
In-depth analysis of selected education policy issues. Focuses on issue interactions and education-related policy actions by different levels of government. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 870 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 872: Social Science Research and Education Policy. 3 credits.
Focuses on research base used to support education policy actions. Focuses on analyzing strength of this research. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDRS 810,811, and 812 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 873: Education Policy: Comparative and International Perspectives. 3 credits.
Using interdisciplinary approach, addresses education policy issues that transcend national boundaries and have implications for educators in fostering social justice and global awareness. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 874: The Achievement Gap. 3 credits.
Focuses on achievement gap in schools. Students research and analyze gaps in student achievement related to race and ethnicity, limited English proficiency, family background, gender, poverty, and ableism, and practices designed to close the gap. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 875: Contemporary and Emerging Issues in Education Policy. 3 credits.
Focuses on identifying and analyzing factors that promote new initiatives in education policy agenda. Attention given to nontraditional sources of education policy initiatives. Notes: Must be admitted to PhD program. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 870 (concurrent enrollment is also permitted) and admission to the PhD program.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 876: Teacher Development and Education Policy. 3 credits.
Focuses on the impact of policy actions at the local, state, and national levels on teacher preparation and continuing professional development. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 870 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 877: Teacher Policy in Historic Perspective. 3 credits.
Examines the history of policies pertaining to public school teachers in the United States. Evaluate and engage current policy debates by putting the past and present into conversation. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to The PhD in Education program, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDUC 878: Intercultural Competence: Theory and Research Application to International Education. 3 credits.
Explores and examines intercultural competence theory and research as a teaching and learning framework in international education. Emphasizes the comparison of alternative models of intercultural competence development, research paradigms using intercultural competence theory in international education, and empirical studies that examine and explore the use of intercultural competence theory in education. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 880.

Registration Restrictions:
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 879: Language and Second Language Acquisition Research in International Education.** 3 credits.
Examines the theoretical and historical role of language in international education, with special emphasis on the foundations and variables of second language acquisition. Focuses the role of language in cross-cultural and international contexts, the application of language acquisition theories and empirical studies globally. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDUC 880.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 880: Introduction to International Education.** 3 credits.
Using interdisciplinary approach, addresses education policy issues that transcend national boundaries and have implications for educators in fostering social justice and global awareness. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students in a Doctor of Philosophy degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 881: Seminar in Bilingual Education: Policy.** 3 credits.
Examines historical development of education for language minority students in United States, including federal and state legislation and court decisions. Explores policy issues regarding administrative program models, instructional approaches, curricular reform, and assessment policies for language minority students developed in response to legal mandates, legislative decisions, and school reform movement. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 882: Second Language Acquisition: Theory, Research, and Practice.** 3 credits.
Examines the theoretical foundations of second language acquisition with focus on linguistic, anthropological, sociological, psychological, and educational research through theory and practice. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD in Education program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 883: Seminar in Sociocultural Theory.** 3 credits.
Explores and analyzes the theoretical contributions of sociocultural theory. Focuses on the growing body of contemporary research on literacy, equity in education and emancipatory teaching for diverse students. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to the PhD in Education program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 885: History of Education in the United States.** 3 credits.
Examines the history of education in the United States and explores the social, political, cultural, and economic forces that have shaped reform initiatives. Uses history to engage questions around citizenship, equality, and democracy. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD in Education program, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Explores a broad range of reform initiatives shaping public education and examines the ways politics infuses education policy. Investigates the disciplinary and methodological frameworks scholars have used to study school reform. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD in Education program, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 887: Neighborhood, Community, Education Policy.** 3 credits. Explores the intersection of historical, social, political, and economic policies and conditions and communities in the US. Focuses on understanding trends in the formation of neighborhoods and the development of American cities, schools, and communities. Examines the politics and policies of selected neighborhoods and communities through developing community development profiles and proposals. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to PhD in Education program or with permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 890: Doctoral Internship in Education.** 1-6 credits. Interns work with appropriate staff member in cooperating school, school system, or other educational institution, agency, or setting. Notes: Requires 100 hours of on-site internship completed over at least a five-week period. Up to 6 credits of EDUC 890 may be applied toward PhD degree requirements. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD program and prior approval of the advisor and PhD director.

**Registration Restrictions:**
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDUC 892: Social Justice and Equity in International Education.** 3 credits. Examines ideological, cultural, and systemic structural inequities in various educational settings at national and international levels. Focuses on educational practices that promote equity and social change throughout the world. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDUC 880.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDUC 893: Seminar in Educational Anthropology.** 3 credits. Examines theories and research from educational anthropology and educational sociology to clarify and address contemporary educational issues and concerns. Focuses on U.S. public schools, with comparative materials from other educational settings and societies. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD program and prior approval of the advisor and PhD director.

**Registration Restrictions:**
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)
900 Level Courses

EDUC 994: Advanced Internship in Education. 3 credits.
Internship in setting related to student's major area of study. Requires minimum of 100 hours completed over at least a five-week period. Each intern works with appropriate staff member in cooperating school, school system, or other educational institution or agency. Notes: Internship must be in setting that differs from regular employment. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the PhD program and prior approval of advisor and PhD director.

Registration Restrictions:
Enrollment limited to students with a major in Education.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDUC 998: Doctoral Dissertation Proposal. 1-6 credits.
Work on research proposal that forms basis for doctoral dissertation, under guidance of dissertation chair and doctoral committee. Notes: May be repeated, but no more than 6 credits of EDUC 998 may satisfy doctoral degree requirements. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Admission to candidacy in the PhD program, successful completion of the doctoral qualifying exam, and EDRS 810, 811, and 812 or their equivalents.

Registration Restrictions:
Enrollment limited to students with a major in Education.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDUC 999: Doctoral Dissertation Research. 1-9 credits.
Provides continued faculty assistance on individual basis to complete dissertation planned in EDUC 998 and initiate new projects. Notes: Requires successful completion of EDUC 998 and faculty approval of proposal. Offered by Graduate School of Education (p. 162). May be repeated within the degree.

Recommended Prerequisite: EDUC 998 and faculty approval of proposal.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to students with a major in Education.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Education Instructional Technology (EDIT)

400 Level Courses

EDIT 401: Introduction to Learning Technologies. 3 credits.
Provides an overview of the field of learning technologies, including its history, theoretical foundations, design processes, and technologies. Illustrates how learning technologies can be applied in a variety of teaching and training contexts including e-learning, educational software, instructional design, corporate training, and curriculum development. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: Admission to the PhD program and prior approval of advisor and PhD director.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDIT 413: Technology, Society, and the Culture of Learning. 3 credits.
Explores the relationship between technological change and education reform initiatives. Emphasizes the ways in which technological and social changes influence and shape the goals and outcomes of the K-12 educational process. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDUC 300.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDIT 426: Web Accessibility and Design. 3 credits.
Provides instruction for accessible web design using HTML and existing authoring tools. Section 508 web accessibility standards and assistive technologies to access the computer will be explored. Notes: Class may be delivered via distance education. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDUC 300.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

EDIT 504: Introduction to Educational Technology. 3 credits.
Examines uses of and issues in educational technology. Explores curriculum integration of technology, and focuses on learning and using commercially available applications software. Notes: Field experience in public schools will be required during course. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the PhD program and prior approval of advisor and PhD director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Education.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 526: Web Accessibility and Design.** 1-3 credits.
Develops understanding of principles of universal web design. Students apply this understanding by designing and developing accessible web site using web authoring tools. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 563: Teaching with Graphics.** 1 credit.
Explores various graphic programs available for constructing visual images. Addresses draw and paint programs, scanning and editing images, and using visual communication to support K-12 learning. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
EDIT 572: Digital Audio/Video Design and Applications. 1-3 credits.  
Provides basic knowledge of the range of capabilities of available audio and video design applications. Students learn to cultivate effective audio and video design practices for creating instructional products. Offered by Graduate School of Education (p. 162). May be repeated within the term.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 573: Project Management. 1-3 credits.  
Explores project management principles and applications used to manage, plan, and track large-scale, complex instructional design projects. Offered by Graduate School of Education (p. 162). May be repeated within the term.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 574: Social Media and Digital Collaboration Applications. 1-3 credits.  
Provides basic knowledge of the range of capabilities of available social networking, teleconferencing, and collaboration applications. Students learn to integrate the latest information and communication technologies into the creation of instructional products. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 3 credits.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 575: e-Learning Design Applications. 1-3 credits.  
Provides basic knowledge of available applications for creating, delivering, managing and tracking e-learning experiences. Students learn to create instructional products using the latest e-learning design applications. Notes: Content customized to particular software tool presented. Offered by Graduate School of Education (p. 162). May be repeated within the term.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 576: Mobile Learning and Applications. 1-3 credits.  
Explores current best practices and techniques required to deliver effective learning content through mobile devices. Students learn pedagogical approaches to mobile learning as well as investigate various mobile platforms and applications. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 3 credits.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 590: Educational Research in Technology. 3 credits.  
Focuses on developing skills, insights, and understanding basics to performing research in the field of Instructional Design and Technology. Develops expertise in action research methodology, design, and implementation. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

EDIT 601: Instructional Design and Technology (IDT) Portfolio. 1 credit.  
Enables students to create and publish digital portfolio that demonstrates effective and meaningful integration and syntheses of instructional design and technology concepts, principles, and competencies learned across program courses at mid-degree program
point. Notes: To be taken at mid-degree program point with minimum 12 and maximum 15 credits. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Minimum of 12 credits and a maximum of 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 611: Innovations in e-Learning.** 3 credits.
Explores leading-edge learning technologies and their integration into the e-learning design process. Hands-on activities focus on technology planning, selection, implementation, and evaluation utilizing instructional design best practices. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**EDIT 701: Advanced Instructional Design and Technology (IDT) Portfolio.** 1 credit.
Enables students to create and publish a digital portfolio that demonstrates effective and meaningful integration and syntheses of instructional design and technology concepts, principles, and competencies learned across program courses at end-degree program point. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: (EDIT 601B).
B Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 704: Instructional Technology Foundations and Theories of Learning.** 3 credits.
Reviews practical and pedagogical issues related to design and development of technological instruction. Emphasizes investigating instructional design as a field and community of practice, and reviewing core learning theory constructs applicable to design of instructional technology. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 705: Instructional Design.** 3 credits.
Helps students analyze, apply, and evaluate principles of instructional design to develop education and training materials spanning a wide range of knowledge domains and instructional technologies. Focuses on variety of instructional design models, with emphasis on recent contributions from cognitive science and related fields. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Teaching or Training Experience or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 706: Business of Learning Design and Technologies.** 3 credits.
Explores the business issues underlying the selection, implementation and evaluation of technology-based learning interventions. Focuses on developing the skills necessary to improve performance and achieve measurable, positive change that supports an organization's strategic goals. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDIT 705 or instructor permission.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 710: Online Teaching Essentials.** 1 credit.
Explores the essential concepts and skills to effectively teach online courses. Introduces the topics of designing and managing online courses, assessing online students' knowledge and skills, facilitating online student collaboration and communication, and establishing a
supportive online learning community. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 730: Advanced Instructional Design.** 3 credits.
Provides students with the knowledge and skills for designing highly contextualized and engaging problem-solving learning environment using a grounded, theory-based design approach. Emphasizes the design of technology supported learning environments using a variety of pedagogical models. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: EDIT 705B or EDCI 705B.
B Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 732: Analysis and Design of Technology-Based Learning Environments.** 3 credits.
Enables design, implementation, and evaluation of technology-based education and training materials using advanced computer-based authoring tools. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Recommended Prerequisite: EDIT 730 or permission of instructor.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 750: Learning Technologies and Strategies for Innovation.** 3 credits.
Explores formal and non-formal learning technologies, models, theories, and strategies that support enterprise learning and performance. Assesses the potential of learning technologies to innovate the practice of the organization. Note: Should be taken in final year of degree work. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 751: Overview of Learning Analytics and Big Data.** 3 credits.
Explores the tools, technologies and methods for capitalizing on data stored in enterprise-wide information systems to support executive-level learning and performance support decision-making. Focuses on demonstrating the bottom line business value of learning through evidence-based talent needs. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Executive Chief Learning Officer (ECLO) Certificate Program, or permission of advisor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 752: Design and Implementation of Technology-based Learning Environments.** 3 credits.
Students design and produce multimedia/hypermedia applications based on current theory and research in instructional design and cognitive science. Examines user needs, information models, structure, and media selection and uses to inform design and production of final project. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Required Prerequisite: (EDIT 732B).
B Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 760: Blended and Online Teachers and Learners.** 1 credit.
Examines the attributes of teachers and K-12 learners with emphasis on attitudes, behaviors, and adaptations required by blended and online teachers and learners. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDIT 761: Models of Blended and Online Learning.** 2 credits.
Provides opportunities for learners to identify, explore, and evaluate a range of educational models for K-12 blended and online learning. These
EDIT 765: Facilitating K-12 Blended and Online Learning. 2 credits.
Develops expertise in facilitating and moderating blended and online learning to include synchronous and asynchronous environments, community building strategies, questioning strategies, prompting reflection, and facilitating conceptual understanding. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

EDIT 766: Understanding Blended and Online Presence. 2 credits.
Examines strategies to create teacher presence, to establish and express self, to promote learner-learner connections, and to compensate for situations where teacher-learner and learner-learner are separated. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

EDIT 767: Designing K-12 Blended and Online Learning. 3 credits.
Develops frameworks for designing and structuring blended and online learning opportunities and emphasizes course content and learning outcomes, selection of appropriate online models, and organization of online lessons and courses, online learning tools, and assessment and evaluation strategies. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to MED in Curriculum and Instruction Concentration in Blended and Online Learning in Schools.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

EDIT 768: K-12 Online Design I. 1 credit.
Develops frameworks for designing and structuring online learning opportunities and emphasizes course content and learning outcomes, selection of appropriate online models, and organization of online lessons and courses, online learning tools, and assessment and evaluation strategies. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to MED in Curriculum and Instruction Concentration in Blended and Online Learning in Schools.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 769: K-12 Online Design II. 1 credit.
Focuses on the creation of online courses appropriate for K-12 learners and culminates in comprehensive design documents that detail goals, assessments, learning tools, and detailed scripts or documents ready for the production phase. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to MED in Curriculum and Instruction Concentration in Blended and Online Learning in Schools.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 770: Overview of Digital Media. 1-3 credits.
Provides overview of media and technology tools used in teaching, learning and training. Focuses on developing skills necessary to implement digital media approaches using a systematic design process. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 771: Virtual Worlds, Augmented Reality, and Gaming Applications. 1-3 credits.
Provides basic knowledge of available applications and platforms for creating contextually-based learning environments such as immersive virtual worlds, simulated worlds, alternate reality games, and massive multiplayer online role playing games for e-learning. Offered by Graduate School of Education (p. 162). May be repeated within the term.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 772: Designing for Literacy. 3 credits.
Explores 21st century definitions of literacy related to multiple symbolic environments (e.g. visual, numeric, alphabetic). Examines the practice of design that integrates technology to promote literacy competence across media and across PreK-12 abilities and interests. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDIT 780 and EDIT 781.
Recommended Corequisite: EDIT 783.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

EDIT 783: Designing for Problem Solving. 3 credits. Examines problem solving as an educational goal, as a cognitive process, and as a series of strategies and habits of mind. Emphasizes and provides practice in the design of digital problem solving environments where technology affords opportunities at the intersection of content learning and problems solving. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDIT 780 and EDIT 781.

Recommended Corequisite: EDIT 782.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

EDIT 784: Designing for Community Participation. 3 credits. Explores the impact of social media, globalization, collaboration, and diversity as they influence, enable, and challenge learners' ability to participate in a variety of community settings. Emphasizes the practice of design strategies to prepare PreK-12 learners to use technology for learning and participating in various and diverse communities. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDIT 782 and EDIT 783.

Recommended Corequisite: EDIT 785.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

EDIT 785: Designing School-Based Digital Learning. 3 credits. Develops frameworks for designing and structuring school-based digital learning. Emphasizes the interaction of design, technology, and content learning to influence teachers' practice in service of PreK-12 learners' abilities to problem solve, use information, participate productively in communities, become knowledgeable, and effectively communicate. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDIT 782 and EDIT 783.

Recommended Corequisite: EDIT 784.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

EDIT 786: Design and Teacher Leadership. 3 credits. Investigates how a design lens intersects with and informs PreK-12 teacher leadership and school-based learning initiatives. Examines a variety of PreK-12 teacher leadership roles and design-based leadership as an integral part of classroom, grade-level, school, and community practice. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: DDLS certificate or completion of MEd in Curriculum and Instruction Concentration: Integration of Technology in Schools or Equivalent.

Recommended Corequisite: EDIT 791.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

EDIT 787: Teacher Leadership and Advocacy for Digital Learning. 3 credits. Enables PreK-12 teacher leaders to support colleagues in the design of classroom and school-based digital learning. Explores advocacy as a strategy to engage colleagues and communities in the design of school-based initiatives related to teaching, learning, and technology. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDIT 782 and EDIT 783

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

EDIT 790: Practicum in Instructional Technology. 1-6 credits. Provides supervised practice in applying knowledge and skills of student's chosen track through placement in appropriate work setting. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions: Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading: This course is graded on the Graduate Special scale. (p. 84)
EDIT 791: Project Development Practicum I. 1-6 credits.
Engages students in the application of design and production process for the solution of learning challenges with particular emphasis on the design and development phase of the design process. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: EDIT 768.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 792: Project Development Practicum II. 1-6 credits.
Facilitates the application of design and production processes to the solution of learning challenges with particular emphasis on the implementation and evaluation phase of the design process. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: EDIT 769.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDIT 797: Advanced Topics in Education. 1-6 credits.
Advanced study of selected topics in education for students preparing for doctoral studies or who have been admitted to the PhD program in education. Notes: May be repeated for credit with CEHD approval. Offered by Graduate School of Education (p. 162). May be repeated within the degree.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

800 Level Courses
EDIT 801: Nature and Process of Design. 3 credits.
Examines multi- and cross-disciplinary perspectives on the nature and process of designing and developing learning technologies. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDIT 803

Registration Restrictions:
Enrollment is limited to Graduate level students.

EDIT 802: Cognition and Technology: A Multidisciplinary Approach. 3 credits.
Examines learning interactions between cognition and technology using multiple disciplinary perspectives including, cognitive science, psychology, neuroscience, education, design theory, instructional design, technology design, anthropology, sociology, information science, philosophy, semiotics, and linguistics. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDIT 801

Registration Restrictions:
Enrollment is limited to students with a major in Education.

EDIT 803: Design-Based Research. 3 credits.
Provides an introduction to systematic cycles of design-based research in education. Applicable to all content domains to explore cycles of research within design, development and implementation of educational and training interventions. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDIT 801

Registration Restrictions:
Enrollment is limited to Graduate level students.

EDIT 891: Design Research Independent Study. 1-9 credits.
Applies multiple design research cycles to an identified research problem to systematically test and improve technology-based product interventions or other curriculum/training strategies or materials in order to develop knowledge related to teaching, learning and/or training in context. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: EDRS 811, EDRS 812, and EDIT 803 or equivalent.

Registration Restrictions:
Enrollment is limited to Graduate level students.

EDIT 895: Emerging Trends in Learning Technologies. 3 credits.
Covers selected emerging trends in learning technologies. Examines ways learning technologies provide infrastructure for creating, managing, and evaluating innovative types of teaching-learning environments.
Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Ph.D. program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Education.
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**Education Leadership (EDLE)**

**400 Level Courses**

**EDLE 412: Schools and the Law.** 3 credits.
Provides an extensive overview of legal and ethical issues in schools. Reviews and analyzes key legal and ethical principles, explores court decisions, and examines federal and state statutes. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** (EDUC 300C or L300).
*C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EDLE 420: Organization and Management of Schools.** 3 credits.
Studies basic issues in leadership, organization, and governance of schools. Explores theories and models of leadership how leaders conceptualize school organization, with an emphasis on distributed leadership in professional environments, systems thinking, and organizational change. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** (EDUC 300C or L300).
*C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

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**600 Level Courses**

**EDLE 610: Leading Schools and Communities.** 3 credits.
Examines critical functions of leadership and organizational management, complex decision making responsibilities of school executives, and constructive relationships between schools and communities. Incorporates historical, ethical, philosophical, and sociological foundations of American education and the impact of organizational structure on reform and student achievement. Practical and academic emphasis on leadership skill development and dispositions. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** EDLE 620B, 690B, and 791IP.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
EDLE 614: Managing Financial and Human Resources. 3 credits.
Explores basic functions in financial and human resource management. Examines legalities, ethics, and politics of resource procurement and allocation. Provides experiences to help students better understand tasks typically performed by school leaders. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDLE 620B, 690B and 791IP.
B- Requires minimum grade of B-.
IP Requires minimum grade of IP.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Education Leadership.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 615: Managing Financial and Human Resources for Independent Schools. 3 credits.
Explores basic functions in financial and human resource management. Examines legalities, ethics, and politics of resource procurement and allocation. Provides experiences to help students better understand tasks typically performed by school leaders in the independent school settings with an overview of public settings. Students learn to apply business principles and financial processes that are the foundation for successful independent school management. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDLE 620B, 690B and 792B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Education Leadership.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 618: Supervision and Evaluation of Instruction. 3 credits.
Provides a theoretical and practical overview of the supervision and evaluation of instruction. Introduces the domains of supervision and inquiry into current issues and best practices in supervision. Uses a variety of interactive exercises to assist in the development of practical skills for using the clinical process and developmental approach to supervision. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDLE 620B, 690B and 791IP.
B- Requires minimum grade of B-.
IP Requires minimum grade of IP.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Education Leadership.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 620: Organizational Theory and Leadership. 3 credits.
Studies basic organizational theories and models of leadership and management. Emphasizes shared leadership in professional environments, communication skills, systems thinking, and personal and organizational change. Bridges theory to practical applications in educational settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Corequisite: Application to the Education Leadership program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
EDLE 634: Contemporary Issues in Education Leadership. 3 credits. Examines current and emerging issues and trends impacting education. Includes demographic shifts; globalization; technology; data-based decision making; inclusion of diverse learners in American schools; and recent research on student achievement when influenced by race, gender, and poverty. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Education Leadership.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 635: Governance and the Independent School Boardroom. 3 credits. Provides an overview of the best practices and workings of the independent school board and develops skills, insights, and understanding of how school heads/directors can "manage up" to accomplish their goals and objectives. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDLE 620 and EDLE 690.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 636: Adult Motivation and Conflict Management in Education Settings: A Case Study Approach. 3 credits. Uses case studies and simulations to examine conflict mediation and resolution skills, and safety and security issues. Focuses on character and ethics education in schools, coaching and mentoring, and adult motivation to support positive behaviors in work settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDLE 620.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Education Leadership.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 690: Using Research to Lead School Improvement. 3 credits. Develops skills, insights, and understanding of how leaders use research to improve schools, with emphasis on the use of assessment and research data to identify school improvement needs and to design school improvement projects. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDLE 620B.

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Education Leadership.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses
EDLE 770: Introduction to Education Leadership. 3 credits. Introduces the study of education leadership, theoretical traditions in leadership studies, and scholarship on leadership and organizational change. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to Ph.D. in Education Program.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 791: Internship in Educational Leadership. 3 credits. Offers wide range of practical experiences and professional challenges in authentic educational settings. Activities emphasize strategic, instructional, organizational, political, and community leadership. Notes: Course must be taken in second term of program. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDLE 620 or EDSE 743 (may be taken concurrently).

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Enrollment is limited to students with a major in Education Leadership.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
EDLE 792: Internship in Independent School Leadership. 3 credits.
Offers a wide range of practical and professional experiences for aspiring and current school heads. Emphasizes strategic, instructional, organizational, political, and community leadership in the independent school context. Note: Course must be taken in the second term of program. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDLE 620.
Recommended Corequisite: EDLE 690.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Schedule Type: Internship
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

EDLE 801: Contemporary Organization Theory. 3 credits.
Engages students in the study of major organization theories that inform educational leadership research. Students use theory to help inform their own research interests. Students begin work on analytical literature review. Notes: May be taken as corequisite with EDLE 802. First in three-course sequence. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the Ph.D. in Education program.
Recommended Corequisite: EDLE 802.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 802: Leadership and Decision Making. 3 credits.
Engages students in the study of major leadership and decision theories that inform educational leadership research. Students use theory to help inform their own research interests. Students begin work on analytical literature review. Notes: May be taken as corequisite with EDLE 801. Second in three course sequence. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDLE 801. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Emphasizes economic foundations of U.S. education, and evolution of school, district, and state leadership. Students complete work on analytical literature review. Notes: Third in a three-course sequence. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDLE 801, EDLE 802.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 812: Education Law. 3 credits.
Provides an understanding of the legal foundations of U.S. public schools and higher education through examination of general principles of statutory and case law and application of judicial decisions to educational environments. Focuses on legal responsibilities, constraints, and opportunities of public school officials and requires students conduct research regarding legal issues and apply legal analysis and reasoning to a variety of situations. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 813: Social and Political Forces in Education Leadership. 3 credits.
Examines the social and political forces that shape education in the United States and the effect of these forces on school leadership. Examines the social and political functions of schooling in the past and present. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to Ph.D. in Education Program.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 814: Education Finance and Human Resources. 3 credits.
Investigates and evaluates principles of human resource management and economic, legal and technical dimensions of school finance at the federal, state, and local levels of government. Reviews concepts and develops approaches for planning and implementing activities for effective human resource management, including current theories and practices related to recruitment, development, and appraisal of personnel. Applies concepts and procedures of conflict resolution, effective
communication skills, managing change processes, and creating and maintaining a positive school system organization climate. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 815: Conceptual Frameworks in Education Leadership. 3 credits.
Introduces three different disciplinary perspectives on education leadership, and helps identify and articulate different conceptual frameworks. Major focus is designing a conceptual framework that informs research questions. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the Ph.D. in Education Program or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 816: Instructional Leadership-Curriculum Policy and Practice. 3 credits.
Focuses on curriculum and instruction theory, policy, and practice with research emphasis on instructional leadership. Students develop research proposals to investigate instructional leadership in schools and districts, and relate instructional leadership to their own specific research interests. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to Ph.D. in Education Program.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDLE 818: Instructional Leadership-Supervision Policy and Practice. 3 credits.
Introduces current topics and research in supervision and instruction, including theory and empirical work focused on instruction, teacher learning, teacher evaluation, and instructional leadership. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to Ph.D. in Education Program.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (p. 84)

EDRS 531: Educational and Psychological Measurement. 3 credits.
Emphasizes techniques and principles used in the construction, administration, and quantification of measuring devices for evaluation purposes. Discusses interpretation of standardized tests of ability, aptitude, achievement, interest, and personality. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Appropriate methods and advanced methods courses. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 590: Education Research. 3 credits.
Develops skills, insights, and understanding to perform research, with emphasis on interpreting and applying research results. Critiques research, and uses findings in educational settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
600 Level Courses

EDRS 620: *Quantitative Inquiry in Education.* 3 credits.
Examines fundamental concepts and methods of statistics as applied to educational problems, including descriptive and inferential statistics. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRS 590 or equivalent experience.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 621: *Qualitative Inquiry in Education.* 3 credits.
Focuses on basic application of naturalistic research methods. Examines major theoretical frameworks and qualitative research techniques, which include content analysis, coding, and interpretation of data. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRS 590 or equivalent experience.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 630: *Educational Assessment.* 3 credits.
Examines research theory and practice relevant to assessments. Focuses on development of skills to select, score, and interpret educational assessments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Education or Music Education.

Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 631: *Program Evaluation.* 3 credits.
Focuses on perspectives of existing and emerging issues, theories, and models of program evaluation. Involves implementation of program evaluation in related fields and school districts. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

EDRS 797: *Advanced Topics in Education.* 1-6 credits.
Advanced study of selected topics in education for students preparing for doctoral studies or who have been admitted to the PhD program in education. Notes: May be repeated for credit with CEHD approval. Offered by Graduate School of Education (p. 162). May be repeated within the degree.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

800 Level Courses

EDRS 810: *Problems and Methods in Education Research.* 3 credits.
Advanced course in interpreting and applying education research methods. Emphasizes comparison of alternative philosophies of research, ways of formulating questions and hypotheses, research plans, and analysis procedures. Students evaluate existing studies, and investigate a range of research approaches. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Education or Music Education.

Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 811: *Quantitative Methods in Educational Research.* 3 credits.
Emphasizes advanced methods of conducting research using quantitative methods of data collection, and analysis appropriate for research in education. Includes design of experimental and quasiexperimental research studies, and methods of analysis appropriate
to these studies, including analyzing variance and multiple linear regression. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDRS 810B.
B- Requires minimum grade of B-

Enrollment limited to students in the AR-PHD-MUE or E1-PHD-EDUC programs.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 812: Qualitative Methods in Educational Research. 3 credits.
Teaches how to apply qualitative data collection and analysis procedures in educational research, including ethnographic and other field-based methods, and unobtrusive measures. Notes: Emphases vary depending on student interests and needs. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDRS 810B.
B- Requires minimum grade of B-

Enrollment limited to students in the AR-PHD-MUE or E1-PHD-EDUC programs.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 818: Critical Discourse Analysis in Education Research. 3 credits.
Prepares students with a working knowledge of discourse analysis and its application to ethnographic and qualitative research in education. Focuses on critical discourse analysis as a resource to improve classroom interaction and transform educational practice and as an analytic tool for a social analysis of education in a wide variety of local, national and international education contexts and settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDRS 810 EDRS 811 EDRS 812 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDRS 820: Evaluation Methods for Educational Programs and Curricula. 3 credits.
Explores development and types of current systems and models for evaluating educational programs and curricula. Emphasizes evaluation needs and problems of public and private elementary and secondary schools, and colleges and universities. Also considers needs of government agencies, industry, and health-related organizations. Notes:

Prior completion of EDRS 811 and 812 helpful but not required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDRS 810B.
B- Requires minimum grade of B-

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 821: Advanced Applications of Quantitative Methods. 3 credits.
Advanced study of applications of quantitative methods in educational research, reinforcing and building on concepts and skills acquired in EDRS 811. Uses modular approach, and provides advanced study of techniques appropriate to survey research, group-experimental and quasi-experimental research, selected multivariate procedures and factor analysis, and quantitative synthesis (meta-analysis) of research. Combines text reading assignments, critiques, and discussion of relevant journal articles; and application activities. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDRS 810B and 811B.
B- Requires minimum grade of B-

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 822: Advanced Applications of Qualitative Methods. 3 credits.
Advanced seminar devoted to study of current topics in qualitative research. Deals with cutting-edge information on selected advanced topics in qualitative research, and provides opportunities to apply new skills and knowledge to projects related to students’ interests. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDRS 810B and 812B.
B- Requires minimum grade of B-

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 823: Advanced Research Methods in Single Subject/Case Design. 3 credits.
Prepares students to conduct research using single subject design and single case study design. Provides understanding of salient features as well as advantages, disadvantages of these research methodologies. Students critique and analyze published research using these methodologies. Provides opportunities to apply these methodologies to research questions related to student interests. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDRS 810B, 811B and 812B.
EDRS 824: Qualitative Case Study Methods. 3 credits.
Advanced research seminar on qualitative case study design and application in educational research. Topics include descriptive, theoretical, evaluation, and policy case study design and methods. Students will conduct and critique a case study appropriate to their discipline. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to PhD in Education program.

Registration Restrictions:
Required Prerequisites: EDRS 810\(^B\), 811\(^B\) and 812\(^B\).

B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 825: Advanced Research Methods in Self-Study of Professional Practice. 3 credits.
Prepares students to conduct research using the self-study research methodology, a qualitative research approach for systematically examining one's practitioner role for improvement-aimed purposes with contributions to the educational field and knowledge base. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to PhD in Education program.

Registration Restrictions:
Required Prerequisites: EDRS 810\(^B\), 811\(^B\) and 812\(^B\).

B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 826: Structural Equation Modeling. 3 credits.
Focusing on the development of knowledge and skills related to structural equation modeling and research applications in education, psychology, and related fields. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDRS 811.

Registration Restrictions:
EDRS 827: Introduction to Measurement and Survey Development. 3 credits.
Develops knowledge and skills related to measurement and survey development and use in research for education, psychology, and related fields. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDRS 811\(^B\).

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 828: Hierarchical Linear Modeling. 3 credits.
Analyzes nested data structures (e.g. students within classrooms) as well as student growth. Students will learn through reading assignments, lecture and applications using a computer program for data analysis. Students will be expected to critically read multilevel methods used in published research, analyze data, and provide written report of results in APA format. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDRS 821\(^B\) or 827\(^B\).

B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 830: Hierarchical Linear Modeling. 3 credits.
Develops knowledge and skills related to Item Response Theory with application in the context of education, psychology, and related fields. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDRS 821\(^B\).

B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 831: Item Response Theory. 3 credits.
Develops knowledge and skills related to Item Response Theory with application in the context of education, psychology, and related fields. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDRS 811\(^B\).

B- Requires minimum grade of B-.

Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Required Prerequisite: EDRS 821B.
  B- Requires minimum grade of B-

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 832: Document Analysis and Archival Research. 3 credits.
Examines the methodological foundations of and analytical approaches
to document-based research. Offered by Graduate School of Education
(p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: EDRS 810B, 811B, and 812B.
  B- Requires minimum grade of B-

Enrollment limited to students in the E1-PHD-EDHD or E1-PHD-EDUC
programs.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 833: Participatory Action Research. 3 credits.
Explores theoretical concepts associated with participatory action
research and teaches how to apply participatory data collection and
analysis procedures in educational research. Offered by Graduate School
of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDRS 812B.
  B- Requires minimum grade of B-

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRS 836: Narrative Inquiry. 3 credits.
Teaches theory behind narrative inquiry and application of narrative
data collection and analysis procedures in educational research. Builds
students' abilities to conduct narrative data collection and analysis.
Offered by Graduate School of Education (p. 162). May not be repeated
for credit.

Recommended Prerequisite: EDRS 812.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Research

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Educational Psychology (EDEP)

300 Level Courses

EDEP 350: Perspectives on Achievement Motivation. 3 credits.
Focuses on theories and concepts of human achievement motivation;
and examines strategies, techniques and interventions that promote and
sustain motivation in formal and informal learning contexts. Offered by
Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDEP 850: Grounded Theory. 3 credits.
Prepares students to apply and critique grounded theory and related
methods. Includes various approaches to design with particular
attention to analysis techniques and theoretical selection, sensitivity, and
saturation. Recommends students obtain IRB approval prior to beginning
this course. Offered by Graduate School of Education (p. 162). May not be
repeated for credit.

Recommended Prerequisite: EDRS 822.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDEP 895: Qualitative Methods Capstone Project. 3 credits.
Provides the opportunity to formulate, engage and complete a qualitative
research project, research internship, or pilot study of their choice under
faculty supervision in an advanced and specialized seminar. Offered by
Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDRS 812, EDRS 822.

Registration Restrictions:
Enrollment limited to students with a major in Qualitative Research.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDEP 897: Special Topics in Research Methods. 3 credits.
Develops knowledge and skills of selected advanced research methods
subject(s). Offered by Graduate School of Education (p. 162). May be
repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students in the E1-PHD-EDHD or E1-PHD-EDUC
programs.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Educational Psychology (EDEP)

500 Level Courses

EDEP 550: Theories of Learning and Cognition. 3 credits.
Explores theoretical perspectives on learning and cognition, and relation
of these theories to construction of learning environments, student
motivation, classroom management, assessment, and technology to
support teaching and learning. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDEP 551:** *Principles of Learner Motivation.* 3 credits.
Focuses on theories and concepts of human motivation; and examines strategies, techniques, and interventions that promote and sustain learner motivation. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDEP 591:** *Data-Driven Decision Making for Continuous Educational Improvement.* 3 credits.
Provides an intellectual and practical framework for creating and understanding formative and summative assessments of student performance. Emphasis is placed on the learning principles, cognitive processes, and psychometric models as they pertain to assessment issues. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDEP 592:** *Data-Driven Decision-Making Development of Assessments.* 3 credits.
Focuses on strategies to design assessments for students and schools with a particular emphasis on developing and using assessment methods to inform instructional decisions. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDEP 591 may be taken concurrently.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDEP 593:** *Data-Driven Decision Making: Analysis and Interpretation of Assessment Data.* 3 credits.
Focusing on the development of knowledge and skills related to analyzing and interpreting educational assessment data. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDEP 592.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDEP 594:** *Data-Driven Decision-Making Application in Education Contexts.* 3 credits.
Applies fundamental knowledge of assessment using team-based projects. Incorporates development of assessments and the analysis, interpretation, and reporting of assessment data to inform curriculum and instruction based on the context-specific needs of educators. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDEP 593.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDEP 597:** *Special Topics in Educational Psychology.* 1-3 credits.
Covers critical current and emerging issues in educational psychology across the span of human development with an emphasis on research methodology and evidence-based practice. Offered by Graduate School
of Education (p. 162). May be repeated within the term for a maximum 6
credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

EDEP 601: Creativity and Cognition in the Arts and Media. 3 credits.
Focuses on research on cognition, development, learning, and creativity
in the visual arts and media in formal and informal educational settings.
Offered by Graduate School of Education (p. 162). May not be repeated
for credit. Equivalent to AVT 606.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDEP 632: Human Development. 3 credits.
Examines the course of human development from early childhood to
adulthood within the context of educational psychology. Emphasizes
principles of research in human development and the major areas
of cognitive, linguistic, and social contexts of development as they
pertain to learners in schools and beyond. Offered by Graduate School of
Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDEP 653: Culture and Intelligence. 3 credits.
Explores different theoretical perspectives on intelligence as they
relate to individual and cultural differences. Examines issues related to
heritability and measures of intelligence, and intelligence in the cultural
context. Offered by Graduate School of Education (p. 162). May not be
repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDEP 654: Learning, Motivation, and Self-Regulation. 3 credits.
Focuses on theories and research on self-regulation of academic
learning. Presents multidimensional conceptual framework for studying
and applying self-regulation in educational contexts. Offered by Graduate
School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDEP 550, 551.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

EDEP 798: Directed Inquiry in Educational Psychology. 1-3 credits.
Offers a capstone experience to students after completion of majority
of program coursework with the exception of 6 credit hours. Enables
students to demonstrate their integrative knowledge and skills accrued
through study in their concentration area in educational psychology.
Offered by Graduate School of Education (p. 162). May be repeated within
the degree for a maximum 6 credits.

Recommended Prerequisite: Project mentor approval and completion of
coursework in the MS in Educational Psychology exclusive of 6 credit
hours.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EDEP 799: Thesis in Educational Psychology. 1-3 credits.
The thesis is based on original research. It enables students to
demonstrate their integrative knowledge and skills accrued through
study in their concentration area in educational psychology. Offered by
Graduate School of Education (p. 162). May be repeated within the degree
for a maximum 6 credits.
Recommended Prerequisite: Thesis chair approval and completion of coursework in the MS in Educational Psychology exclusive of 6 credit hours.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

EDEP 820: Teaching, Learning, and Cognition. 3 credits.
Focuses on foundational educational psychology theories including cognitive, social, and constructivist themes and their implications for improving instructional practices and learning at all developmental levels and content areas. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 800, EDUC 805, EDLE 802, and EDRS 810.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDEP 821: Sociocultural Processes in Learning, Instruction, and Motivation. 3 credits.
Examines processes by which social, cultural, and linguistic variables influence human behavior. Focuses on differences within and between cultural groups related to student’s learning and achievement in educational settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 800, EDUC 805, EDLE 802, and EDRS 810.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDEP 823: Research Project in Educational Psychology: Sequence I. 3 credits.
Focuses on development and implementation of research studies in educational psychology. Students acquire skills regarding developing research questions and a sound methodological approach for their study. Notes: First in two-course sequence. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDEP 820, 821, and 822.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Electrical and Computer Engineering (ECE)

100 Level Courses

ECE 101: Introduction to Electrical and Computer Engineering. 3 credits.
Introduces fundamental concepts in Electrical and Computer engineering and provides insight to the various careers in each field. Both theory and practical applications of electronic components are covered through examples of real world applications. Topics are reinforced through hands-on laboratory experiments. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (minimum score of 13 in 'Math Placement Algebra I', minimum score of 07 in 'Math Placement Algebra II' and minimum score of 07 in 'Math Placement Transcendentals') or (MATH 105 C, 113 C, 115 C or 123 C).
C Requires minimum grade of C.
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDEP 824: Research Project in Educational Psychology: Sequence II. 3 credits.
Focuses on development and implementation of research studies in educational psychology. Students acquire skills regarding collecting, analyzing, and interpreting data. Notes: Second in two course sequence. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDEP 823.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
200 Level Courses

ECE 201: Introduction to Signals and Systems. 3 credits.
Provides an introduction to key concepts for the description and analysis of signals and systems with an emphasis on discrete-time signals and systems. Specific topics include sinusoidal and complex exponential signals, sampling, spectrum representation of signals via DTFT and DFT, system properties, convolution, impulse response and frequency response. The associated computer lab provides opportunities to apply concepts to physical reality. Note: Students must register for both lecture and lab. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Specialized Designation: Discovery of Scholarship.

Registration Restrictions:
Required Prerequisites: (MATH 114\textsuperscript{C} or 116\textsuperscript{C}) and ECE 101\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 220: Continuous-Time Signals and Systems. 3 credits.
Introduction to the processing and analysis of continuous-time signals and systems in the time-domain via differential equations and in the transform-domain using Laplace and Fourier transforms. Specific topics include the frequency response of LTI systems, Bode plots, system functions, block diagrams, filter design, and a rigorous treatment of sampling and aliasing. Includes applications to communications, circuits, control, and signal processing. Students must register for lecture, lab, and recitation. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Specialized Designation: Discovery of Scholarship.

Registration Restrictions:
Required Prerequisites: ECE 201\textsuperscript{C}, ENGR 107\textsuperscript{C} and MATH 203\textsuperscript{C} and (MATH 214\textsuperscript{C} or 216\textsuperscript{C}).
\textsuperscript{*} May be taken concurrently.
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 285: Electric Circuit Analysis I. 3 credits.
Covers the first half of electric circuit theory and practice. Topics include DC analysis of circuits including Ohm's and Kirchhoff's laws, Thévenin and Norton equivalents, and analysis of circuits with resistors, capacitors, inductors, and operational amplifiers. Includes lab experiments to reinforce topics covered in the course. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Specialized Designation: Scholarly Inquiry.

Registration Restrictions:
Required Prerequisites: ECE 285\textsuperscript{C} and (MATH 214\textsuperscript{C} or 216\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

ECE 301: Digital Electronics. 3 credits.
Introduces digital systems, circuits, and computers. Topics include binary systems and codes, digital logic gates and circuits, microelectronics and integrated circuits, coding and multiplexing, multivibrators, shift registers, counters, A/D converters, and elementary computer architecture. Notes: Not intended for those majoring in electrical or computer engineering. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts. Equivalent to CYSE 301.

Registration Restrictions:
Required Prerequisites: MATH 125\textsuperscript{C}, 114\textsuperscript{C}, IT 102\textsuperscript{C} or MATH 116\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 305: Electromagnetic Theory. 3 credits.
Covers the second half of electric circuit theory and practice. Topics include AC analysis of circuits including phasors, frequency response, power analysis, and transformers. Includes a project and lab experiments to reinforce topics covered in the course. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MATH 214\textsuperscript{C} or 216\textsuperscript{C}) and PHYS 260\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 320: Signals and Systems II. 3 credits.
Second of two-semester sequence providing mathematical background for many ECE courses taken in junior, senior years. Provides methods of representing and analyzing discrete-time signals and systems. Studies effects of converting from continuous-time to discrete time, and presents Z-transform as convenient analysis tool. Emphasizes powerful concept of frequency response of systems developed in first semester. Presents application examples from communications, circuits, control, and signal processing. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Specialized Designation: Scholarly Inquiry.

Registration Restrictions:
Required Prerequisites: (ECE 220^C) and (MATH 203^C).
^C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 330: Circuit Theory. 3 credits.
This course introduces circuit analysis and design for non-ECE majors. Students develop an understanding of circuit analysis concepts such as nodal, mesh, and source transformation. Circuits with inductors, capacitors, resistors, and operational amplifiers are analyzed. Two projects are designed and built by students. A circuit simulation environment is used to simulate and analyze circuits. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: PHYS 260^C, 261^C and MATH 214^C and (MATH 203^C or ME 351^C).
^C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 331: Digital System Design. 3 credits.
Covers principles of digital logic and digital system design and implementation in VHDL. Topics include number systems; Boolean algebra; analysis, design, and minimization of combinational logic circuits; analysis and design of synchronous and asynchronous finite state machines; and introduction to VHDL and behavioral modeling of combinational and sequential circuits. Notes: ECE 332 should be taken concurrently with ECE 331. Credit may not be received for ECE 301 and 331. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CS 112^C or CDS 130^C) and (ECE 101^C or PHYS 261^C) and ECE 332^C.
^C Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Enrollment is limited to students with a major in Computer Engineering, Computer Science or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 332: Digital Electronics and Logic Design Lab. 1 credit.
Lab associated with ECE 331. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CS 112^C or CDS 130^C) and (ECE 101^C or PHYS 261^C) and ECE 331^C.
^C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Enrollment is limited to students with a major in Computer Engineering, Computer Science or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 333: Linear Electronics I. 3 credits.
Principles of operation and application of electron devices and linear circuits. Topics include semiconductor properties, diodes, bipolar and field effect transistors, biasing, amplifiers, frequency response, operational amplifiers, and analog design. Notes: ECE 334 is usually taken concurrently with ECE 333. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: (ECE 280^C) or (ECE 285^C).
^C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 334: Linear Electronics Lab I. 1 credit.
Lab associated with ECE 333. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (PHYS 261^C or 265^C) and (ECE 333^C).
^C Requires minimum grade of C.
Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 350: Embedded Systems and Hardware Interfaces.** 3 credits.
This course introduces embedded systems design through project-based activities. The platform runs on Linux and students design their own IoT (Internet of Things) system as well as demonstrate dashboards with cloud-based data. Hardware interfaces and several types of sensors and actuators are incorporated as part of the projects. Students also learn how to simulate and test signal-conditioning circuits, eventually integrating those as part of their projects. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CS 222\textsuperscript{C} or 262\textsuperscript{C}) and (ECE 280\textsuperscript{C} or 285\textsuperscript{C}) and (ECE 301\textsuperscript{C} or (ECE 331\textsuperscript{C} and 332\textsuperscript{C})).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering, Computer Science or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 370: Robot Design.** 3 credits.
Introduces the concept of robot design and implementation. The focus will be on electrical design philosophies, mechanical design philosophies, and controller design. Assignments are heavily based on the design, simulation and implementation of real-world robotic applications. Assessments are primarily in project form and make use of 3D printing and other manufacturing techniques. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: ECE 220\textsuperscript{C} and CS 222\textsuperscript{C} and (ECE 280\textsuperscript{C}, 285\textsuperscript{C} or BENG 380\textsuperscript{C}) and (ECE 301\textsuperscript{C} or (ECE 331\textsuperscript{C} and 332\textsuperscript{C})).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 390: Engineering Design and Fabrication.** 3 credits.
Project based course where students will design projects containing analog and digital components as well as mechanical parts. Students will simulate, build, and test their projects. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts. Equivalent to BENG 390.

Registration Restrictions:
Required Prerequisites: ECE 280\textsuperscript{C} or 285\textsuperscript{C}.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 392: Engineering Design Studio.** 1 credit.
Identifiers and feasibility study of advanced engineering problems. Application of math, physics and engineering methods to challenging projects. Preliminary design, modeling, simulation and prototyping of projects. This course should be taken the semester preceding ECE/BENG 492. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 2 credits.

Recommended Prerequisite: 75 hours of completed coursework applicable to the EE, CpE, or BIOE degree and permission of instructor.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**ECE 410: Applications of Discrete-Time Signal Processing.** 3 credits.
Introduces fundamental concepts of digital signal processing. Emphasis on the theoretical and numerical tools used for frequency domain analysis of sampled signals. Topics covered include sampling, the discrete Fourier transform, fast transform algorithms, spectral analysis, and digital filtering. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: ECE 220\textsuperscript{C} and STAT 346\textsuperscript{C}.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 415: Power System Analysis.** 3 credits.
Introduces the concepts of power system analysis commonly encountered in the study and practice of electric power engineering. Emphasis is on topics of modern power system modeling, operation and protection, power flow studies, symmetrical and unsymmetrical fault calculations, economic dispatch, and power system stability. Students will use interactive power system simulation tools to complete homework assignments and a comprehensive term project. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: ECE 280\textsuperscript{C}.
C Requires minimum grade of C.
Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 421: Classical Systems and Control Theory.** 3 credits.
Introduces analysis and synthesis of feedback systems, including functional description of linear and nonlinear systems, block diagrams and signal flow graphs; state-space representation of dynamical systems, frequency response methods, Root Locus, Nyquist, and other stability criteria; performance indices and error criteria; and applications to mechanical and electromechanical control systems. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts. Equivalent to SYST 421.

**Registration Restrictions:**
**Required Prerequisite:** (ECE 220
\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 422: Digital Control Systems.** 3 credits.
Introduces analysis, design of digital control systems, Z-transform, discrete linear systems, frequency domain, and state variable techniques. Discusses use of microcomputers in control systems. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ECE 421
\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 424: Modern Control Systems Design.** 3 credits.
Introduces state-space modeling, analysis, and control of feedback systems using time-domain methods rather than frequency-domain methods, and the connections between the two. In particular the course will emphasize the connections between physical real-world systems and mathematical control problems. Specific topics include modeling and realization theory, stability analysis and control of linear systems, controllability and observability, introductions to digital control, linear optimal control, and nonlinear control. Students will demonstrate their obtained knowledge through the design of a complete control system including choices of sensors/actuators in addition to the controller. The course will include extensive use of Matlab and Simulink. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** ECE 421
\textsuperscript{C} or ME 432
\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Enrollment is limited to students with a major in Bioengineering, Computer Engineering, Electrical Engineering, Mechanical Engineering or Systems Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 425: Secure RF Communications.** 3 credits.
Reviews current systems of Radio Frequency (RF) communications and related cyber security issues. This course focuses on security issues in wireless networks, such as cellular networks, wireless LANs, Bluetooth, NFC, RFID, mobile security, anti-jamming communication, and physical layer security. The course will first present an overview of wireless networks, then focus on attacks and discuss proposed solutions and their limitations. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (CS 222\textsuperscript{C} or 262\textsuperscript{C}) and (ECE 465\textsuperscript{C}, CYSE 230\textsuperscript{C} or CS 455\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering, Computer Science, Cyber Security Engineering or Electrical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 429: Control Systems Lab.** 1 credit.
Laboratory experiments for topics in control systems analysis, design, and implementation with emphasis on using microcomputers. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ECE 421
\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 430: Principles of Semiconductor Devices.** 3 credits.
Introduces solid-state physics and its application to semiconductors and semiconductor devices. Topics include band theory, doping, p-n junctions, diffusion theory, low-frequency circuits, devices including bipolar transistor, MOSFET, CMOS, and photo transistors. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** ECE 333\textsuperscript{C} and 305\textsuperscript{C} and (MATH 214\textsuperscript{C} or 216\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.
Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 431: Digital Circuit Design.** 3 credits.
Analysis and design of CMOS digital integrated circuits. Topics include: MOSFET transistor design equations for "hand" analysis and models for computer (SPICE) simulations; static and dynamic characteristics of inverters; fabrication, mask layout, and simulation; static and dynamic CMOS, pass transistor and transmission gate integrated circuit styles; combinational and sequential integrated circuits; semiconductor memory cell types and memory cell arrays. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** ECE 331\(^C\) and 333\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 433: Linear Electronics II.** 3 credits.
Second course in linear electronics. Covers differential amplifiers, feedback circuits, power amplifiers, feedback amplifier frequency response, analog integrated circuits, operational amplifier systems, oscillators, wide band and microwave amplifiers, and computer-aided design. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** ECE 286\(^C\) and 333\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 434: Linear Electronics II Laboratory.** 1 credit.
Second lab course in linear electronics involving analysis and design of topics listed in ECE 433. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** ECE 334\(^C\) and 433\(^C\).
\(^C\) May be taken concurrently.
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 435: Digital Circuit Design Laboratory.** 1 credit.
Lab experiments for topics covered in ECE 431. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Recommended Corequisite:** ECE 431.

**Registration Restrictions:**
**Required Prerequisite:** ECE 334\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 445: Computer Organization.** 3 credits.
General overview of operating a digital computer. Topics include computer arithmetic, arithmetic unit, hardwired and microprogrammed control, memory, register-to-register, input-output operations, and behavioral modeling of computer organization using VHDL. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts. Equivalent to INFS 515.

**Registration Restrictions:**
**Required Prerequisites:** (ECE 331\(^C\) and 332\(^C\)) and (CS 262\(^C\) or 222\(^C\)).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ECE 446: Device Driver Development.** 3 credits.
Addresses device driver and kernel level software programming and development. The C programming language and program trouble shooting are reviewed. Basics of device driver software, Character driver operations and data structures, concurrency and race conditions, kernel timers, memory allocation, communications with hardware, interrupt handling, kernel data types, memory mapping and Direct Memory Access concepts are explored. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** ECE 445\(^C\) or CS 465\(^C\).
\(^C\) Requires minimum grade of C.
Enrollment is limited to students with a major in Computer Engineering, Computer Science or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 447: Single-Chip Microcomputers. 4 credits.
Explores designing with single-chip microcomputers and microcomputer interfacing. Topics include role of microcomputers compared with microprocessors and other computers, microcomputer architecture and organization, real-time control issues, assembly language programming for control, design of control software, input/output methods, design tools, and available single-chip microcomputers. Students select project and design, and construct system including single-chip microcomputer and ancillary hardware to implement control system. Notes: This course is highly recommended for ECE 492/493 students interested in using microcontroller technology in their senior design projects. It should be taken before ECE 493. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: ECE 445 C and (CS 222 C or 367 C).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 448: FPGA and ASIC Design with VHDL. 4 credits.
Practical introduction to modeling of digital systems with VHDL for logic synthesis. Overview and comparative analysis of design flow and tools for FPGAs and standard-cell ASICs. Discusses verification of digital systems using testbenches, prototyping boards and modern testing equipment, and illustrates VHDL-based design methodology with multiple examples from communications, control, DSP and cryptography. Laboratory experiments create link between simulation and actual hardware implementation based on FPGA boards. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: (ECE 445 C).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 450: Mobile Robots. 3 credits.
Introduces mobile robotic systems. Topics include overview of power systems, motors, behavior-based programming, sensors, and sensor integration. Design projects conceived, developed, implemented, and presented. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: ECE 350 C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 460: Communication and Information Theory. 3 credits.
Introduction to analog and digital communications. Topics include review of important concepts from signals and systems theory and probability theory; Gaussian processes and power spectral density; digital transmission through additive white Gaussian channels; sampling and pulse code modulation; analog signal transmission and reception using amplitude, frequency and phase modulation; and effects of noise on analog communication systems. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (ECE 220 C and STAT 346 C).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 461: Communication Engineering Laboratory. 1 credit.
Lab experiments in analog and digital communication areas covered in ECE 460. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: ECE 334 C and 460 C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 462: Data and Computer Communications. 3 credits.
Introduces modern data communications and computer networks. Topics include point-to-point communication links and transmission of digital information, modems, and codecs; packet switching, multiplexing, and concentrator design; multiaccess and broadcasting; local area and wide area networks; architectures and protocols for computer networks; OSI
Reference model and seven layers; physical interfaces and protocols; and data link control layer and network layer. Provides examples of data networks. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (STAT 344<sup>C</sup> or 346<sup>C</sup>) and (ECE 220<sup>C</sup>) and (ECE 331<sup>C</sup> or 301<sup>C</sup>).

<sup>C</sup> Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 463: Digital Communications Systems. 3 credits.

Introduces digital transmission systems. Topics include quantization, digital coding of analog waveforms, PCM, DPCM, DM, baseband transmission, digital modulation schemes, ASK, FSK, PSK, MSK, QAM, pulse shaping, intersymbol interference, partial response, voice-band and wideband modems, digital cable systems, regenerative repeaters, clock recovery and jitter, multipath fading, digital radio design, optimal receiver design, MAP receiver, and probability of error. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisite:** ECE 460<sup>C</sup>.

<sup>C</sup> Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 465: Computer Networking Protocols. 3 credits.

Introduces computer networking protocols and concepts, emphasizing Internet and Internet Protocol Suite. Covers computer networking protocols at application, transport, and network layers, including multimedia networking protocols, and network security and management. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (STAT 346<sup>C</sup> or 344<sup>C</sup>) and (CS 222<sup>C</sup> or 211<sup>C</sup>).

<sup>C</sup> Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering, Electrical Engineering or Systems Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 467: Network Implementation Laboratory. 1 credit.

Hands-on experience in implementing, configuring, and operating local and wide area networks in live laboratory environment equipped with modern local and wide area network devices and technologies. Students exposed to real-world computer networking scenarios including local area network implementation, asynchronous communication setup, and wide area network implementation using various protocols and technologies covering all layers of computer network protocol stack. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Recommended Corequisite:** ECE 465.

**Registration Restrictions:**

**Required Prerequisite:** (ECE 462<sup>C</sup>).

<sup>C</sup> Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Laboratory

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 470: Introduction to Humanoid Robotics. 3 credits.

Covers basic robot architecture with a focus on humanoid robotics. Topics include mechanical design philosophies, electrical design philosophies, and controller design of high DOF systems. Simulation of various parts and functionalities of humanoids culminates in a term project, which includes hardware demonstrations. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (CS 112<sup>C</sup>) and (ECE 280<sup>C</sup>, 285<sup>C</sup> or BENG 380<sup>C</sup>) and (ECE 301<sup>C</sup> or (ECE 331<sup>C</sup> and 331<sup>C</sup>)).

<sup>C</sup> Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

ECE 476: Cryptography Fundamentals. 3 credits.

Covers basic concepts of cryptology, types of cryptosystems, security services, and key management. Gradually introduces mathematical background required for understanding cryptography. Discusses modern secret-key stream and block ciphers, modes of operation, public key cryptosystems (RSA, elliptic curve, and post-quantum cryptography), hash functions, message authentication codes, and digital signature schemes. Covers key cracking machines, side-channel attacks, and fault attacks. Discusses popular cryptographic modules, such as True Random Number Generators and Physical Unclonable Functions, used for key generation and device authentication. Introduces educational and public domain software implementing modern cryptographic algorithms. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** CYSE 330<sup>C</sup>, ECE 465<sup>C</sup> or CS 455<sup>C</sup>.
Students with the terminated from VSE major attribute may complete System. Requires oral and written reports during project and at completion. Notes: Students planning to use microcontroller technology in their projects should enroll in ECE 447 before taking ECE 493. If meeting time conflicts with other courses, come directly to the ECE department for registration. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Mason Core: Capstone, Synthesis (p. 142)

Specialized Designation: Research/Scholarship Intensive

Registration Restrictions:
Required Prerequisite: ECE 492. C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

ECE 493: RS: Senior Advanced Design Project II. 2 credits.
Implementation of project for which preliminary work was done in ECE 492. Project includes designing and constructing hardware, writing required software, conducting experiments or studies, and testing complete system. Requires oral and written reports during project and at completion. Notes: Students planning to use microcontroller technology in their projects should enroll in ECE 447 before taking ECE 493. If meeting time conflicts with other courses, come directly to the ECE department for registration. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Mason Core: Capstone, Synthesis (p. 142)

Specialized Designation: Research/Scholarship Intensive

Registration Restrictions:
Required Prerequisite: ECE 492. C Requires minimum grade of C.

Enrollment is limited to students with a major in Computer Engineering or Electrical Engineering.

ECE 494: Independent Study in Electrical and Computer Engineering. 1-3 credits.
Directed self-study of special topics of current interest in ECE. Topic must be arranged with an instructor and approved by department chair before registering. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 3 credits.

ECE 495: Special Topics in Electrical and Computer Engineering. 0-4 credits.
Topics of special interest to undergraduates. Notes: May be repeated if topics substantially different. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 11 credits.

ECE 499: Special Topics in Electrical and Computer Engineering. 0-4 credits.
Topics of special interest to undergraduates. Notes: May be repeated if topics substantially different. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 11 credits.

500 Level Courses
ECE 505: Hardware Security. 3 credits.
Covers security and trust in hardware, in relation to both ASIC and FPGA technologies. Topics include ASIC and FPGA manufacturing.
supply chain, threats and security challenges such as IP piracy, overproduction, counterfeiting, trojan insertion, reverse engineering, etc. Discusses various attacks against hardware, including physical, invasive, destructive, logical, and side channel attacks. Spanns various hardware defense solutions including metering, locking, obfuscation, watermarking, access control, Trojan testing, IP core isolation, and the theory and practice of physical unclonable functions. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ((ECE 301 or ECE 331) and (CS 211 or CS 222)) or permission of instructor

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 507: Seminar in Emerging Technologies.** 3 credits.
Study of emerging technologies, how they are identified, how they evolve, actions which may encourage or stifle their growth, government influences, societal influences, examples of success and failure, and some lessons to be learned which are unique to government information technology. Topics covered will include a general introduction to emerging technologies, with emphasis on IT, discussion of difficulty in letting go of legacy systems, the DOD Global Information Grid, Cyberwarfare, Complex Adaptive Systems, and Federal Government support of Research and Development. Cannot be used in the PhD IT program. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 508: Internet of Things.** 3 credits.
Introduces the principles, technologies, challenges, and required expertise needed for building the Internet of Things (IoT) solutions. It provides a big picture of what is involved in IoT. Topics covered in this course include analog and digital sensing, interfacing sensors with microcontrollers, digital communication protocols, microcontroller choices and capabilities, gateways, fog computing, networking, cloud computing, need and challenges for cryptography and compression, security issues, and low power/energy challenges. The listed topics are covered only to the extent required to understand the challenges and to the point that the role of a given topic in IoT solutions is comprehended. While briefly covering the technologies involved at the various hierarchal levels of IoT solutions, the course introduces other courses at GMU where students could build further expertise in the topics of interest. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 350 or ((ECE 301 or ECE 331) and CS 222) or equivalent

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 510: Real-Time Concepts.** 3 credits.
Presents design methodology, principles and practice for the development of real-time embedded systems and their application to robotics, mechatronics, sensing, signal processing, and control. Topics include system decomposition, multi-tasking, task communication and synchronization, system modeling, time analysis, principles of filter and controller implementation, ‘fuzzy’ engineering, and multi-microcontroller systems. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 450 or ECE 447 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 511: Computer Architecture.** 3 credits.
Introduces the concepts of a processor microarchitecture, from a pipelined processing unit, through a superscalar, to a multicore multithreaded computing system. Topics include instruction set architecture, single cycle processor, MIPS pipeline processor, precise state, parallel processing, superscalars, memory and cache organization, branch prediction, multicore processors, memory consistency, multi- and many-core cache coherence, and heterogeneous computing. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 445 or CS 465 or permission of instructor

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 513: Applied Electromagnetic Theory. 3 credits.**
Maxwell’s Equations, electromagnetic wave propagation, wave guides, transmission lines, radiation, and antennas. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 305 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 516: Mobile Systems and Applications. 3 credits.**
A comprehensive study of modern mobile devices, with the special focus on smartphones and wearable devices. Topics include mobile operating systems, mobile device components, application development, human-computer interaction, data management, network systems, mobile intelligence, and mobile security. Lectures are enhanced and illustrated with several take-home, hands-on labs. A group-based, open-topic project involves specifying, developing, and presenting a medium complexity application using the Android operating system. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** CS 211 or permission of instructor

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 521: Linear Systems and Control. 3 credits.**
Introduces linear systems theory and design of linear feedback control systems. Reviews linear algebra, state variables, state-space description of dynamic systems, analysis of continuous-time and discrete-time linear systems, controllability and observability of linear systems, and stability theory. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 421

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 526: Neural Engineering. 3 credits.**
Provides an overview of topics in Neural Engineering. Topics covered range from sensory and motor prosthetic devices, stimulation of biological tissue, bioelectrodes and characterization techniques, brain-machine interfaces, and engineered devices to ameliorate neurodisorders. Prior knowledge in electrical or computer engineering disciplines required. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to BENG 525.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 527: Learning From Data. 3 credits.**
This is an introductory course in machine learning and pattern recognition that covers basic theory, algorithms, and applications. Machine learning is the science of getting computers to act without being explicitly programmed. This course balances theory and practice, and covers the mathematical as well as the heuristic aspects. It provides a broad introduction to machine learning and pattern recognition. Topics include: (i) supervised learning (parametric/non-parametric algorithms, support vector machines, kernels, neural networks). (ii) Unsupervised learning (clustering, dimensionality reduction, recommender systems, autoencoders). (iii) Learning theory (bias/variance tradeoffs, VC theory, generalization). (iv) Ensemble methods (boosting and bagging, random forests). (v) Deep learning (deep belief networks, convolutional neural networks, deep autoencoders). The course will draw from numerous case studies and applications. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to DAEN 527.
Recommended Prerequisite: (MATH 203 and STAT 346) or equivalent

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 528: Introduction to Random Processes in Electrical and Computer Engineering. 3 credits.
Probability and random processes are fundamental to communications, control, signal processing, and computer networks. Provides basic theory and important applications. Topics include probability concepts and axioms; stationarity and ergodicity; random variables and their functions; vectors; expectation and variance; conditional expectation; moment-generating and characteristic functions; random processes such as white noise and Gaussian; autocorrelation and power spectral density; linear filtering of random processes, and basic ideas of estimation and detection. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 220 and STAT 346, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 529: Introduction to Wireless Communications and Networks. 3 credits.
Presents the basics of modern wireless communications and wireless networking at the first-year graduate level. Topics include wireless signal design, channel characterization, receiver structure, multiple access technologies, cellular concepts, capacity enlargement, mobility management, and wireless/wireless interworking. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 460 or equivalent

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 531: Digital Signal Processing. 3 credits.
Representation analysis and design of digital signals and systems. Covers sampling and quantization, z-transform and discrete Fourier transform, digital filter realizations, design techniques for recursive and non-recursive filters, fast Fourier transform algorithms, and spectral analysis. Additional topics may include adaptive filtering, homomorphic digital signal processing, digital interpolation and decimation. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 460 or permission of instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 535: Digital Signal Processing. 3 credits.
Presents the fundamentals of sensor characteristics and transfer functions, sensor circuits and interfacing, sensor noise, and protection methods. Studies of different methods used in sensing position, motion, acceleration, force, humidity, temperature, chemicals, etc. are developed, followed by an analysis of specific sensor designs. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 220 and STAT 346, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 537: Introduction to Digital Image Processing (DIP). 3 credits.
First course in digital-image processing; introduces scanning systems, focal plane array detectors, data acquisition methods, display hardware, image preprocessing algorithms, feature extraction, and basic image processing methods. Semester-long image processing project includes utilizing modern image processing system prototyping software. Offered
by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 538: Medical Imaging. 3 credits.
Provides an introduction to the physical, mathematical and engineering foundations of modern medical imaging systems, medical image processing and analysis methods. In addition, this course introduces engineering students to clinical applications of medical imaging. The emphasis is on diagnostic ultrasound and magnetic resonance imaging methods, although several other modalities are covered. The course also provides an overview of recent developments and future trends in the field of medical imaging, discusses some of the challenges and controversies, and involves hands-on experience applying the methods learned in class to real-world problems. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to BENG 538.

Recommended Prerequisite: ECE 220 or equivalent

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 542: Computer Network Architectures and Protocols. 3 credits.
Introduction to architectures and protocols of computer networks and concept of packet switching. Topics include ISO standard layer model, physical interfaces and protocols, data link control, multiaccess techniques, packet switching, routing and flow control, network topology, data communication subsystems, error control coding, local area network, satellite packet broadcasting, packet radio, interconnection of packet-switching networks, network security and privacy, and various examples of computer networks. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: STAT 344 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 545: Digital System Design with VHDL. 3 credits.
Introduction to the design of complex digital systems using hardware description languages. Emphasizes the design methodology based on the partitioning of a digital system into a datapath and control unit. Introduces a clear sequence of steps leading from specification to synthesizable, register transfer level (RTL), and fully verified HDL code. Covers VHDL for digital circuit design, including dataflow, structural, and behavioral coding styles. Introduces and illustrates the concepts of VHDL simulation, verification, synthesis, mapping, placing, routing, timing analysis and performance optimization. Requires semester long project devoted to the design of a complex digital system using VHDL as a hardware description language and FPGA as an implementation platform. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 548: Sequential Machine Theory. 3 credits.
Theoretical study of sequential machines. Topics include sets, relations and lattices, switching algebra, functional decomposition, iterative networks, representation, minimization and transformation of sequential machines, state identification, state recognizers, and linear and stochastic sequential machines. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 331 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading: 
This course is graded on the Graduate Regular scale. (p. 84)

ECE 550: System Engineering Design. 3 credits.
System engineering design methods are studied and practiced, including object-oriented and structured analysis based techniques. Design Description languages such as UML, SysML, IDEF0 and IDEF1x are introduced and used in carrying out complete system designs. Teams make presentations of their designs. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to SYST 520.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

ECE 565: Introduction to Optical Electronics. 3 credits.
Introduces optoelectronic devices for generation, detection, and modulation of light. Topics include electro-optic modulators, gas, solid state and semiconductor lasers, photodetectors, and detector arrays. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 305 and 333.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

ECE 567: Optical Fiber Communications. 3 credits.
Studies components and integration of fiber-optic transmission systems. Topics include optical fibers, signal degradation, optical sources, power launching and coupling, photodetectors, receiver circuits, link analysis, and optical measurements. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 462 or TCOM 500 or permission of instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

ECE 580: Small Spacecraft Engineering. 3 credits.
Comprehensive study of small spacecraft design, operations, bus, communications, computing hardware, software, sensors, power, attitude control, testing, and other topics needed for successful engineering of a spacecraft and its ground station. Review of ultra-small CubeSats, their hardware, software, and missions. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 430 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading: 
This course is graded on the Graduate Regular scale. (p. 84)

ECE 584: Semiconductor Device Fundamentals. 3 credits.
Studies principals of operation of semiconductor devices based on solid state physics. Topics include band theory of solids, intrinsic and extrinsic semiconductor properties, pn junction diode, bipolar junction transistor, Schottky diode, metal insulator semiconductor junctions, field-effect transistors, and hetero-structures. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 430 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.
**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 586: Digital Integrated Circuits.** 3 credits.
Studies design and analysis of digital integrated circuits, emphasizing CMOS technology. Reviews MOSFET operation and SPICE modeling. Covers analysis and design of basic inverter circuits, structure and operation of combinational and sequential logic gates, dynamic logic circuits, chip I/O circuits, and brief introduction to VLSI methodologies. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 331 and ECE 430 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 587: Design of Analog Integrated Circuits.** 3 credits.
Studies design methodologies of CMOS-based analog integrated circuits. Topics include differential amplifiers, current sources, output stages, operational amplifiers, comparators, frequency response, noise, and computer-aided design. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 333 and ECE 430 or 433 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 590: Selected Topics in Engineering.** 3 credits.
Selected topics from recent developments, and applications in various engineering disciplines. Designed to help professional engineering community keep abreast of current developments. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 611: Advanced Computer Architecture.** 3 credits.
Qualitatively and quantitatively examines power, performance and security trade-offs in architecting computing systems. Explores three major components of modern general-purpose architectures: processors, memories, and networks. Enables students to understand how these components can be integrated to build complex multicore, manycore, and multithreaded architectures. Covers the architectural trade-offs in IoT, embedded, and high-performance processors. Topics include processor and system architecture in single core, multicore, multithreaded and heterogeneous architectures; memory architecture, network topology, routing, and flow control. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 511 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 612: Real-Time Embedded Systems.** 3 credits.
Study of real-time operating systems and device drivers for embedded computers. Emphasizes microprocessor systems and associated input device sampling strategies, including interrupt driven and polled I/O. Covers basic input/output operations, analog to digital conversion methods, I/O programming techniques and process, and communication control methodologies. Involves design project. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 511 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 615: Software/Hardware Codesign. 3 credits.
Introduces software/hardware codesign for modern all-programmable system on chip platforms. Covers profiling, design partitioning, interfacing, debugging using integrated logic analyzers, and optimizing performance and resource utilization. Demonstrates the development of hardware accelerators using existing intellectual property cores and establishing efficient communication between software and hardware parts of complex embedded systems. Introduces high-level synthesis for improved efficiency of the development process. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: ECE 511 B- and 545 B. Requires minimum grade of B-

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 616: Advanced Mobile Systems and Applications. 3 credits.
Advanced study of mobile systems and applications, with the focus on system architecture, computing paradigms, and optimization methods. Most lectures are dedicated to case studies based on the most influential research publications and best-known industry products. Special topics include the most cutting-edge applications, such as virtual and augmented reality, machine learning, and cloud computing. For each topic, the design concepts are presented from the perspective of the application performance and system design considerations. Lectures are enhanced with the comprehensive literature review and a group-based, semester-long project. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 516 or permission of instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 619: Nonlinear Systems and Control. 3 credits.
Includes motivating examples; analysis techniques include basic fixed-point theory, implicit function theorem, and dependence of trajectories on initial data and parameters. Also covers computational simulation techniques; stability theory including Lyapunov's direct method; nonlinear control systems of input-output and absolute stability; strong positive real transfer functions; feedback linearization of nonlinear systems; nonlinear canonical forms; nonlinear decoupling; sliding control; and applications to adaptive control, neural networks, and robotics. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 521 or equivalent

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 620: Optimal Control Theory. 3 credits.
Detailed treatment of optimal control theory and its applications. Topics include system dynamics and performance criteria, calculus of variations and Pontryagin's minimum principle, computational methods in optimal control, and applications of optimal control. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 521 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 621: Systems Identification. 3 credits.

Recommended Prerequisite: ECE 521 and 528 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 622: Kalman Filtering with Applications. 3 credits.
Detailed treatment of Kalman Filtering Theory and its applications, including some aspects of stochastic control theory. Topics include state-space models with random inputs, optimum state estimation, filtering, prediction and smoothing of random signals with noisy measurements, all within the framework of Kalman filtering. Additional topics are nonlinear filtering problems, computational methods, and various applications such as global positioning system, tracking, system control, and others. Stochastic control problems include linear-quadratic-Gaussian problem and minimum-variance control. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 521 and 528, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 627: Adaptive Control. 3 credits.
Topics include identification algorithms, model reference adaptive control, self-tuning regulators, convergence, stability, robustness, averaging theory, singular perturbation, and intelligent learning schemes. Students are required to study literature and complete a course project. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 521 or equivalent

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 630: Statistical Communication Theory. 3 credits.
Introduces optimum receiver design in the additive white Gaussian noise environment. Topics include efficient signal set design, modulation techniques, matched filter, correlation detector, coherent and noncoherent detections, fading and diversity channels, random amplitude and phase, diversity techniques, performance bounds of communications, and waveform communications. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 528.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 631: Software-Defined Radio. 3 credits.
Design and implementation of the essential building blocks of a software-defined radio, including sampling, pulse shaping, modulation/ demodulation, synchronization, equalization, and coding. Focus is on software implementation and integration of the building blocks in a software-defined radio platform. Other topics include software-defined radio architectures, application development on software radio platforms, and hardware acceleration for software-defined radio. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 531 or ECE 535 or permission of instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 633: Error Control Coding. 3 credits.
Introduction to error control coding techniques, which enable the detection and correction of errors that arise in the transmission and storage of digital data. Provides the necessary background in discrete mathematics, algebra, and number theory. Topics include classical linear block codes, convolutional codes, and modern sparse-graph codes; hardware and software implementation of encoders and decoders; and applications of error control coding to modern and emerging technologies, such as contemporary and proposed wireless networking standards, quantum communications, quantum computing, post-quantum cryptography, physically unclonable functions, and secure distributed storage media. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 511 or ECE 528 or ECE 535 or ECE 542 or permission of instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 635: Adaptive Signal Processing. 3 credits.
Introduces adaptive systems and adaptive signal processing. Topics include correlation functions and matrices; performance functions; search of minimum; steepest descent and Newton algorithms; least mean squares algorithm; noise perturbed search and misadjustment; sequential regression algorithm and convergence issues; recursive least squares algorithm and forgetting factor; frequency domain algorithms; adaptive equalization, pseudorandom binary sequences and system identification; adaptive interference cancellation; and adaptive beam forming and arrays. Simulates adaptive algorithms. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 528.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 639: Satellite Communications. 3 credits.
Comprehensive study of satellite communication systems. Topics include link budget and quality of service considerations, basics of information transmission, digital modulation and demodulation, channel coding and coded modulation, multiple access, networking services for voice, broadcasting and Internet access over satellites, payload and reliability issues, and technological applications. Understanding of satellite system architectures, propagation link characteristics, key communication techniques, power and bandwidth requirements, and various satellite communications systems and applications. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 528 or ECE 542 or ECE 580

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 642: Design and Analysis of Computer Communication Networks. 3 credits.
Introduces queuing theory. Other topics include concentrator design, multiplexing, capacity assignments, random access schemes, polling and probing techniques, topology design, flow control and routing, packet radio, protocol specification, and validation. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 542 and 528 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 643: Network Switching and Routing. 3 credits.
Fundamentals of switching and routing with application to communications networks, both wireline and wireless. Topics include concepts of space and time for switching and forwarding of data, scalability and performance, label swapping, algorithms for routing and path computation, constrained route optimization, traffic theory, control and signaling, and traffic engineering. The course also covers the concepts and issues underlying the design and implementation of the contemporary switched networks. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 528 and ECE 542.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 645: Computer Arithmetic. 3 credits.
Covers computer arithmetic as applied to the design of general-purpose microprocessors and application-specific integrated circuits for cryptography, coding, and digital signal processing. Focuses on efficient implementations of all basic arithmetic operations in three
major domains: integers, real numbers, and elements of Galois Fields GF(2^n). Illustrates tradeoffs among various hardware algorithms and architectures depending on primary optimization criteria, such as speed, area, and power consumption. Demonstrates the use of software implementations as a source of test vectors for verification of hardware implementations and for evaluating hardware versus software speed-up. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 545 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 646: Applied Cryptography.** 3 credits.
Topics include need for security services in computer networks and digital devices, basic concepts of cryptology, modern symmetric ciphers, public key cryptography (RSA, elliptic curve cryptosystems, post-quantum cryptography), data integrity and authentication, digital signature schemes, key exchange and key management, standard protocols for secure mail, the web and electronic payments, security aspects of mobile communications, efficient software and hardware implementations of cryptographic primitives, attacks against implementations and relevant defenses, requirements for implementation and validation of cryptographic modules, and security engineering with cryptography. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 542 or CS 555 or CYSE 610 or INFS 612 or permission of instructor

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 670: Principles of Command, Control, Communications, Computing, and Intelligence (C4I).** 3 credits.
Provides broad introduction to fundamental principles of command, control, communication, computing, and intelligence (C4I). Applies principles, techniques to wide range of civilian and military situations. Discusses modeling, simulation of combat operations; studies sensing, fusion, and situation assessment processes. Derives optimal decision-making rules. Discusses concepts of C4I architectures and tools to evaluate and design systems such as queuing theory. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to SYST 680.

**Recommended Prerequisite:** ECE 528 or SYST 611 or OR 542, or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 673: Discrete Event Systems.** 3 credits.
Introduces modeling and analysis of discrete event dynamical systems. Course covers elements of discrete mathematics and then focuses on Petri Net models and their basic properties. Relation to other discrete event models of dynamical systems. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to SYST 620.

**Recommended Prerequisite:** ECE 521, or SYST 611 or permission of instructor.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 674: Systems Architecture Design. 3 credits.
Architecture design and representation and the methodologies used to obtain them. Approaches based on system engineering constructs such as object orientation and service oriented architectures are used to design architectures and then represent them in conformance with an architecture framework such as DoDAF. Executable models of the architecture are derived to be used for architecture evaluation. Examples from current practice are used. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to SYST 621.

Recommended Prerequisite: ECE 550.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 675: System Integration and Arch. Evaluation. 3 credits.

Recommended Prerequisite: ECE 674 or SYST 621.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 680: Physical VLSI Design. 3 credits.
Introduces NMOS, CMOS, and BiMOS integrated circuit technology and fabrication. Reviews MOS and BiCMOS inverter structures and operation, MOS and BiCMOS circuit design processes, MOS layers, stick diagrams, design rules, and layout. Covers subsystem design and layout illustration of design process through design of 4bit arithmetic processor and its parts, adder, multiplier, register, and memory cells; and aspects of system timing, test and testability. Reviews currently available VLSI CAS tools. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 586 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 681: VLSI Design for ASICs. 3 credits.
Introduces VLSI design of application-specific integrated circuits (ASICs) from front-end to back-end using HDL and modern design automation software. Covers simulation, synthesis of digital circuits using standard cells, static timing analysis, formal verification, power analysis, test generation/fault simulation, and physical design including floor planning, placement, routing, and design rule checking. Addresses deep submicron CMOS scaling issues and other advanced topics. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 545.

Recommended Corequisite: ECE 586, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 682: VLSI Test Concepts.** 3 credits.
Broad introduction to basic concepts, techniques, and tools of modern VLSI testing. Fundamentals of defect modeling, fault simulation, design for testability, built-in self-test techniques, and failure analysis. Test economics, physical defects and fault modeling, automated test pattern generation, fault simulation, design for test, built-in self test, memory test, PLD test, mixed-signal test, idddq test, boundary scan and related standards, test synthesis, diagnosis and failure analysis, automated test equipment, embedded core test. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 586

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 684: MOS Device Electronics.** 3 credits.
Study of Metal Oxide Semiconductor (MOS)-based device theory, characteristics, models, and limitations. Topics include MOS capacitor, MOSFETs, CMOS, charge coupled devices, scaling, hot carrier effects, latchup, radiation effects, and isolation techniques. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 584 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 685: Nanoelectronics.** 3 credits.
Emphasizes the fundamental concepts and principles that govern the operation of nano-electronic devices (100 nm down to 1 nm.). Addresses basic device building blocks such as quantum dot (QD), single electron tunneling transistor (SETT), carbon nanotube (CNT), nanowire, etc. Considers the design and analysis of a variety of nano-devices (“quantum” or “mesoscopic“ devices) and examine some notable applications. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 584

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 691: CubeSat Design.** 1.5 credit.
First phase of a project course focused on design and early prototyping. Design and implementation of a project related to CubeSats, satellite communication ground and space systems, satellite bus modules, embedded hardware and software. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Recommended Prerequisite:**
ECE 584 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 692: CubeSat Engineering.** 1.5 credit.
Second phase of a project course dedicated to project implementation and testing. Design and implementation of a project related to CubeSats, satellite communication ground and space systems, satellite bus modules, embedded hardware and software. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

**Recommended Prerequisite:**
ECE 691

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
ECE 698: Independent Reading and Research. 1-3 credits.
Independent study under the supervision of a faculty member, resulting in an acceptable technical report. Notes: Requires written report. May be taken no more than twice for graduate credit. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** At least two core courses and permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ECE 699: Advanced Topics in Electrical and Computer Engineering. 1-6 credits.
Advanced topics of current interest in electrical and computer engineering. Topics chosen so they do not duplicate other courses in department. Active participation encouraged in form of writing and presenting papers in research areas. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

ECE 721: Nonlinear Systems. 3 credits.
Includes motivating examples; analysis techniques include basic fixed-point theory, implicit function theorem, and dependence of trajectories on initial data and parameters. Also covers computational simulation techniques: stability theory including Lyapunov’s direct method; nonlinear control systems of input-output and absolute stability; strong positive real transfer functions; feedback linearization of nonlinear systems; nonlinear canonical forms; nonlinear decoupling; sliding control; and applications to adaptive control, neural networks, and robotics. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 620 or ECE 621.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ECE 722: Kalman Filtering with Applications. 3 credits.
Detailed treatment of Kalman Filtering Theory and its applications, including some aspects of stochastic control theory. Topics include state-space models with random inputs, optimum state estimation, filtering, prediction and smoothing of random signals with noisy measurements, all within the framework of Kalman filtering. Additional topics are nonlinear filtering problems, computational methods, and various applications such as global positioning system, tracking, system control, and others. Stochastic control problems include linear-quadratic-Gaussian problem and minimum-variance control. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 521 and 528 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

ECE 728: Random Processes in Electrical and Computer Engineering. 3 credits.
Recommended for advanced master’s and doctoral students. Provides background in random processes needed for pursuing graduate studies and research in statistical signal processing, communications, control, and computer networks. Covers probability spaces, random variables, Lebesque integration, conditional mean on a sigma field, convergence of random variables, limit and ergotic theorems, Markov processes, and Martingales. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 528 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**ECE 731: Digital Communications.** 3 credits. Digital transmission of voice, video, and data signals. Covers signal digitization, pulse code modulation, delta modulation, low bit-rate coding, multiplexing, synchronization, intersymbol interference, adaptive equalization, frequency spreading, encryption, transmission codes, digital transmission using band-width compression techniques, and satellite communications. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 630 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 732: Mobile Communication Systems.** 3 credits. Topics include modeling of mobile communication channel, signal set and receiver design for mobile communication channel, access and mobility control, mobile network architectures, connection to fixed network, and signaling protocols for mobile communication systems. Examples of mobile communication systems are presented, including pan-European GSM, North American D-AMPS, and personal communication systems. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 542 and 630.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 734: Detection and Estimation Theory.** 3 credits. Introduces detection and estimation theory with communication and radar and sonar applications. Topics include classical detection and estimation theory, detection of known signals in Gaussian noise, signal parameter and linear waveform estimation, and Wiener and Kalman filters. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 528.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 738: Advanced Digital Signal Processing.** 3 credits. Theory and practice of advanced digital signal processing techniques. Topics may include efficient high-speed algorithms for convolution, correlation, orthogonal transforms, multirate processing of digital signals, multiresolution time-frequency and time-scale analysis of one- and two-dimensional signals, and multitaper spectral estimation. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 528 and ECE 535.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 740: Digital Signal Processing Hardware Architectures.** 3 credits. Addresses topics that include high-level DSP optimizations, such as pipelining, unfolding, and parallel processing; common DSP structures such as FFTs, filters, direct digital frequency synthesizers, and correlators; modeling of DSP algorithms in MATLAB and conversion of MATLAB models into fixed-point VHDL blocks; platform implementation issues: hardware vs. software, FPGA vs. ASIC, power, area, throughput, and applications of DSP hardware. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 535 and ECE 545 or equivalents or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 741: Advanced Digital Signal Processing.** 3 credits. Emphasizes mobility and teletraffic modeling aspects, and networking issues and state-of-the-art performance evaluation methods of radio and system infrastructure applicable to wireless cellular and local networks. Topics include analysis of mobility, handoff, control traffic loading, resource allocation techniques, multiaccess protocols, admission policy and call control, network infrastructure and multilayer configuration, wireless LANs, and packet data systems. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 642 or equivalent.
Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 742: High-Speed Networks. 3 credits.
Theories for design, analysis and evaluation of high-speed networks including scalability, performance, and issues related to local area, metropolitan, and wide area networks. Includes architecture, protocols, and applications of high-speed networks; performance modeling of high-speed networks; flow control and routing; design issues for high-speed switches, interfaces, and controllers; all optical networks and their architectures; examples of high-speed computer networks and Internet working; video, imaging, and multimedia applications; software issues, robustness, and applications; and selected topics in current research areas in high-speed computer networks. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 528 and 642, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 746: Advanced Applied Cryptography. 3 credits.
Discusses complex cryptographic algorithms and their implementations in software and hardware. Provides mathematical background necessary to understand, implement, and break modern cryptalgorithms. Covers implementations of cryptosystems using smart cards, network processors, and other platforms. Discusses side channel attacks against implementations of cryptography, including timing attacks, power analysis, fault analysis, cache attacks, etc. Introduces advanced topics, such as random and pseudorandom number generators, secret sharing, zero-knowledge, and quantum cryptography. Requires a semester-long project devoted to implementation of selected algorithms or protocols in software or hardware, and/or comparative analysis of various algorithms, protocols, or implementations. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 646 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 751: Information Theory. 3 credits.
Introduces information theory, which is mathematical theory of communication systems. Topics include measures of information such as entropy, relative entropy, and mutual information; Shannon-McMillan-Breiman theorem and applications to data compression; entropy rate and source coding theorem; Huffman, arithmetic and Lempel-Ziv codes; method of types, channel capacity, and channel-coding theorem; joint source-channel coding theorem; differential entropy; Gaussian channel; rate distortion theory; and vector quantization. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 528 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 747: Cryptographic Engineering. 3 credits.
Discusses efficient implementations of cryptographic algorithms and protocols in hardware and software, ranging from high-performance to low-power, as well as resistance to side-channel and fault attacks. Covers code breaking algorithms and practical implementations of side-channel attacks. Introduces research techniques. Requires semester-long project devoted to study of a cryptographic engineering problem, including a comprehensive literature review, problem definition, and research plan. Notes: Course will be partially lecture style, partially seminar. Students will give hour long, in depth presentations on their research topics. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: ECE 646 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ECE 754: Optimum Array Processing I. 3 credits.

**Recommended Prerequisite:** ECE 528 and ECE 535.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 780: Radio Frequency Electronics.** 3 credits.
This course addresses the design of electronic building blocks for radio frequency (RF) microelectronic circuits. Topics include trade-offs in RF design, transceiver architectures, low-noise amplifiers, mixers, oscillators, frequency-synthesizers, phase-locked loops, and power amplifiers. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** ECE 587, 684, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ECE 795: Engineering Seminar.** 0 credits.
Fulfills seminar requirement for MS in electrical and computer engineering programs. Invited speakers, faculty, and ECE graduate students lecture on current topics and research. Notes: Students must enroll in ECE 795 the final semester they file to graduate. Once the department verifies that the seminar requirement has been met, a grade of S (satisfactory) will be submitted. Students who have not met the seminar requirement in their final semester must continue to register for ECE 795 in subsequent semesters until the requirement is met. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**ECE 797: Scholarly Paper.** 0 credits.
Student must develop a rigorous, technical report (called Scholarly Paper) on a topic of current interest in Electrical and Computer Engineering and make an oral presentation of this report. Students fulfill this requirement through and individual project in a 600-level or above ECE graduate course. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree.

**Recommended Prerequisite:** Completed 18 credit hours of graduate work.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**ECE 798: Research Project.** 1-6 credits.
Student must complete a one-semester long research project on an ECE technical topic under the guidance of a faculty advisor, and write a research report that will be presented as a departmental seminar. Notes: No more than a combined total of 3 credits may be taken towards satisfying the master’s degree, although students may register for more credits. Students may not count both ECE 799 and ECE 798 for master’s degree. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Completed 18 credit hours of graduate work.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**ECE 799: Master’s Thesis.** 1-6 credits.
Research project chosen and completed under guidance of graduate faculty member that results in technical report and oral defense acceptable to thesis committee of three faculty members. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree.

**Recommended Prerequisite:** 9 graduate credits, and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

ECE 999: Research Topics in ECE. 3 credits.
Studies advanced research areas in Electrical and Computer Engineering within a course format. Students will develop specialized research skills, which will also involve the presentation of their own work, developed individually and within groups. This course may be repeated for credit if the research areas differ. Notes: This will be an irregularly scheduled course intended for advanced master's students who want to pursue a specific topic to more depth than a typical course offers at the master's level. It will prepare students to undertake individual research topics when they move on to pursue a Ph.D. program, or enter a research environment in their chosen professional careers. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Completion of at least one 600 or 700 level course in the Research Topic area; and permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate level students.
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

900 Level Courses

ECE 998: Doctoral Dissertation Proposal. 1-12 credits.
Work on research proposal that forms basis for doctoral dissertation. Notes: No more than 24 credits of ECE 998 and 999 may be applied to doctoral degree requirements. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree.

Recommended Prerequisite: Enrolled in a Ph.D. program.

Registration Restrictions:
Enrollment limited to Graduate level students.
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ECE 999: Doctoral Dissertation. 1-12 credits.
Formal record of commitment to doctoral dissertation research under direction of ECE faculty member. Notes: Students must complete minimum 12 credits of doctoral proposal (ECE 998) and doctoral dissertation research (ECE 999) Maximum of 24 credits of ECE 998 and 999 may be applied to degree. Students who choose to take less than 24 credits of ECE 998 and 999 may earn remaining credits from approved course work. Students cannot enroll in ECE 999 before research proposal is accepted and approved by dissertation committee. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.
Enrollment is limited to Graduate level students.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Engineering (ENGR)

100 Level Courses

ENGR 107: Introduction to Engineering. 2 credits.
Introduces engineering profession fundamentals and problem-solving. Topics include description of engineering disciplines, functions of the engineer, professionalism, ethics and registration, problem solving and representation of technical information, estimation and approximations, and analysis and design. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

ENGR 395: Engineering Internship. 0-3 credits.
Students will participate in experiential learning in an industrial setting. Students must identify work opportunity and seek advisor approval prior to registering. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Completion of at least 30 credit hours.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ENGR 396: Engineering Co-Op I. 0-3 credits.
1st Semester of a multi-semester co-operative education experience. Students must identify work opportunity and seek advisor approval prior to registering. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Recommended Prerequisite: Completion of at least 30 credit hours.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ENGR 397: Engineering Co-Op II. 0-3 credits.
2nd Semester of a multi-semester co-operative education experience. Students must identify work opportunity and seek advisor approval prior to registering. Offered by Electrical & Comp. Engineering (p. 1086). Limited to two attempts.

Recommended Prerequisite: Completion of at least 30 credit hours.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)
ENGR 396: Directed Self-Study of Special Topics. 1-3 credits.
Provides in-depth study of special topics not normally offered in regular courses. Topics to be announced in the Schedule of Classes. May be repeated if topics substantially different. Requires minimum grade of C. (p. 84)

ENGR 397: Independent Study in Engineering. 1-3 credits.
Directed self-study of special topics of current interest in ENGR. Notes: May be repeated if topics substantially different. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGR 498: Independent Study in Engineering. 1-3 credits.
Directed self-study of special topics of current interest in ENGR. Notes: May be repeated if topics substantially different. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGR 499: Special Topics in Engineering. 0-4 credits.
Topics of special interest to undergraduates. Notes: May be repeated if topics substantially different. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 11 credits.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

English (ENGH)

100 Level Courses

ENGH 100: Composition for Multilingual Writers. 4 credits.
Intensive practice in drafting, revising, and editing expository essays of some length and complexity. Studies logical, rhetorical, and linguistic structure of expository prose, with attention to particularly difficult aspects of the language for multilingual writers. Methods and conventions of preparing research papers. Notes: Students must attain minimum grade of C to fulfill degree requirements. Offered by English (p. 359). Limited to three attempts. Equivalent to ENGH 101, ENGH 122.

Mason Core: Written Communication (lower) (p. 142)
Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 101: Composition. 3 credits.
Intensive practice in drafting, revising, and editing expository essays of some length and complexity. Studies logical, rhetorical, and linguistic structure of expository prose. Methods and conventions of preparing research papers. Notes: Students must attain minimum grade of C to fulfill degree requirements. Offered by English (p. 359). Limited to three attempts. Equivalent to ENGH 100, ENGH 122.

Mason Core: Written Communication (lower) (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 121: Enhanced Composition For Multilingual Writers of English I. 3 credits.
Provides intensive practice in drafting, revising, and editing essays in common academic genres such as description, exposition, and analysis, with additional language support for building English fluency. Addresses logical, rhetorical, and linguistic structures of expository prose. This course is the first of a two-part course for students in the Undergraduate International Pathway Program. Offered by English (p. 359). Limited to three attempts.

Specialized Designation: Discovery of Scholarship.
Recommended Prerequisite: Admission to the Undergraduate International Pathway Program for international students.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 122: Enhanced Composition For Multilingual Writers of English II. 3 credits.
Provides intensive practice in drafting, revising and editing essays in common academic genres such as argumentation and research based writing, with additional language support for building English fluency. Addresses logical, rhetorical, and linguistic structures of expository prose, and builds critical reading strategies. This course is the second of a two-part course for students in the Undergraduate International Pathway Program. Notes: Students must attain minimum grade of C to fulfill Mason Core degree requirement for written communication (lower
level). Offered by English (p. 359). Limited to three attempts. Equivalent to ENGH 100, ENGH 101.

**Specialized Designation:** Discovery of Scholarship.

**Recommended Prerequisite:** Satisfactory progress in ENGL 121/ENGH 121.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

### 200 Level Courses

**ENGH 201: Reading and Writing about Texts.** 3 credits.
Close analysis of literary texts, including but not limited to poetry, fiction, and drama. Emphasizes reading and writing exercises to develop basic interpretive skills. Examines figurative language, central ideas, relationship between structure and meaning, narrative point of view. Offered by English (p. 359). Limited to three attempts.

**Mason Core:** Literature (p. 142)

**Recommended Prerequisite:** 3 credits of 100-level English.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**ENGH 202: Texts and Contexts.** 3 credits.
Studies literary texts within the framework of culture. Examines texts within such categories as history, gender, sexuality, religion, race, class, and nation. Notes: Builds on reading and writing skills taught in ENGH 101. Offered by English (p. 359). May be repeated within the term.

**Mason Core:** Literature (p. 142)

**Recommended Prerequisite:** 3 credits of 100-level English.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 203: Western Literary Tradition.** 3 credits.
Major works of Western literature in historical progression. Focuses on writers such as Homer, Sophocles, Euripides, Dante, Cervantes, Machiavelli, and Montaigne. Notes: All readings are in modern English. Courses build on reading and writing skills taught in ENGH 101. Offered by English (p. 359). Limited to three attempts.

**Mason Core:** Literature (p. 142)

**Recommended Prerequisite:** 3 credits of 100-level English.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 204: Western Literary Traditions.** 3 credits.
Major works of Western literature in historical progression. Covers writers such as Moliere, Mme. de Lafayette, Goethe, Ibsen, Flaubert, Dostoyevski, Tolstoy, Mann, Kafka, Borges, and Soyinka. All readings are in modern English. Notes: Courses build on reading and writing skills taught in ENGH 101. Offered by English (p. 359). Limited to three attempts.

**Mason Core:** Literature (p. 142)

**Recommended Prerequisite:** 3 credits of 100-level English.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 300 Level Courses

**ENGH 300: Cover to Cover.** 3 credits.
Introduction to various topics in English; many have an interdisciplinary emphasis. Appropriate for non-majors. Topic changes each time course is offered. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ENGL 101/ENGH 101

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 301: The Fields of English.** 3 credits.
Introduces the fields of English studies, focusing on discipline-specific forms of practice within the concentrations in the major. Explores central concepts including reading, language, medium, text, author/producer. Maps histories and contexts of English as a discipline. Offered by English (p. 359). Limited to three attempts.

**Specialized Designation:** Discovery of Scholarship.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 302: Advanced Composition.** 3 credits.
Intensive practice in writing and analyzing expository forms such as essay, article, proposal, and technical or scientific reports with emphasis on research related to student’s major field. Notes: Students must attain minimum grade of C to fulfill degree requirements. Schedule of Classes designates particular sections of ENGH 302 in business, humanities, natural sciences and technology, and social sciences. Offered by English (p. 359). Limited to three attempts.

**Mason Core:** Written Communication (upper) (p. 142)

**Recommended Prerequisite:** Completion of 45 credits.

**Registration Restrictions:**

C Requires minimum grade of C.
D Requires minimum grade of D.

Students with a class of Freshman may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 303: Humanities College to Career. 1 credit.
Focuses on career choices and effective self-presentation for soon-to-be graduating students with majors in the humanities. Explores how skills typically learned in humanities majors can be leveraged for a successful transition to post-graduation employment. Offered by English (p. 359). Limited to three attempts. Equivalent to FRLN 309, HIST 385, PHIL 393, UNIV 420.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 304: Topics: Literary Surveys. 3 credits.
Advanced introduction to major movements and representative figures of two or more centuries or periods of American, British, European, or world literature. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 305: Dimensions of Writing and Literature. 3 credits.
Teaches students the conventions of writing in literary studies while emphasizing writing process. Develops interpretive skills for further study in the major though the teaching of in-depth close reading, intertextual analysis, and critical reading in scholarship. Offered by English (p. 359). Limited to three attempts.

Specialized Designation: Scholarly Inquiry, Writing Intensive in Major

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 307: English Grammar. 3 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 308: Theory and Inquiry. 3 credits.
Investigates a problem or debate central to the discipline of English. Teaches students how to read, understand, and engage with theoretical texts. Notes: May be repeated for credit when topic is different. Offered by English (p. 359). May be repeated within the term.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 309: Topics in Literature. 1-3 credits.
Studies literature by topics, such as women in literature, science fiction, and literature of the avant garde. Notes: Topic varies. May be repeated for credit when topic is different. Offered by English (p. 359). May be repeated within the term.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 310: Topics: Women and Literature. 3 credits.
Explores experiences of women as both authors and subjects of imaginative literature. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 315: Folklore and Folklife. 3 credits.
Topics include folktales, personal narratives, legends, proverbs, jokes, folk songs, folk art and craft, and folk architecture. Considers ethnicity, community, family, festival, folklore in literature, and oral history. Discusses traditions in students' own lives. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 316: Topics in Myth and Literature. 3 credits.
Studies how traditional mythologies are reflected in English and American literature and other texts as themes, motifs, and patterns. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 318: Introduction to Cultural Studies. 3 credits. Introduces interpretive practices associated with cultural studies. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 319: Popular Culture. 3 credits. Emphasizes popular fiction and adaptation of popular prose genres to media that have strong verbal and visual elements. Relationship between verbal and nonverbal elements of media such as film, comics, and radio. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 320: Literature of the Middle Ages. 3 credits. Selected English narrative, dramatic, and homiletic literature written between 1300 and 1500, exclusive of Chaucer. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)


Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 322: Shakespeare. 3 credits. Introduction to Shakespeare's art. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 323: Shakespeare: Special Topics. 3 credits. Study of one aspect of Shakespeare's art or critical issues surrounding it. Offered by English (p. 359). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Satisfaction of University requirements 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 324: English Renaissance Drama. 3 credits. Major dramas and dramatists of English Renaissance, such as Lyly, Marlowe, Jonson, Middleton, Webster, and Ford. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 325: English Poetry and Prose of the 17th Century. 3 credits. English poetry and prose from 1603 to 1688, excluding Milton. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)


Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)


Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 332:** Restoration and 18th Century Drama. 3 credits. Restoration comedy of manners, sentimental comedy, and neoclassical and bourgeois tragedy. Theories of drama and conventions of staging. Includes writers such as Wycherley, Behn, Congreve, and Cowley. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 333:** British Novel of the 18th Century. 3 credits. English novel from its beginnings through turn of 19th century. Covers works by Behn, Defoe, Haywood, Richardson, Fielding, Sterne, Burney, Smollett, and Austen. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)


**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 335:** Prose and Poetry of the Victorian Period. 3 credits. Poetry and nonfiction prose by such authors as Carlyle, Arnold, Tennyson, Elizabeth Barrett Browning, Robert Browning, Ruskin, Mill, and Wilde. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 336:** British Novel of the 19th Century. 3 credits. Works by Dickens, Thackeray, the Brontes, Eliot, Trollope, and Hardy. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 337:** British Poetry after 1900. 3 credits. Emphasizes Hardy, Yeats, Lawrence, Graves, Auden, Thomas, and Hughes. Fiction works employing poetic techniques, such as Joyce's Ulysses, may also be studied. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 338:** British Novel after 1900. 3 credits. Works by Conrad, Forster, Lawrence, Joyce, Woolf, Greene, Lessing, Spark, and Fowles. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 339:** British and Irish Drama after 1900. English or Irish drama from Yeats to the present. Plays by authors such as Yeats, Synge, O'Casey, Osborne, Wesker, Pinter, Friel, Churchill, and Gems. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 340:** Early American Literature. Works of first 200 years of American literature, including Edwards, Franklin, Irving, Cooper, and Bryant. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 341:** Literature of the American Renaissance. Major writers of American Renaissance (1830-1865), with emphasis on Emerson, Thoreau, Hawthorne, Melville, Whitman, Poe, Stowe, Douglass, and Dickinson. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
ENGH 343: Development of the American Novel to 1914. 3 credits. Major American novels of the pre-World War I period with emphasis on Brown, Cooper, Hawthorne, Melville, Twain, Howells, James, Crane, Dreiser, Norris, and others. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 344: Development of the American Novel since 1914. 3 credits. Works by Fitzgerald, Hemingway, Faulkner, Dos Passos, Wolfe, Bellow, and Nabokov. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 345: American Drama of the 20th Century. 3 credits. American drama of 20th century, with special attention to playwrights such as Glaspell, O'Neill, Miller, Williams, Forne, and Albee. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 346: American Poetry of the 20th Century. 3 credits. Emphasizes work of Robinson, Frost, Stevens, Williams, Pound, Crane, Eliot, and Lowell. May include work of fiction employing poetic techniques, such as Faulkner's The Sound and the Fury. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 347: American Drama of the 20th Century. 3 credits. Emphasizes work of Robinson, Frost, Stevens, Williams, Pound, Crane, Eliot, and Lowell. May include work of fiction employing poetic techniques, such as Faulkner's The Sound and the Fury. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 348: Beginnings of African American Literature Through 1865. 3 credits. Concentrating on such poets as Phillis Wheatley, Jupiter Hammon, Lucy Terry, and George Moses Horton, examines significant African American literary, social, and political texts produced through 1865. Special attention to narrative accounts of enslavement and freedom by Frederick Douglass, Harriet Jacobs, and Olaudah Equiano; political writings and orations of David Walker and Sojourner Truth; fiction of Harriet Wilson and William Wells Brown; and nonwritten cultural artifacts such as slave songs and spirituals. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
ENGH 352: Topics in Ethnic American Literature. 3 credits.
Studies particular ethnic American literatures. Focuses on literatures such as Asian American, Native American, Latino/a, Arab American, or Jewish American. Notes: May be repeated when topic (expressed by course subtitle and content) is different. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 355: Recent American Fiction. 3 credits.
American short story writers and novelists from World War II to present, including Mailer, Barth, Cheever, Oates, Gass, Beattie, Updike, and Morrison. Offered by English (p. 359). Limited to three attempts.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 356: Recent American Poetry. 3 credits.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 357: World Literatures in English. 3 credits.
Study of selected topics, periods, genres, or authors in literature written in English, originating in Canada, Australia, New Zealand, South Asia, or Africa, for example. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 358: Modern Drama. 3 credits.
Representative plays of most influential European and American dramatists, with emphasis on dramatic styles such as realism, expressionism, epic, and existentialism. Studies Chekhov, Ibsen, Strindberg, Brecht, and Beckett. Offered by English (p. 359). Limited to three attempts.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 361: Continental Fiction, 1880-1950. 3 credits.
Offered in cooperation with the Department of Modern and Classical Languages. Focuses on continental novel from beginning of 20th century to present. Includes Proust, Mann, Gide, Kafka, Yourencar, Beauvoir, Calvino, and Garcia Marquez. Attention to influence of this literature on novel in English. Offered by English (p. 359). Limited to three attempts.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 362: Global Voices. 3 credits.
Studies two cultures other than contemporary British or American culture through exploration of several textual forms such as written literature, oral literature, film, folklore, or popular culture. Specific cultures vary, but at least one is non-Western. Notes: May be repeated for credit when topic is different. Offered by English (p. 359). May be repeated within the degree.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 366: The Idea of a World Literature. 3 credits.
Examines history and current status of conceptions of world literature, considering such topics as non-European influences on Western literature, shifting horizons of comparative literature, rise of postcolonial literature, place of translation, and role of international institutions such as UNESCO and the Nobel Prize. Focuses on degree to which these initiatives have been successful in promoting global understanding of literary production. Offered by English (p. 359). Limited to three attempts.
Mason Core: Global Understanding (p. 142)
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 367: World Literatures in English. 3 credits.
Study of selected topics, periods, genres, or authors in literature written in English, originating in Canada, Australia, New Zealand, South Asia, or Africa, for example. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 368: Modern Drama. 3 credits.
Representative plays of most influential European and American dramatists, with emphasis on dramatic styles such as realism, expressionism, epic, and existentialism. Studies Chekhov, Ibsen, Strindberg, Brecht, and Beckett. Offered by English (p. 359). Limited to three attempts.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 370: Introduction to Documentary. 3 credits.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 371: Television Studies. 3 credits.
Learn to identify and analyze formal elements of television. Learn how to situate and evaluate television in their cultural and historical contexts, interpret specific texts, and understand the relationships among broadcasting and networks, citizenship, audiences, and the public sphere. Offered by English (p. 359). Limited to three attempts. Equivalent to ENGH 555.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 372: Introduction to Film. 3 credits.
Introduces film medium as an art form. Offered by English (p. 359). Limited to three attempts. Equivalent to ENGH 555.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 373: Film and Video Forms. 3 credits.
Teaches students the formal elements of fiction films/videos and documentaries. Develops analytical writing skills in film and video studies with an emphasis on collaboration. Focuses on reading and practicing artistic processes of filmic storytelling, understanding films and videos in multiple contexts, including production and distribution industries and political and commercial systems. Offered by English (p. 359). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 375: Web Authoring and Design. 3 credits.
Provides a rhetorical foundation for web authoring and design in professional settings. Students will learn basic principles of writing for the web, information architecture, coding for accessibility, and usability testing. The production-oriented component of the course provides instruction in writing valid code and practice with web- and graphic-editing software tools. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 376: Rhetoric and New Media. 3 credits.
Critical reading of new media texts and creation of technology-enriched texts in variety of rhetorical genres. Instructs students in rhetoric of new media, whether produced as hypertext, multimedia, or interactive digital productions. Technology-enriched activities present complex textuality of words, images, word-as-image, and kinetic text. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 377: Digital Creative Writing. 3 credits.
Combined workshop and studio course in technological and aesthetic issues of reading and writing hypermedia texts with emphasis on poetry, fiction, creative nonfiction, mixed genre, drama, or performance. Explores how genre meets hypertext and hypermedia in original creative work. Includes techniques in authoring interactive hypermedia projects using digital media tools. Notes: May include reading assignments in hypertext and hypermedia theory. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: ENGL 396/ENGH 396 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 380: Introduction to Writing and Rhetoric. 3 credits.
Introduces students to the field of writing studies, with a focus on definitions of writing and rhetoric and research methods applied to the study of writing from the perspective of multiple disciplines. Provides an overview of both historical and contemporary approaches to studying writing as object, process, practice, and occupation. Offered by English (p. 359). Limited to three attempts.

Specialized Designation: Discovery of Scholarship.

Recommended Prerequisite: ENGL 302/ENGH 302 is recommended.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 382: Writing Nonfiction Genres. 3 credits.
Advanced practice in analyzing and writing nonfiction forms such as essay, profile, article, and technical or scientific report, depending on student’s interests. Notes: Not to be taken concurrently with ENGH 399 or 486, and not to be taken by students who have taken ENGH 486. Not a remedial course. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 386: Editing for Audience, Style, and Voice. 3 credits.
Introduces editing as a textual and rhetorical practice. Addresses copyediting, stylistics, and design; revision based on audience, purpose, and genre; multimedia editing; interactions between editors and authors. (Not a remedial course in fixing sentence errors.) Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 388: Professional and Technical Writing. 3 credits.
Intensive study and practice in various forms of professional and technical writing, including proposals, reports, instructions, news releases, white papers, and correspondence. Emphasizes writing for variety of audiences, both lay and informed, and writing within various professional and organizational contexts. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: ENGL 302/ENGH 302.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 389: Peer Tutoring in Writing across the Disciplines. 1 credit.
Experiential learning course in teaching of writing across disciplines. Students receive Writing Center training in theory and techniques of tutoring writing and work a minimum of 3 hours per week in Writing Center. Focus is on practical application of writing theory and pedagogy from course readings, development of tutoring skills, and self-reflection through journals and final paper. Notes: Students must submit two faculty recommendations and a sample of recent academic writing, and complete an interview with the director of the Writing Center. Offered by English (p. 359). May be repeated within the degree for a maximum 3 credits. Equivalent to CHSS 390.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 391: Forms of Poetry. 3 credits.
Intensive study of and practice in formal elements of poetry through analyzing models and weekly writing assignments. Depending upon specific instructor, can cover rhyme, meter, rhythm, lineation, stanza pattern, traditional and experimental forms, free verse and open-form composition, lyric, narrative, and dramatic modes. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: ENGH 396.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 392: Forms of Fiction. 3 credits.
Intensive practice in the elements and forms of fiction, through analyzing models and completing weekly writing assignments. Covers short stories, short-shorts, longer narratives, and such elements as plot, narrative technique, dialogue, point of view, voice and style, along with tools such as evocation, description, and epiphany. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: ENGH 396.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 393: Forms of Nonfiction. 3 credits.
Intensive study of and practice in various forms of nonfiction writing, through analyzing models and completing weekly writing assignments. Includes in-depth discussion and practice in such forms as biographies, documentaries, editorials, interviews, reports, reviews, and essays. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: ENGH 396.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 396: Introduction to Creative Writing. 3 credits.
Assignments include writing exercises and original works of poetry and fiction. May also include drama or creative nonfiction. Includes reading assignments in covered genres, and may include oral presentations or in-class performance. Original student work read and discussed in class and conference with instructor. Offered by English (p. 359). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 397: Poetry Writing. 3 credits.
Workshop in reading, writing poetry. Original student work read and discussed in class and conferences with instructor. Technical exercises
in craft of poetry; may include reading assignments. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** ENGL 396/ENGH 396 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 398**: *Fiction Writing.* 3 credits.
Workshop course in reading and writing fiction. Original student work read and discussed in class and conferences with instructor. Includes technical exercises in craft of fiction; may include reading assignments. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** ENGL 396/ENGH 396 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 399**: *Creative Nonfiction Writing.* 3 credits.
Workshop in reading and writing of nonfiction that makes use of literary techniques normally thought of in context of fiction, such as evoking senses and use of dialog. Original student work read and discussed in class and conferences with instructor. Includes technical exercises in artful creating of nonfiction; may include reading assignments. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** ENGL 396/ENGH 396 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**ENGH 400**: *Honors Seminar.* 3 credits.
Emphasizes growth in awareness of literary scholarship as a discipline, providing opportunity for advanced study in literary and cultural criticism. Covers variety of topics, including consideration of a literary period, genre, author, work, theme, discourse, or critical theory. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Open only to English department honors students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 401**: *RS: Honors Thesis Writing Seminar.* 3 credits.
Provides guidance in research methods to students writing an honor thesis as well as workshop for critiquing works in progress. May be taken concurrently with another approved course offered by English Department, in which case thesis work may substitute for some assigned work in second course by arrangement of both instructors. Offered by English (p. 359). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** Acceptance into English honors; permission of department and ENGH 400/ENGL 414 or ENGH 402/ENGL 416.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 402**: *Honors Independent Study.* 1-3 credits.
Intensive writing course. Honors students concentrating in nonfiction writing and editing may use English 416 to replace English 414 as first course in honors program. Notes: Honors students concentrating in creative writing may use ENGH 402 to replace ENGH 401. Honors students concentrating in nonfiction writing who take ENGH 401 and complete a nonfiction thesis may use ENGH 402 in conjunction with an advanced course in nonfiction writing to replace ENGH 400. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** Admission to honors program in English, and permission of instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 408**: *Topics in Criticism.* 3 credits.
Studies selected approach to literary criticism, as announced, with exercises in critical analysis. Includes new criticism, structuralism, psychoanalysis, and Marxism. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 409**: *Literary Modes.* 3 credits.
Theory and practice of such modes as tragedy, comedy, tragicomedy, romance, and satire, considered in separate semesters and drawn from variety of periods ranging from biblical times to present, with examples from drama, poetry, and fiction. Notes: May be repeated with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 412**: *Topics in Folklore Studies.* 3 credits.
Exploration of various aspects of folklore and folklife such as folklore and literature, folk arts, folk song, and material culture. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term.
Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 414: Folklore and the Supernatural. 3 credits.
Examines the role of supernatural phenomena in individuals’ everyday lives. Introduces folkloristic approaches to the study of belief, paranormal experiences, and popular spirituality. Topics may include ghosts, spirit possession, superstitions, visions, near death experiences, dream interpretation, magic, the commodification of belief, and the supernatural and new media. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 415: Folk Arts and Folk Artists. 3 credits.
Examines the traditional arts of everyday life, such as festive foods, mementos and other objects of memory, textile arts, pottery, carving in wood and stone, roadside shrines, and more. Explores the folk aesthetics of group-based creativity through the lenses of biography, history, literature, and folklore studies. Considers traditional objects as narratives in material form. Examples drawn from multiple cultures as well as traditions in students’ own lives. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 416: Ethnicity and Migration in Folklore. 3 credits.
Explores U.S. immigration trends and the historical basis for the concepts of ethnicity, identity, and immigration in folklore scholarship, literature, film, and popular media. The course explores at least three of the following ethnic groups: Latino, Asian, Jewish, European, Arab, or African. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 417: RS: Topics in Folklore Research. 3 credits.
Topic-based course in research methods. Students conduct advanced research in folklore studies using traditional and digital research tools and approaches. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

Mason Core: Capstone (p. 142)

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: ENGH 305 (3 credit) and 85 credit hours earned.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 418: Cultural Constructions of Sexualities. 3 credits.
Introductory survey of cultural, literary, and theoretical constructions of sexuality that seek to complicate traditionally fixed categories of identity. Examines various representations of human sexuality, with particular attention to intersections with gender, race, ethnicity, nationality, and class. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 419: Topics in Popular Literature. 3 credits.
Studies specific topic or theme in popular literature. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 421: Topics in Medieval and Renaissance Literature. 3 credits.
Studies selected topics, genres, themes or authors in medieval or Renaissance literature and culture. Notes: May be taken for credit by English or history majors. Specific topic may vary. Primary emphasis is literary or historical, depending on discipline of instructor. May consider relevant material from philosophy, theology, and art. May be repeated when topic is different. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits. Equivalent to FRLN 431.

Specialized Designation: Scholarly Inquiry.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 422: Chaucer. 3 credits.
Major works of Chaucer, with emphasis on The Canterbury Tales. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 428: Milton. 3 credits.
Milton's major poetic works, with emphasis on Paradise Lost. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 431: Topics: British Literary Periods. 3 credits.
In-depth study of selected period of British literature. In addition to literary examples, materials may be chosen from art, philosophy, or popular culture of the time. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 432: Topics: British Authors. 3 credits.
Study of one or two major figures in British literature. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 441: Topics: American Authors. 3 credits.
Study of one or two major figures in American literature. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 442: Topics: American Literary Periods. 3 credits.
In-depth study of selected period of American literature. In addition to literary examples, materials may be chosen from art, philosophy, or popular culture of time. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 451: Science Fiction. 3 credits.
Major works of science fiction in terms of mode, themes, and narrative techniques, especially role of hypothesis in science fiction. Focuses on novels, short stories from early 19th century to present. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 452: Critical Study of Children's Literature. 3 credits.
Examines the history and criticism of children's literature and the strategies used by authors of children's literature to address their audience. Selected readings range from Puritan to contemporary writing for children, as well as influential works in educational philosophy, such as those by Locke and Rousseau. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 453: Topics in Fiction. 3 credits.
Study of selected topics, periods, or authors. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 454: Topics in Poetry. 3 credits.
Study of selected topics, periods, or poets. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Satisfaction of University requirements in 100-level English and in Mason Core literature.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
ENGH 455: *Topics in Drama.* 3 credits.
Studies selected topics, periods, or playwrights. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 456: *Topics in Literary Nonfiction.* 3 credits.
Special studies in literary nonfiction by topic, such as the personal essay, New Journalism, the "nonfiction novel," the memoir, or historical traditions of literary nonfiction. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 457: *Topics in Film/Media Theory.* 3 credits.
Advanced studies of theories about various aspects of production, distribution, and reception of film-mediated experiences. Topics may include theories of spectator, semiotics, feminist film theory, theories of narrativity, structuralist film theory, or deconstruction. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** ENGL 332/ENGH 372 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 458: *RS: Topics in Literary Research.* 3 credits.
Topic-based course in research methods. Students conduct advanced research in literary studies using traditional and digital research tools and approaches. Notes: May be repeated when the topic is different. Offered by English (p. 359). May be repeated within the degree.

**Mason Core:** Capstone (p. 142)

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** ENGH 305 (3 credit) and 85 credit hours earned.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 459: *Internship.* 1-3 credits.
Under supervision of a faculty director, students report and reflect on their work as interns at organizations of their choosing, usually in writing and/or editing positions. For 3 credits, students work on site at least 135 hours as specified in the agreement developed with the internship supervisor and approved by the faculty director. Notes: Contact the English Department one semester prior to enrollment. No more than 3 credits can be counted in concentration or English minor. May be repeated with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Permission of internship director. 60 credits. English majors need 18 credits of English (3 credits of 100-level English course; 3-6 credits of 200-level English courses; 3 credits of ENGL302/ENGH 302 and 6-9 credits of upper-level English courses). Non-English majors must meet the same requirements, except that they replace one upper-level English course with an upper-level course in their major.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 460: *Topics in Film/Media History.* 3 credits.
Advanced studies of development of film language, both as cultural practice and medium for formal innovation. Topics might include studies of national cinemas, historical periods, genres, or individual directors. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Mason Core:** Capstone (p. 142)

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** ENGL 332/ENGH 372 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 470: *Topics in Film/Media Studies.* 3 credits.
American and foreign films selected by type, period, or director with emphasis varying from year to year. Required viewings, student discussion, and written critiques. Notes: May be repeated for a maximum of 6 credits with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** ENGL 332/ENGH 372 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

ENGH 472: *Topics in Film/Media Practice.* 3 credits.
Instruction in revising, editing, and preparing specialized writing for print production. Emphasizes methods of achieving clarity, accuracy, and completeness. Lecture and discussion on editing and printing techniques; practical exercise in revision, layout, and production. Offered by English (p. 359). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
**ENGH 484:** RS: Writing Ethnography. 3 credits.
Study and practice of ethnographic writing. Students conduct ethnographic investigations and practice journal keeping, field note recording, interviewing, transcription, and interpretation. Includes introduction to current issues in ethnographic writing. Offered by English (p. 359). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Recommended Prerequisite:** ENGH 302.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 485:** Document Design. 3 credits.
Theory and practice of using computer programs to design and produce publications including brochures, fliers, newsletters, and small magazines. Includes readings, writing papers, and producing and editing copies and original publications. Offered by English (p. 359). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 486:** RS: Writing Nonfiction for Publication. 3 credits.
Workshop course. Intensive practice in advanced nonfiction writing; emphasizes writing for publication. Occasional special topics sections in such forms as autobiography and scientific writing. Offered by English (p. 359). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** ENGL 309/ENGH 382 or ENGL 399/ENGH 398 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 488:** Topics in Writing and Rhetoric. 3 credits.
Advanced studies in rhetoric and writing. Introduces key rhetorical terminology and examines how texts construct meaning and how those meanings are determined within social contexts. Topics may include the relationship between rhetorics and poetics, rhetoric and new media, histories of rhetoric, global rhetorics, argument theory, discourse analysis, theories of technical communication, or advanced theories of composition and pedagogy. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Satisfaction of University requirements in 100-level English and in Mason Core literature.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 489:** Proposal Writing and Development. 3 credits.
Provides foundation in the skills and knowledge required to effectively create proposals for various types of organizations. Emphasizes best practices in management, presentation, and research skills necessary to find funding, manage proposal efforts, and build relationships with funders. Reviews editing, concision, and technical writing skills required for proposal writers. Offered by English (p. 359). Limited to three attempts.

**Recommended Prerequisite:** ENGH 302.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 492:** Advanced Fiction Writing Workshop. 3 credits.
Workshop; intensive practice in creative writing and study of creative process. Intended for students already writing original creative work. Notes: Enrollment is controlled. Submit 8-10 pages of fiction to instructor for review. May be repeated with permission of instructor. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ENGL 398/ENGH 398 and manuscript review.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 493:** Advanced Workshop in Nonfiction. 3 credits.
Workshop in varieties of nonfiction, along with creative process and techniques such as research and interview methods. Includes reading and writing of essays, biographies, autobiographies, travel, journalism, etc. Notes: Registration is controlled. Submit 8-10 pages of nonfiction to instructor for review. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ENGH 396, ENGH 399.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 494:** Advanced Poetry Writing Workshop. 3 credits.
Intensive practice in the craft of poetry and study of the imagination in creative process. Intended for students already writing original poetry. Notes: Enrollment is controlled. Submit 8-10 pages of poetry to instructor for review. May be repeated with permission of instructor. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ENGH 397/ENGH 397 and manuscript review.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 495:** Capstone and Thesis. 3 credits.
Presentations of original work for critique by peers and faculty. Students synthesize what they have learned during prior work in the program...
through workshops for final revisions of manuscripts for the BFA portfolio. Students submit the revised manuscripts as their final submission for evaluation by faculty. Students receive guidance in research methods as they investigate the lives of writers and learn the procedures for such tasks as submitting original work for publication and applying for jobs. Offered by English (p. 359). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Recommended Prerequisite:** ENGH 396; ENGH 391, 392, or 393; ENGH 397, 398, and 399.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 497:** *Topics in Creative Writing.* 3 credits.
Intensive practice in creative writing and study of creative process. Workshop course. Concentrates on specialized literary type other than short story or poetry such as playwriting, screenwriting, children's literature, travel literature, autobiography, gothic novel, or translation. Notes: For students already writing original creative work. Students must submit typed manuscript at least one week before registration. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** ENGL 396/ENGH 396 or equivalent and manuscript review. Enrollment is controlled. Contact instructor for manuscript guidelines.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ENGH 499:** *Independent Study.* 1-6 credits.
Intensive study of particular author, genre, period, or critical or theoretical problem in literature or linguistics, to be conducted by student in close consultation with instructor. Student produces at least one substantial piece of written work during semester on research findings. Notes: May be repeated with approval of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**ENGH 500:** *Research in English Studies.* 3 credits.
Introduces research in English studies, including practice in library methods, writing critical bibliography, evaluating issues and problems, and surveying scholarly activities in department. Offered by English (p. 359). May not be repeated for credit. Equivalent to ENGH 701.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 501:** *Introduction to Professional Writing and Rhetoric.* 3 credits.
Provides historical and theoretical background in professional writing and editing in a seminar format. Explores professional writing’s emergence as a field of scholarship and practice, emphasizes the relationships between rhetorical theories and practice, and introduces students to bibliographic research in the field. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 502:** *Research Methods in Rhetoric and Professional Writing.* 3 credits.
Introduces theory, methods, and ethics of conducting research in rhetoric and professional writing. Students learn to conduct and evaluate research that may include rhetorical analysis, discourse analysis, historical methods, ethnography, user-centered design, document and usability testing, and others. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 503:** *Theory and Practice of Editing.* 3 credits.
Instruction in revising, editing, and preparing specialized writing for printing. Emphasizes methods of achieving clarity, accuracy, and completeness. Lecture and discussion on editing and printing techniques; practical exercise in revision, layout, and production. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**ENGH 504: Internship.** 1-6 credits.
Under supervision of a faculty director, students report and reflect on their work as interns at organizations of their choosing, usually in writing and/or editing positions. For 3 credits, students work on site at least 135 hours as specified in the agreement developed with the internship supervisor and approved by the faculty director. Notes: Contact the English Department one semester prior to enrollment. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 505: Document Design.** 3 credits.
Theory and practice of using computer programs to design and produce publications including brochures, fliers, newsletters, and small magazines. Includes readings, writing papers, and producing and editing copies and original publications. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 506: Research for Narrative Writing.** 3 credits.
Combines study of basic research tools with field work and writing workshop experience. Helps students develop techniques and skills necessary for writing a research-dependent project of sufficient complexity to be of book or long essay length. Emphasis on finding story behind facts, using material from numerous sources. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 507: Web Authoring and Design.** 3 credits.
Provides a rhetorical foundation for web authoring and design in professional settings. Teaches basic principles of writing for the web, information architecture, coding for accessibility, and usability testing. Production-oriented component provides instruction in writing valid code and practice with web- and graphic-editing software tools. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 508: Digital Rhetoric.** 3 credits.
Provides an examination of major works on digital rhetoric and digital media framed by contemporary rhetorical theories that inform the emergent field of digital rhetoric. Course work includes projects that engage in the design, analysis, and assessment of digital media. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 509: Proposal Writing and Development.** 3 credits.
Provides foundation in the skills and knowledge required to effectively create proposals for various types of organizations. Emphasizes best practices in management, presentation, and research skills necessary to find funding, manage proposal efforts, and build relationships with funders. Reviews editing, concision, and technical writing skills required for proposal writers. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**ENGH 511: Graduate Literature Survey.** 3 credits.
Advanced survey of selected genres, periods, areas, styles, and theoretical issues in literature. Notes: Baccalaureate degree highly recommended. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of advanced undergraduate work and approval of the department. Baccalaureate degree highly recommended.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 526: Special Topics in the History and Criticism of Children's Literature.** 3 credits.
Focuses on the history and criticism of children's literature by concentrating on selected historical periods and literary modes such as "Golden Age" children's literature, contemporary fantastic and children's literature, or Romantic and Victorian children's literature. Notes: May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of advanced undergraduate English courses and permission of department; or baccalaureate degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 564: Form of Poetry.** 3 credits.
Students seeking permission must submit typed manuscript of original poetry. Intensive study of and practice in formal elements of poetry through analyzing models and weekly or biweekly writing assignments. Intended for students already writing original poetry. Covers rhyme, meter, rhythm, lineation, stanza pattern, traditional and experimental forms, free verse and open-form composition, lyric, narrative, and dramatic modes. Notes: Other interested students should contact the English Department at (703) 993-1180. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** Admission to MFA concentration in poetry; ENGL 464/ENGH 494 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 565: Forms of Nonfiction.** 3 credits.
Intensive study of and practice in various forms of nonfiction writing through analyzing models and weekly writing assignments. Includes biographies, documentaries, editorials, interviews, reports, reviews, and essays. Notes: Other interested graduate students should contact the English Department at (703) 993-2763. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** Admission to MFA concentration in nonfiction; ENGL 489/ENGH 486 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 570: Graduate Survey in Film and Media Studies.** 3 credits.
Advanced survey of topics in film and media including theories of production and the circulation of meanings in visual culture. Notes: May be repeated with permission of department. Offered by English (p. 359). May be repeated within the degree for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 590: Topics in Folk Narrative.** 3 credits.
Explores types of folk narratives such as mythology, folktale, fairy tale, legend, family narrative, personal narrative. Focuses on tales from around the world. Considers aspects of storytelling such as storytelling as performance, storytelling as therapeutic modality, and storytelling during crises and conflicts. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the degree for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 591:**

**Recommended Prerequisite:** ENGL 458/ENGH 492 or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 592:**

**Recommended Prerequisite:** ENGL 458/ENGH 492 or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 593:**

**Recommended Prerequisite:** ENGL 458/ENGH 492 or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 594:**

**Recommended Prerequisite:** ENGL 458/ENGH 492 or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 595:**

**Recommended Prerequisite:** ENGL 458/ENGH 492 or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 596:**

**Recommended Prerequisite:** ENGL 458/ENGH 492 or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 597:**

**Recommended Prerequisite:** ENGL 458/ENGH 492 or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 598:**

**Recommended Prerequisite:** ENGL 458/ENGH 492 or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 599:**
repeated when topic is different. Offered by English (p. 359). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 592: Historical Studies of the English Language. 3 credits.
Either a chronological survey of development of English from Old and Middle English to Modern English and American English; or intensive study of grammar and syntax of Old English as literary language in representative texts of period. Notes: May be repeated for credit with permission of department. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

ENGH 602: Pedagogical Research. 3 credits.
Introduces theories of and hands-on experiences for students interested in studying pedagogical practice, classroom environments, and learners in context. Methodologies include ethnography, case study, grounded theory, quasi-experimental, narrative analysis, Activity Theory, Archival Research, and Assessment. Students will examine the relationships between methodological frames, pedagogical context and theories of learning. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 604: Internship in Folklore. 1-6 credits.
Unpaid, approved work-study positions at specific sites arranged by interested students and their advisor. Under supervision of faculty advisor, student works as intern with site supervisor in agency of student's choosing, given advisor's permission. Notes: For 3 credits, students work 120 hours on site and write 3,500 words, or equivalent, given contract with advisor. Contact English Department one semester prior to enrollment. Offered by English (p. 359). May not be repeated for credit.

Recommended Prerequisite: A course in folklore, which may be taken concurrently.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 608: Craft Seminars. 3 credits.
Non-MFA students seeking permission must submit manuscript of original written work in appropriate genre. Various sections offer work in fiction, poetry, and nonfiction, each focusing in different ways on the practices and the craft development of writers. Numerous writing assignments mixed with reading followed by careful analytical and craft discussions. Notes: Assignments vary with genre and specific topic. May be taken concurrently with ENGH 564, 565, 566. Offered by English (p. 359). May be repeated within the term for a maximum 15 credits.

Recommended Prerequisite: Admission to MFA program or ENGL 464/ENGH 494, ENGL 458/ENGH 492, ENGL 489/ENGH 486, or permission of instructor. Non-MFA students must submit manuscript for review prior to registration.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 609: Online Writing. 3 credits.
Offers a craft seminar in writing for social media and online platforms. Students develop an online identity and presence, and compose work for public dissemination. Numerous writing assignments mixed with reading followed by careful analytical and craft discussions. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 610: Proseminar in Teaching the Reading of Literature.** 3 credits.
Methods of teaching literature. Includes study of methods of literary analysis, and ways of developing student responses to literature, with some classroom practice. Notes: Does not satisfy Virginia certification requirement in diagnostic or developmental reading. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 611: Studies in Rhetoric.** 3 credits.
Reading and discussion of several major texts that address patterns of discourse, communication, and other issues of rhetoric. Notes: Content varies. Recent offerings include 20th century rhetoric, collaborative writing, and computers and rhetoric. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 612: Cultures of Professional Writing.** 3 credits.
Students work as ethnographers, studying selected sites where people write professionally, and analyzing ways production and reception of writing contribute to and result from local culture of each site. Lecture and workshop format. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 613: Technical Communication.** 3 credits.
Intensive study of theory and practice of technical and scientific writing, with emphasis on writing for variety of audiences. Focuses on writing and evaluating formal reports, articles for lay and technical audiences, proposals, theses, manuals, and other forms of technical prose. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 614: Internship in the Teaching of Writing.** 1-3 credits.
Internships provide experience working in a teaching program such as school or writing center. Under direction of faculty member, students must secure cooperation of on-site supervisor. Notes: Students work minimum 3 hours per week per credit to be awarded, keep a weekly reflective and analytical log, and communicate regularly with faculty director. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ENGH 615: Proseminar in Composition Instruction.** 3 credits.
Methods of teaching expository writing. Includes consideration of planning courses, practice in teaching and grading papers, and study of recent developments in teaching writing. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
ENGH 616: Nonfiction Writing Workshop. 1-6 credits.
Intensive practice in craft of nonfiction and study of creative process.
Intended for students already familiar with traditional and contemporary
nonfiction, and already writing original nonfiction. Notes: At discretion
of instructor, reading may be required. May be repeated for credit with
permission of department. Offered by English (p. 359). May be repeated
within the degree.

Recommended Prerequisite: ENGL 565/ENGH 565 which may be taken
concurrently, and permission of instructor, except for MFA students in the
concentration.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 617: Poetry Writing Workshop. 1-6 credits.
Intensive practice in craft of poetry and study of creative process.
Intended for students already familiar with traditional and contemporary
poetic modes and already writing original poetry. Notes: At discretion
of instructor, reading may be required. May be repeated for credit with
permission of department. Registration is open only to students in the
MFA program. Offered by English (p. 359). May be repeated within the
degree.

Recommended Prerequisite: ENGL 564/ENGH 564, which may be taken
concurrently.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 618: Fiction Writing Workshop. 1-6 credits.
Intensive practice in craft of fiction and study of creative process.
Intended for students already familiar with traditional and contemporary
fiction and already writing original fiction. Notes: At discretion of
instructor, reading may be required. May be repeated for credit with
permission of department. Offered by English (p. 359). May be repeated
within the degree.

Recommended Prerequisite: ENGL 566/ENGH 566, which may be taken
concurrently or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
ENGH 642: Seminar in British Literature. 3 credits.
Intensive study of a selected period, movement, or genre in British or world Anglophone literature. Offered by English (p. 359). May be repeated within the degree for a maximum 24 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 644: Seminar in American Literature. 3 credits.
Intensive study of a selected period, movement, or genre in American literature. Offered by English (p. 359). May be repeated within the degree for a maximum 24 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 646: Seminar in Advanced Research. 3 credits.
Intensive study using research methods associated with specific topics, archives, or databases. Notes: Topics vary. May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 661: Seminar in African-American Literature. 3 credits.
Intensive study of a period in African-American literature between 1800 and present with focus to be determined by instructor. Considers different genres including autobiography, fiction, drama, poetry, essays, and oral artifacts such as slave songs, spirituals, and hip-hop. Notes: May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 662: Seminar in Literary Studies. 3 credits.
Intensive study of selected genres, periods, areas, styles, and theoretical issues in literature. Notes: Topics vary. May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 665: Seminar in Global Culture. 3 credits.
Examines various cultural texts such as literature, drama, film, and folklore in terms of transnational circulation or production and reception in locations around the world other than Britain and United States. Engages with issues arising from globalization of English and interplay of global cultures. Notes: Texts studied in English or English translation. May be repeated with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 670: Seminar in Film and Media Studies. 3 credits.
Advanced seminar in topics in visual representation including film, television, and video, and in theories of production and circulation of meanings in visual culture. Notes: May be repeated with permission of department. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 675: Feminist Theory and Criticism. 3 credits.
Presents historically based introduction to major debates within feminist theory and criticism. Stressing gender in literature and its interpretation, explores diverse collection of feminist interpretive practices. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 676: Introduction to Cultural Studies. 3 credits.
Advanced introduction to theoretical practice known as cultural studies, with attention to role in textual studies. Part of interdisciplinary cultural studies PhD and MA in English programs. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 681: Advanced Topics in Folklore Studies. 3 credits.
Explores advanced folklore and folklife topics such as bodylore, sense of place, festival, folk drama, and folk narrative studies. Notes: May be repeated when topic is different. Offered by English (p. 359). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ENGH 684: Proseminar in Poetry. 3 credits.
For students working on independent reading and research in poetry. Designed for students preparing to take the MFA reading exam in poetry but open to others with comparable reading projects in poetry. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 685: Selected Topics, Movements, or Genres of Literature in English. 3 credits.
Content varies. Notes: May be repeated with permission of department. Offered by English (p. 359). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 689: Advanced Proposal Writing. 3 credits.
Introduces the federal contract and grants proposal process and provides an overview of the federal acquisition process, the capture and proposal management processes, and best practices for writing winning proposals in the federal arena. Students work individually and in teams to write and manage proposals. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: ENGH 509.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 690: Special Topics in Writing and Rhetoric. 3 credits.
Includes readings and discussion in a wide range of topics related to writing and rhetoric. May focus on a specific theory, method or practice in writing and rhetoric. Notes: May be repeated for credit when topic varies. Offered by English (p. 359). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 695: Northern Virginia Writing Project Inservice Program. 1-3 credits.
Offered at request of school division or other education agency to assist teachers in improving student writing and use of writing to learn. Notes: Content varies. May be repeated for credit with permission of department. Offered by English (p. 359). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 696: Northern Virginia Writing Project Teacher/Research Seminar. 3 credits.
Acquaints classroom teachers with current research on composing as well as methods of studying writing in school settings. Participants collect data and write up results of their research. Offered by English (p. 359). May not be repeated for credit.

Recommended Prerequisite: ENGL 615/ENGH 615, ENGL 695/ENGH 695 the Northern Virginia Writing Project Summer Institute, or other course in the teaching of writing.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 697: Composition Theory. 3 credits.
Acquaints classroom teachers with theory relating to writing and teaching composition. Focuses on explaining theories of participants, reading works of leading theorists, and developing statement describing implications of theoretical consistency in teaching writing. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 699: Workshop in English. 1-3 credits.
Concentrated workshops, educational tours, independent studies, and special seminars dealing with selected topics in writing, linguistics, film, electronic media, and literature written in English. Notes: All tours are optional, and may be replaced by specified work conducted on campus. May be repeated for a maximum of 12 credits with permission of department, but no more than 6 credits of ENGH 699 may be applied to master's degree in English. No more than 3 credits of ENGH 699 may be applied to literature requirement for MFA degree. Offered by English (p. 359). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: Admission to MFA program or permission of department. Other interested graduate students should contact the English Department at (703) 993-1180.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Creative Writing.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 702: Research Methods in Rhetoric and Writing. 3 credits.
Explores a variety of text-based and empirical approaches and methods for addressing questions and problems related to public rhetoric and writing programs. Seminar participants work through a complete research design and pilot study. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
George Mason University

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 705: Literary Theory and Criticism. 3 credits.
Major theories of literature and methods of analyzing and evaluating literary works. Notes: Topics vary. May be repeated when topic is different with permission of department. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 710: Core Readings in Writing Studies. 3 credits.
Provides students new to the PhD in Writing and Rhetoric with the opportunity to read widely in the fields of composition, professional writing, and public rhetoric. Students will examine and develop graduate-level reading practices, while exploring the main subfields of writing studies. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ENGH 720: Histories of Institutional Rhetorics. 3 credits.
Examines the development of rhetoric within their historical and institutional contexts. Investigates rhetoric and rhetoricians across the development of oral rhetoric and the shift to written genres, the rise of scientific discourses, and the establishment of educational and bureaucratic organizations. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 722: Composition Pedagogies and Programs in Context. 3 credits.
Examines scholarship on pedagogy, curriculum design and assessment, faculty development, and program management related to the practice of teaching or training writers in an institutional setting: two- and four-year colleges, K-12 schools, and workplace training seminars. Students will complete independent projects analyzing a current or potential writing program. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 724: Professional Writing Theory and Research. 3 credits.
Examines current research in the field and the theories that inform it. Special emphasis is placed on workplace contexts and users in technological contexts. Course may include theories and methods such as activity theory, actor-network theory, complexity theory, cross-cultural rhetoric, digital rhetoric, discourse analysis, ethnography, genre theory, usability, and systems theory. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 726: Rhetorical Theory and Public Spaces. 3 credits.
Covers the major theories of public rhetoric and the public sphere; explores how rhetoric influences public perceptions; examines publics as a site of interpretive mediation. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 740: Seminar in English/Cultural Studies. 3 credits.
Recommended Prerequisite: 9 credits of graduate English credits, ENGH 500, or permission of department.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 750: Advanced Workshop in Poetry Writing. 3 credits.
Intensive practice in craft of poetry for experienced writers. Notes: May be repeated for credit with permission of department. Offered by English (p. 359). May be repeated within the degree.

Recommended Prerequisite: Admission to MFA concentration in poetry, ENGL 564/ENGH 564, and ENGL 617/ENGH 617.

Registration Restrictions:
Enrollment is limited to students with a major in Creative Writing.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGL 565/ENGH 565 and ENGL 618/ENGH 618.

ENGL 751: Advanced Workshop in Fiction Writing. 1-6 credits.
Intensive practice in craft of fiction for experienced writers. Notes: May be repeated for credit with permission of department. Offered by English (p. 359). May be repeated within the degree.

Recommended Prerequisite: ENGL 566/ENGH 566, and ENGL 618/ENGH 618.

Registration Restrictions:
Enrollment is limited to students with a major in Creative Writing.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGL 566/ENGH 566, and ENGL 618/ENGH 618.

ENGL 752: Advanced Workshop in Nonfiction Writing. 1-6 credits.
Intensive practice in craft of nonfiction for experienced writers. Notes: May be repeated for credit with permission of department. Offered by English (p. 359). May be repeated within the degree.

Recommended Prerequisite: ENGL 565/ENGH 565 and ENGL 616/ENGH 616.

Registration Restrictions:
Enrollment is limited to students with a major in Creative Writing.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGL 565/ENGH 565 and ENGL 616/ENGH 616.

ENGL 753: Advanced Workshop in Projects in Professional Writing and Rhetoric. 3 credits.
Students complete a capstone project guided by instructor and a faculty consultant. Reflecting on theories and methods learned in previous course work and applying them to a concrete rhetorical situation, students produce a professional-quality project for a primary audience located in the professional workplace or the discipline of rhetoric and professional writing. Offered by English (p. 359). May not be repeated for credit.

Recommended Prerequisite: 21 credits in MA coursework including core, theory, PWR and Writing requirements, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ENGL 754: Directed Reading and Research. 1-6 credits.
Reading, research, and writing on specific project under direction of department member. Notes: Oral or written report required. For MA students: May be repeated for a maximum of 6 credits with permission of department. For MFA students: 12 credits may be applied to the MFA requirements but no more than 3 credits may count toward completing the literature requirement. Offered by English (p. 359). May be repeated within the degree.

Recommended Prerequisite: 21 credits in MA coursework, including the core, theory, PWR and Writing requirements, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ENGL 755: Seminar. 1-6 credits.
Students complete a capstone project guided by instructor and a faculty consultant based on work produced in a previous graduate course. Class meetings focus on building skills in research, revision, and editing, discussing topics related to professionalization both in and out of academia, and revising work in a workshop environment. Students will produce a professional-quality article or similar final project. Offered by English (p. 359). May not be repeated for credit.

Recommended Prerequisite: 21 credits in MA coursework including core, theory, PWR and Writing requirements, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Graduate Special scale. (p. 84)

ENGL 756: Thesis. 1-6 credits.
Students who take ENGL 798 to develop thesis topic and then elect thesis option receive 3 credits for ENGL 799 on completion of thesis. Students who do not take ENGL 798, or who take it to work on project unrelated to thesis, receive up to 6 credits for ENGL 799 on completion of thesis. Offered by English (p. 359). May be repeated within the degree.

Recommended Prerequisite: Enrollment is limited to Graduate or Non-Degree level students.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

ENGH 820: Studies in Rhetorical Theory and Practice. 3 credits.
Offers advanced study of rhetorical theory, histories of rhetoric, key figures in rhetoric, or rhetorical methods. Notes: May be repeated for credit when topic is different. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 821: Writing Program Design and Administration. 3 credits.
Examines the theory and practice of writing program leadership. Investigates the principles that inform faculty support, curriculum development, program assessment, institutional alignment, and leadership approaches with regard to administering writing instruction. Offered by English (p. 359). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

900 Level Courses

ENGH 826: Studies in Public Rhetorics. 3 credits.
Offers advanced study of theoretical, practical, or pedagogical topics related to public rhetorics. Notes: May be repeated for credit when topic is different. Offered by English (p. 359). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ENGH 897: Directed Research. 1-3 credits.
Reading, research, and writing on a specific project under direction of faculty member. Offered by English (p. 359). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Completion of 36 credits in coursework in the writing and rhetoric PhD Program.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ENGH 998: Doctoral Dissertation Proposal. 1-6 credits.
Work on research proposal that forms the basis for the doctoral dissertation. Offered by English (p. 359). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ENGH 999: Doctoral Dissertation. 1-12 credits.
Doctoral dissertation research and writing under direction of student’s dissertation committee. Offered by English (p. 359). May be repeated within the degree for a maximum 21 credits.

Recommended Prerequisite: ENGH 898.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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### English for Academic Purposes (EAP)

#### 000 Level Courses

**EAP 097: Verbal Preparation for the Graduate Record Examination.** 0 credits.
Prepares students in the International Graduate Pathways requiring the general Graduate Record Examination test for progression to take the computer adaptive version of the exam where the emphasis is placed primarily on the verbal section. This course primarily emphasizes the verbal portion of the exam along with test language and testing strategies; identifying common test-taking errors; and managing in test anxiety. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 0 credits. Equivalent to INYO 095, INYO 096, INYO 097.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EAP 098: Individualized Language Instruction.** 0 credits.
Individualized language instruction for Pathway students. Focus on reading, writing, listening, and speaking skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 4 credits.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EAP 099: Individualized Language Instruction.** 0 credits.
Individualized language instruction for Pathway students. Focus on reading, writing, listening, and speaking skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 4 credits.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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### 100 Level Courses

**EAP 100: Special Topics.** 0-8 credits.
EAP 100 is to be used as an incubator for special topics courses under development in the Undergraduate Pathway program at INTO Mason. EAP 100 will be used for the various content-based English Language Support courses that are paired with major or content courses required by Undergraduate Pathways students. Language support courses such as EAP 100 run concurrently with credit-bearing undergraduate content course. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 12 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EAP 101: Language Support for Fundamentals of Communication.** 1 credit.
Academic Language support course for Fundamentals of Communication. Focus on increasing students’ comprehension and use of key grammatical structures, vocabulary, word forms, and reading/annotation strategies in oral speech and group discussions. Notes: Students must attain minimum grade of C to fulfill program requirements. Offered by INTO Mason (p. 130). Limited to three attempts.

**Recommended Corequisite:** COMM 101

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EAP 102: Language Support for American Cultures.** 1 credit.
Academic language support course for Undergraduate Pathways students taking American Cultures. Designed to increase students’ ability to comprehend and respond to readings, discussions, and lectures related to American Cultures. Emphasizes the development of successful strategies for intrapersonal and small/large group communication activities, student familiarity with anthropological and sociological terminology and effective application of reading/annotating strategies. Also listed as PROV 102. Notes: Students must attain minimum grade of C to fulfill program requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

**Recommended Corequisite:** PROV 105.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EAP 103: Language Support for Public Speaking.** 1 credit.
Academic language support course for Public Speaking. Focus on increasing students’ comprehension and use of key grammatical structures, vocabulary, word forms, and reading/annotating strategies in oral speech. Notes: Students must attain minimum grade of C to fulfill program requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

**Recommended Corequisite:** COMM 100.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EAP 104: Language Support World History.** 1 credit.
Academic language support course for Introduction to World History. Focus on increasing students’ comprehension and use of key grammatical structures, vocabulary, word forms, and reading/annotating strategies in literacy/reading. Notes: Students must attain minimum grade of C to fulfill program requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

**Recommended Corequisite:** HIST 125.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
EAP 111: The Grammar of Academic Writing. 3 credits.
This course is designed to improve students' understanding of written language and to provide mechanisms that allow students to take advantage of this flexible but structured form of communication. Providing this knowledge and these tools will improve students' abilities to identify and correct grammatical mistakes, write cohesive and coherent paragraphs, and condense essential information-necessary skills for effective academic writing. Offered by INTO Mason (p. 130). May be repeated within the degree.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EAP 108: Language Support for Business in American Society. 1 credit.
Academic language support course for Undergraduate Pathway students taking Business in American Society. This course is designed to increase students' ability to read and analyze qualitative and quantitative information, understand and use business terminology, and utilize oral English fluency and literacy practices/strategies in anticipation of group discussions, debates, and oral/written critiques of business-related current events. Also listed as PROV 108. Notes: Students must attain minimum grade of C to fulfill program requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

Recommended Corequisite: SOM 100.
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EAP 109: College Reading Skills. 1 credit.
Academic reading support for Undergraduate Pathways students in specific pathways. Designed to increase students' ability to read, summarize, and analyze texts, including information graphics and visuals. Focuses on student comprehension and utilization of discipline-specific genres/terminology and effective literacy practices/strategies in anticipation of group discussions, reading research, and responding to writing assignments. Also listed as PROV 109. Notes: Students must attain minimum grade of C to fulfill program requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EAP 110: Language Support for Introduction to Computer Programming. 1 credit.
Academic language support for Undergraduate Pathways students taking Introduction to Computer Programming. This course is designed to increase students' ability to respond accurately to computer programming problems in English, understand and use programming terminology, and utilize oral English fluency and literacy practices/strategies in anticipation of class lectures, lab work, individual assignments, and online discussion boards. Also listed as PROV 110. Notes: Students must attain minimum grade of C to fulfill program requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

Recommended Corequisite: CS 112.
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EAP 111: Language Support for Introductory Geology I. 1 credit.
Academic language support for Undergraduate Pathways students taking Introductory Geology I. This course is designed to increase students' ability to read and comprehend qualitative and quantitative information, understand and use general science and chemistry-related terminology, and utilize oral English fluency and literacy practices/strategies in anticipation of class lectures, lab/recitation work, and online discussion boards. Also listed as PROV 111. Notes: Students must attain minimum grade of C to fulfill requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

Recommended Corequisite: CHEM 211.
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EAP 112: Language Support for General Chemistry I. 1 credit.
Academic language support for Undergraduate Pathways students taking General Chemistry I. This course is designed to increase students' ability to read and comprehend qualitative and quantitative information, understand and use general science and chemistry-related terminology, set-up and solve numerical problems in English, and take notes from oral lectures and textbook chapters. Also listed as PROV 112. Notes: Students must attain minimum grade of C to fulfill requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

Recommended Corequisite: IT 101.
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
information in English, understand and use general science and geology-related terminology, take notes from oral lectures and textbook chapters, and participate in group discussions. Also listed as PROV 115. Notes: Students must attain minimum grade of C to fulfill program requirements. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

**Recommended Corequisite:** GEOL 101.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EAP 120: Linguistics Capstone.** 0 credits.

Required to complete all standard undergraduate pathways. Provides students with opportunity to demonstrate mastery of English language skills in reading, writing, speaking, listening, grammar and/or vocabulary. Builds on work in language support classes. Includes language assessment, feedback on skills, and review of post-program support. Required during second semester of the Undergraduate Pathways program. Also listed as PROV 120. Notes: A passing grade of "S" confirms the student's English language proficiency is sufficient for degree-seeking study. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 0 credits.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**400 Level Courses**

**EAP 403: Interpersonal Communication for International Students.** 2 credits.

This 8-week course requires that students use intensive practice in oral communication contexts typical at American universities to build knowledge and skills for informal interpersonal communication settings with faculty, peers, and students, and skills needed for formal presentations, class discussion, and tutoring. Readings and assignments cover research on first impression management; informative and explanatory communication; conveying emotional support; and listening, and narrative skill. Offered by INTO Mason (p. 130). Limited to two attempts. Equivalent to EAP 503, PROV 503.

**Recommended Prerequisite:** Completion of undergraduate degree at a university outside of the US.

**Recommended Corequisite:** Admission to INTO Mason pathway program or with permission of INTO Mason.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EAP 404: Advanced English for Academic Purposes in Reading and Writing.** 2 credits.

This 8-week course is designed for graduate international students who are studying abroad in the U.S., emphasizing advanced skill development in graduate-level English for Academic Purposes for reading and writing within their disciplines. Utilizing a multimodal and interactive format, students will complete guided and independent research papers as well as read, discuss and write about excerpts from college texts and academic journals. Notes: In as much as possible, materials for the course will be discipline specific and individualized course goals will be determined by the needs of the students and their cultural experiences.

Offered by INTO Mason (p. 130). Limited to two attempts. Equivalent to EAP 504.

**Recommended Prerequisite:** Completion of undergraduate degree at a university outside of the US.

**Recommended Corequisite:** Admission to INTO Mason pathway program or with permission of INTO Mason.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EAP 405: Special Topics in Advanced English for Academic Purposes.** 1-6 credits.

This special topics course is tailored to international students who received their undergraduate degrees outside the United States. The course provides intensive practice and individualized feedback in advanced communication methods appropriate at the graduate level. Offered by INTO Mason (p. 130). May be repeated within the term for a maximum 6 credits. Equivalent to EAP 505.

**Recommended Prerequisite:** Completion of undergraduate degree at a university outside of the US.

**Recommended Corequisite:** Admission to INTO Mason pathway program or with permission of INTO Mason.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**EAP 503: Interpersonal Communication for International Students: Practicum and Theory.** 2 credits.

The course requires that students use intensive practice in oral communication contexts typical at universities to build knowledge and skills for informal interpersonal communication settings with faculty, peers, and students, and skills needed for formal presentations, class discussion, and tutoring. Readings & assignments cover research on first impression management; informative and explanatory communication; conveying emotional support; listening, and narrative skill. Offered by INTO Mason (p. 130). May not be repeated for credit. Equivalent to EAP 403.

**Recommended Prerequisite:** Completion of undergraduate degree at a university outside of the US.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
EAP 504: Advanced English for Academic Purposes Reading and Writing. 2 credits.
This 8-week course is designed for graduate international students who are studying abroad, emphasizing advanced skill development in graduate-level English for Academic Purposes for reading and writing within their disciplines. Utilizing a multimodal and interactive format, students will complete guided and independent research papers as well as read, discuss and write about excerpts from college texts and academic journals. Notes: In as much as possible, materials for the course will be discipline specific and individualized course goals will be determined by the needs of the students and their cultural experiences. Offered by INTO Mason (p. 130). May not be repeated for credit. Equivalent to EAP 404.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to English Language, Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EAP 505: Special Topics in Advanced English for Academic Purposes. 2 credits.
This special topics course is tailored to international students who received their undergraduate degrees outside the United States. The course provides intensive practice and individualized feedback in advanced communication methods appropriate at the graduate level. Offered by INTO Mason (p. 130). May not be repeated for credit.

Recommended Prerequisite: Completion of undergraduate degree at a university outside of the US.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EAP 506: Graduate Communication in the Disciplines I. 4 credits.
Students develop strategies for completing research-based writing and presentations in their field and review rhetorical structures and organizational strategies common to US scholarly communications generally and in their particular field. Students will practice strategies at the sentence and discourse levels to increase the clarity, precision, and appropriateness of their communication skills. Group instruction will be supplemented by one-on-one conferencing. Offered by INTO Mason (p. 130). May not be repeated for credit.

Recommended Prerequisite: Completion of undergraduate degree at a university outside the United States.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to English Language, Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EAP 507: Graduate Communication in the Disciplines II. 3-4 credits.
The second course in a series that helps students develop strategies for completing research-based writing and presentations in their field. Students will review rhetorical structures and organizational strategies common to US scholarly communications generally and in their particular field. Students will also practice strategies at sentence and discourse levels to increase the clarity, precision, and appropriateness of their communication skills. Offered by INTO Mason (p. 130). May not be repeated for credit.

Recommended Prerequisite: EAP 506.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EAP 508: Graduate Communication in the Disciplines III. 4 credits.
Students develop strategies for completing research-based writing and presentations in their field. Students will review rhetorical structures and organizational strategies common to US academic scholarly communications generally and in their particular field. Students will also review and practice strategies at the sentence and discourse levels to increase the clarity, precision, and appropriateness of their oral and written communication skills. Group instruction will be supplemented by one-on-one conferencing as students complete a major graduate-level project. Notes: This course may not count towards academic degree requirements at the graduate level without permission from the academic dean/director. Offered by INTO Mason (p. 130). May not be repeated for credit.

Recommended Prerequisite: Completion of undergraduate degree at a university outside the United States.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EAP 510: Linguistic Capstone. 0 credits.
Course builds on work in language support classes throughout the program and enables students to demonstrate acceptable mastery of their academic English language skills in reading, writing, speaking, listening, grammar, and vocabulary. Students take proficiency assessment receive feedback on skills, and review post-program language support resources. Offered by INTO Mason (p. 130). May not be repeated for credit.

Recommended Prerequisite: Standard pathway students must have completed first semester of program, or at least 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Environmental Science and Policy (EVPP)

100 Level Courses

EVPP 108: Ecosphere - Introduction to Environmental Science I-Lecture. 3 credits.
This course studies components and interactions that make up natural systems of our home planet. It teaches basic concepts in biological, chemical, physical, and earth sciences in integrated format with lecture, laboratory, and field exercises. Note: EVPP 108 and 109 can be used to fulfill a 4-credit lab science requirement. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 109: Ecosphere - Introduction to Environmental Science I-Lab. 1 credit.
This course studies components and interactions that make up natural systems of our home planet. It teaches basic concepts in biological, chemical, physical, and earth sciences in a laboratory format.

Note: EVPP 108 and 109 can be used to fulfill a 4-credit lab science requirement. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 110: The Ecosphere: An Introduction to Environmental Science I. 4 credits.
Studies components and interactions that make up natural systems of our home planet. Teaches basic concepts in biological, chemical, physical, and earth sciences in integrated format with lecture, laboratory, and field exercises. Notes: One of two semesters of environmental lab science that fulfills Mason Core science requirements for non science majors. Along with EVPP 111, can be taken in any order. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Mason Core: Natural Science with Lab, Encore: Sustainability (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 111: The Ecosphere: An Introduction to Environmental Science II. 4 credits.
Studies components and interactions that make up natural systems of our home planet. Teaches basic concepts in biological, chemical, physical, and Earth sciences in integrated format with lecture, laboratory, and field exercises. Notes: One of two semesters of environmental lab science that fulfills Mason Core science requirements for non science majors. Along with EVPP 110, can be taken in any order. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Mason Core: Natural Science with Lab, Encore: Sustainability (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 112: Ecosphere: Introduction to Environmental Science II-Lecture. 3 credits.
Studies components and interactions that make up natural systems of our home planet. Teaches basic concepts in biological, chemical, physical, and Earth sciences in lecture format, focusing on major environmental issues from a scientific perspective. Note: EVPP 112 and 113 can be used to fulfill a 4-credit lab science requirement. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: EVPP 113 (may be taken concurrently)
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 113: Ecosphere: Introduction to Environmental Science II–Lab.** 1 credit.
Studies components and interactions that make up natural systems of our home planet. Teaches basic concepts in biological, chemical, physical, and Earth sciences in a hands-on laboratory format, focusing on major environmental issues from a scientific perspective. Note: EVPP 112 and 113 can be used to fulfill a 4-credit lab science requirement. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Mason Core:** Natural Science with Lab (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Recommended Prerequisite:** EVPP 112

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**EVPP 201: Environment and You: Issues for the Twenty-First Century.** 3 credits.
Introduces broad aspects of human-environmental interactions in the contemporary world. Topics range broadly from global populations and wastewater treatment to environmental law, and genetic engineering. Includes both science and science policy of the environment. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Mason Core:** Natural Science Overview, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 210: Environmental Biology: Molecules and Cells.** 4 credits.
This course provides environmental science majors with the cellular foundation required for subsequent courses in the BS curriculum with a focus on how biological systems respond to environmental threats. The course emphasizes the connection between cellular processes and a healthy environment, and how this relationship is jeopardized by a variety of chemical and physical environmental perturbations. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Recommended Corequisite:** CHEM 211.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**EVPP 301: Environmental Science: Biological Diversity and Ecosystems.** 4 credits.
This course provides environmental science majors with the necessary background in biological diversity and ecological science required for subsequent courses in the BS curriculum. The course reviews the diversity of life on earth and the structure and functioning of ecosystems and populations. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:
Required Prerequisite:** EVPP 210C.

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 302: Environmental Science: Biomes and Human Dimensions.** 4 credits.
This course provides environmental science majors with the necessary background in biomes and human dimensions required for subsequent courses in the BS curriculum. The course reviews the functioning of aquatic and terrestrial biomes and human interactions with and impacts on the environment. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:
Required Prerequisite:** EVPP 301C.

**Recommended Prerequisite:** EVPP 210 and 30 credit hours, or permission of instructor;

**Recommended Corequisite:** EVPP 306.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 305: Environmental Microbiology Essentials.** 3 credits.
Provides understanding of microbes and their function as a vital part of an environmental education. The role of microbes is central to many environmental issues such as climate change, biodegradation of toxics, wastewater treatment and drinking water contamination. Course provides an introduction to the breadth of microbiology including essential information for students studying environmental problems and their solution. Notes: Laboratory section (EVPP 306) is a corequisite unless previously completed. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Recommended Prerequisite:** EVPP 210 and 30 credit hours, or permission of instructor;

**Recommended Corequisite:** EVPP 306.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 306: Environmental Microbiology Essentials Laboratory.** 1 credit.
Laboratory study of environmental microbiology. Course provides an introduction to the microbial techniques for students studying environmental problems and their solution. Examples include microbiology of natural ecosystems (e.g., Potomac River), bacteria in fresh and estuarine waters and sediments, Indicator organisms (e.g., coliform bacteria), molecular identification of unknown bacteria from nature, and visualization of bacteria in their natural habitat. Notes: Lecture section (EVPP 305) is a corequisite. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.
Recommended Prerequisite: EVPP 210 and 30 credit hours, or permission of instructor.

Recommended Corequisite: EVPP 305.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 309: Introduction to Oceanography. 3 credits.
Introduction to chemical, biological, and geological aspects of oceanic environment. May include field trips. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 309, GEOL 309.

Recommended Prerequisite: Two of the following lab sciences courses are required for a total of 8 credits: [GEOL 101 or 102], [EVPP 110 or 111 or 210], CHEM 211 and 213, [BIOL 103 or 213], [PHYS 160 and 161 or 243 and 244].

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 318: Conservation Biology. 3 credits.
Introduces science used to identify species in need of conservation, and techniques to manage and protect organisms. Notes: Cannot be taken with Smithsonian Seminar (off campus classes). CONS 401, CONS 411. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 318.

Recommended Prerequisite: BIOL 308 or BIOL 310, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 322: Business and Sustainability. 3 credits.
Examines the types of approaches businesses can take to take to respond to sustainability concerns, Designed to prepare students for assisting organizations to incorporate sustainability considerations into their strategic decision-making. Notes: Students from multiple disciplines (business, social sciences, natural sciences, humanities, education, etc.) can participate in the class without having had previous courses in management. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 30 credit hours, recommend EVPP 361/ GOVT 361 Introduction to Environmental Policy

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 336: Human Dimensions of the Environment. 3 credits.
Overview of current knowledge regarding human and environment interactions and human ecology. Topics include basic theoretical and conceptual issues, relationship between social and biological sciences, human causes and consequences of environmental change, and contemporary perspectives on environmental issues. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: One of either EVPP 110 or EVPP 111 or GEOL 101 or SOCI 101 or ANTH 114 or 60 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 337: Environmental Policy Making in Developing Countries. 3 credits.
Overview of environmental policy process in developing countries around the world. Major focus on understanding distinctive problems and dynamics of environmental policy making in poor countries to generate better policy decisions and management. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Specialized Designation: Green Leaf Related Course, Writing Intensive in Major

Recommended Prerequisite: 60 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 338: Economics of Environmental Policy. 3 credits.
Introduction to environmental, resource, and ecological economics for non-economist undergraduates. Covers basic theories of scarce resource allocation and examines conditions under which market allocations are efficient and sustainable. Includes graphical and verbal presentation of theory. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: ECON 100 or ECON 103 or ECON 105 or ECON 110, or permission from instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 350: Freshwater Ecosystems. 4 credits.
Studies physical, chemical, and biological processes in lakes, streams, and wetlands. Lectures, field trips, and lab exercises teach physical and chemical aspects of aquatic systems and life cycles, and adaptations of aquatic organisms. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 350.

Recommended Prerequisite: CHEM 211/ 213 and CHEM 212/214 or CHEM 155/156 and BIOL 308 or EVPP 301.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 355: Ecological Engineering and Ecosystem Restoration. 4 credits.
Provides definition, classification, and practice of ecological engineering and ecosystem restoration. Describes general system ecology, ecosystem restoration (i.e., wetland and river systems), and the use of
natural processes to provide ecosystem services to society. Provides students with a systems-oriented perspective on designing and managing ecosystems. Students will study principles in designing field ecological studies, ecological models, ecological engineering, and explore practices in sustainable ecological design by carrying out a hands-on experimental design project with the field wetland mesocosm on the Mason campus. One field trip is required part of the course. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** BIOL 301 or EVPP 301 or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 361:** *Introduction to Environmental Policy.* 3 credits.
Environmental politics and policymaking since the 1970s. Primary focus on United States, with some discussion of global issues. Examines policy strategies and outcomes, ethical and economic debates, political controversies, lawmaking and enforcement, and role of key players. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to GOVT 361.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** 30 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 362:** *Intermediate Environmental Policy.* 3 credits.
Examines environmental issues building on learning objectives from EVPP 361. Focuses on environmental and policy issues in the US and internationally, exploring the politics of nature and the interaction of environmental science and politics and resulting controversy. Risk and uncertainty loom large in most environmental issues. "Natural" disasters as well as direct "man-made" problems will be covered. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to GOVT 362.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** EVPP 361 or GOVT 361 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 363:** *Coastal Morphology and Processes.* 4 credits.
Studies global coastal geomorphology and processes with emphasis on U.S. Atlantic and gulf coasts. Topics include plate tectonics; sea-level changes; sediment supply; impact of waves, tides, and storms; and human activities. Lectures and extended weekend field trips to mid-Atlantic coast. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to GEOL 363.

**Recommended Prerequisite:** BIOL/EVPP/GEOL 309 or GEOL 317; or 9 credits in geography, including GGS 309.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 377:** *Applied Ecology.* 3 credits.
Introduces ecosystem concepts and applications to natural and managed ecosystems. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 377.

**Recommended Prerequisite:** 60 credits including 8 credits of biology, geology, or chemistry, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 378:** *RS: Ecological Sustainability.* 4 credits.
Introduces the concepts and applications of several important topics relating to ecological sustainability. Focuses on the role of soils in maintaining and managing environmental quality. Teaches students how to understand and interpret scientific data presented in various types of literature covering ecological sustainability. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 379.

**Mason Core:** Capstone (p. 142)

**Specialized Designation:** Green Leaf Focused Course, Research/Scholarship Intensive

**Recommended Prerequisite:** BIOL 308 or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 395:** *Undergraduate Research in Environmental Science and Policy.* 1-3 credits.
Original research project. May involve field and lab study, computer modeling and analysis, or other original research as appropriate. Research formulated and completed under instructor’s guidance. Notes: May be repeated within the degree for a maximum 10 credits.

**Recommended Prerequisite:** 45 credits and at least two upper level science lab courses.

**Schedule Type:** Research

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 396:** *Directed Topic in Environmental Science and Policy.* 1-4 credits.
Study of topics not available in fixed-topics courses. May involve readings, lectures, lab assignments, and tutorials as jointly agreed on by student and instructor. Notes: Culminates in term paper, final exam, or both. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree for a maximum 8 credits.

**Recommended Prerequisite:** 45 credits.
Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

**EVPP 401: Integrated Environmental Assessment.** 3 credits.
Provides a modern, comprehensive knowledge of fungal biology including classification, phylogeny, structure, physiology/metabolism, growth and development, genetics, industrial applications including biotechnology, ecological roles including pathogenic interactions with plants, animals, and man. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 402.

**Recommended Prerequisite:** BIOL 213, 305, 306 or EVPP 210, 305, 306, CHEM 211 and CHEM 213; CHEM 212 and CHEM 214, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 402: Applied and Industrial Microbiology.** 3 credits.
Biology of microorganisms of ecological and industrial significance. Includes food production, spoilage and preservation, fermentation technology, waste disposal, water purification, biodeterioration, and decomposition. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 402.

**Recommended Prerequisite:** BIOL 210 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 403: Mushrooms, Molds and Society.** 3 credits.
Introduces theory and methods for the preparation of tissue samples from animal or plant specimens for examination with light or electron microscopy. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Recommended Prerequisite:** EVPP 210 or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 404: Marine Mammal Biology and Conservation Field Course.** 1 credit.
This course provides laboratory, seminar sessions and field work to accompany EVPP 419-001 - marine mammal biology and conservation. Field work includes several day-long boat trips. The field course may take place in the US or abroad. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 445.

**Recommended Prerequisite:** EVPP 419 or BIOL 454, concurrent enrollment is permitted.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 405: Marine Conservation.** 3 credits.
Provides an overview of threats to the marine environment, and discusses the scientific, socioeconomic, and political issues behind marine conservation. Covers categories of marine pollutants (chemical, biological, and physical contaminants) and their impacts on the marine ecosystem, as well as impacts on humans (health, social, and economic), threats to key marine species (e.g., coral, sharks, turtles, and marine mammals) and initiatives and laws developed to reduce these threats. Scientific and socioeconomic problems that hinder sustainable fisheries management and the science and policy behind the global warming debate are also discussed. Provides an overview of marine environmental law and policy issues related to marine conservation policy. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 405.

**Specialized Designation:** Green Leaf Focused Course
Recommended Prerequisite: BIOL/EVPP/GEOL 309.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 423: Beekeeping and Sustainability. 3 credits.
Lectures and hands-on field experiences examining beekeeping as a tool for sustainable development. Also, they will examine the social impact and implications of beekeeping around the world, and explore its current place in the modern socio-economic structure. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 412: Disease Ecology and Conservation. 3 credits.
Presents the trans-disciplinary discipline of conservation medicine, the study of relationships between organism and ecosystem health and environmental conditions. Topics include infectious and noninfectious diseases, pathogens, processes, and impacts on human, biotic, and ecosystem health, and how to address the consequences of diseases to populations and ecological communities. Notes: This course will co-meet with EVPP 527. Undergraduate students in this course will have separate (shorter) reading and writing assignments and will be graded according to a different rubric than the graduate students. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 427.

Recommended Prerequisite: 60 credits and BIOL 213 or BIOL/EVPP 305/306 and BIOL 308 OR EVPP 301, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 429: Environmental Science Communication. 3 credits.
Communicating environmental science is inherently challenging whether in academia, the public policy realm, or to the general public. The aim of this course is to expose students to the multiple ways environmental science can be communicated. Such exposure will be made both through a theoretical approach by examining science communication literature, as well as through practical, hands-on activities and assignments. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Recommended Prerequisite: Completion of 60 credit hours.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 430: Fundamentals of Environmental Geographic Information Systems. 3 credits.
Provides the basic knowledge to explore complex environmental data sets and relationships among biological, ecological, physical and anthropogenic variables using geographic information systems. Using spatial mapping and exploration tools students will be capable of independent analysis of complex environment. Notes: Previous knowledge of fundamentals of geography, coordinate systems and map projections is an asset. Knowledge of operating systems, text editor

Recommended Prerequisite: Completion of 60 credit hours.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 431: Overview of Economic, Political, and Technological Aspects of Energy Policy. 3 credits.
Overview of economic, political, and technological aspects of energy policy development. Students will examine various energy sources in the context of national and global considerations regarding electricity generation, efficiency and conservation, energy economics, and climate change. Updated yearly. The course may include one field trip. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Recommended Prerequisite: 60 credits and EVPP 361/GOVT 361, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 432: Energy Policy. 3 credits.
Overview of economic, political, and technological aspects of energy policy development. Students will examine various energy sources in the context of national and global considerations regarding electricity generation, efficiency and conservation, energy economics, and climate change. Updated yearly. The course may include one field trip. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Recommended Prerequisite: EVPP 336, CLIM 101 and 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 433: Orinthology. 4 credits.
Study of evolution, systematics, physiology, ecology and behavior of birds, emphasizing field work. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 437.

Recommended Prerequisite: BIOL 308 or EVPP 301 or equivalent or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 434: Mammalogy. 4 credits.
Study of evolution, systematics, physiology, ecology and behavior of mammals, emphasizing field work. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 438.
Recommended Prerequisite: BIOL 308 or EVPP 301 or equivalent or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 439: Herpetology. 4 credits.
Study of evolution, systematics, physiology, ecology and behavior of reptiles, emphasizing field work. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 439.

Recommended Prerequisite: BIOL 308 or EVPP 301 or equivalent or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 440: Field Environmental Science. 0-4 credits.
Directed field studies emphasizing ecology and behavior. Topics vary but include design of field manipulations, data collection and analysis, and introduction to organisms of study site. Notes: Students bear cost of required field trips. May be repeated with permission of Environmental Science and Policy. Offered by Environmental Science & Policy (p. 687). May be repeated within the term for a maximum 9 credits. Equivalent to BIOL 440.

Recommended Prerequisite: EVPP 301 or permission of instructor.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 442: Urban Ecosystems and Processes. 4 credits.
Provides an overview of the challenges and opportunities that urban environments present to the plants and animals inhabiting cities and the ways that those organisms and entire ecosystems respond. Includes ecosystem ecology for engineered ecosystems, along with reviews of urban metabolism, energy budgets, water cycles, and soil ecology. Students design and conduct a small-scale green infrastructure experiment/project on campus. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 442.

Recommended Corequisite: Prereqs: CHEM 211 and CHEM 213; MATH 113 or equivalent; BIOL 308 or EVPP 301; PHYS 243 or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 445: Principles of Environmental Toxicology. 3 credits.
Explores basic principles of toxicology with an emphasis on the environment. Includes the history and scope of the field; absorption, distribution, metabolism and excretion of toxicants; mechanisms of toxic action; genetic toxicology; ecotoxicology as well as specific examples important toxicants. Introduces regulatory toxicology and human and ecological risk assessment. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Recommended Prerequisite: EVPP 210 or both EVPP 110 and 111; and CHEM 211 and CHEM 212; and 60 credit hours; or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 449: Marine Ecology. 3 credits.
Plants and animals of marine environments and physical and chemical conditions that affect their existence. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 449.

Recommended Prerequisite: BIOL 308 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 451: Fungi and Ecosystems. 3 credits.
Considers impact of fungi on ecosystems in terms of effects on biogeochemical cycling, primary and secondary production, and regulating community structure and populations of individual species through activities as symbionts and parasites. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

Recommended Prerequisite: EVPP 301 or BIOL 308 or EVPP/BIOL 305/306; or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 460: Infectious Diseases of Wildlife. 3 credits.
During this course, infectious diseases of wildlife will be examined with emphasis on causes and mechanisms, pathobiology, ecology and epidemiology and population significance. We will explore methods of diagnosis, control, prevention and outbreak investigation as they apply to management and conservation of wildlife populations. Also, diseases crossing species barriers will be examined. Note: Course will co-meet with BIOL 560/EVPP 560. Graduate students in this course will be graded according to a different rubric than the undergraduate students. Offered by Environmental Science & Policy (p. 687). Limited to three attempts. Equivalent to BIOL 460.

Recommended Prerequisite: 60 credits plus BIOL 308 or EVPP 301 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EVPP 472: Tools and Techniques for International Development. 3 credits.
Systematic and comprehensive understanding of key concepts and skills essential to effective project management in international development. The skill set learned is oriented towards a ‘how-to-do/functional’ approach that can be applied to projects on environment, poverty reduction, green growth, health, climate change adaptation and mitigation, social development and more. Notes: This course will co-meet with EVPP 572. Graduate students in this course will be graded...
according to a different rubric than the undergraduate students. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 475: Global Biodiversity Governance.** 3 credits.
Study global biodiversity governance from a political/policy science perspective. Regime and governance literature, and empirical examples including intergovernmental policy, such as biodiversity-related climate change policy (REDD+), and certification standards, such as the Forest Stewardship Council (FSC), will be examined, with guest lecturers and a simulation of an intergovernmental negotiation. Designated a Green Leaf Course. Notes: This course will co-meet with EVPP 575. Undergraduate students in this course will be graded according to a different rubric than the graduate students. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** One (environmental) social science course.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 480: Sustainability in Action.** 4 credits.
Provide students with valuable and tangible experience in practical aspects of realizing sustainability goals and to transfer theory into practice. Allows students to engage in real-world, sustainability-related projects that provide benefits for a target community. Identify and attempt to solve a sustainability-related problem or address a sustainability-related need in a specific target community. Notes: Capstone course for the Sustainability Minor see Environmental Science and Policy department listing for details. Offered by Environmental Science & Policy (p. 687). Limited to three attempts.

**Mason Core:** Encore: Sustainability, Synthesis (p. 142)

**Specialized Designation:** Green Leaf Focused Course, Scholarly Inquiry.

**Recommended Prerequisite:** Completed or concurrent enrollment in all other required Mason Core courses; completion of 60 credits

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 490: Special Topics in Environmental Science and Policy.** 0-4 credits.
Studies selected topics in environmental science and policy using lectures, guest lectures, student presentations, or laboratory exercises. Notes: Topics vary, but each offering has a coherent syllabus. May be repeated for credit if topics are significantly different. Offered by Environmental Science & Policy (p. 687). May be repeated within the term for a maximum 8 credits.

**Recommended Prerequisite:** 60 credits and permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 491: Special Topics Lab.** 1-2 credits.
Explores selected in environmental science and policy using laboratory exercises. Offered by Environmental Science & Policy (p. 687). May be repeated within the term for a maximum 4 credits.

**Recommended Prerequisite:** 60 credits or permission of instructor

**Recommended Corequisite:** EVPP 490

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EVPP 494: Internship.** 1-3 credits.
Involves off-campus, professional student work with approved agencies, institutions, non-profits, or businesses. Work must produce one or more academic products such as: comprehensive report, departmental presentation, poster, or article. At least one substantive piece of work will be assessed for each internship credit being undertaken. Scope of work, credits, and academic product(s) are determined in consultation with the internship instructor. Notes: Credit will be assigned based on the number of hours participating in the internship each week: 1 Credit = 4-6 hours/week, 2 Credits = 8-12 hours/week, 3 Credits = 12-18 hours/week. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 60 credits and permission of instructor.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**EVPP 503: Field Mapping Techniques.** 3 credits.
Basic techniques for collecting, recording, and plotting spatial field data, including topographic maps, compass, transit, alidade, and global positioning systems. Field work and field-based research project. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to GEOL 506, GEOL 553.

**Recommended Prerequisite:** MATH 105 or equivalent, EVSC 110, GGS 102, or GEOL 101 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 505: Selected Topics in Environmental Science.** 0-4 credits.
Topic depends on instructor’s specialty. Offered by Environmental Science & Policy (p. 687). May be repeated within the term for a maximum 9 credits.


Recommended Prerequisite: A course in Geology or Ecology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 506: Science of the Environment I. 3 credits.
Environmental science is explored in this 2-semester sequence providing the foundation in chemistry (I) and biology (II) required for graduate students with social sciences backgrounds seeking a degree and career in environmental science and policy. Notes: For graduate students entering the Environmental Science and Policy or other programs. Not available to students with undergraduate degrees in the natural sciences. This course is in addition to all other degree requirements. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 507: Science of the Environment II. 3 credits.
Environmental science is explored in this 2-semester sequence providing the foundation in chemistry (I) and biology (II) required for graduate students with social sciences backgrounds seeking a degree and career in environmental science and policy. Notes: For graduate students entering the Environmental Science and Policy or other programs. Not available to students with undergraduate degrees in the natural sciences. This course is in addition to all other degree requirements. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: EVPP 506 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 515: Molecular Environmental Biology I. 3 credits.
Introduces molecular environmental biology covering basic concepts of molecular biology, molecular evolution, and bioinformatics, and application to problems in molecular and environmental biology. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: Introductory biology and genetics or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 518: Conservation Biology. 3 credits.
Introduction to the science used to identify species in need of conservation, and techniques to manage and protect organisms. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: Course in Ecology.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 519: Marine Mammal Biology and Conservation. 3 credits.
Covers the evolution, biology, ecology, and behavior of marine mammals from polar bears to sea otters to whales and dolphins. Marine mammal conservation and policy is also a major component of the course; several lecture sessions are devoted to the issue of whaling, threats to marine mammal populations, and recent conservation issues such as marine mammals and noise pollution. The course also includes a number of guest lectures from a variety of international marine mammal experts. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to EVPP 419.

Recommended Prerequisite: EVPP 506 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 520: Marine Mammal Biology and Conservation Field Course.** 1 credit.
This course provides laboratory, seminar sessions and field work to accompany EVPP 519-001 marine mammal biology and conservation. Field work includes several day-long boat trips. The field course may take place in the US or abroad, including in Scotland at the University (of London) Marine Biological Station, which is equipped with boats and laboratories. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Corequisite:** EVPP 519.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Seminar**

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 521: Marine Conservation.** 3 credits.
Provides an overview of threats to the marine environment, and discusses the scientific, socioeconomic, and political issues behind marine conservation. Covers categories of marine pollutants (chemical, biological, and physical contaminants) and their impacts on the marine ecosystem, as well as impacts on humans (health, social, and economic), threats to key marine species (e.g., coral, sharks, turtles, and marine mammals) and initiatives and laws developed to reduce these threats. Scientific and socioeconomic problems that hinder sustainable fisheries management and the science and policy behind the global warming debate are also discussed. Provides an overview of marine environmental law and policy issues related to marine conservation policy. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Specialized Designation:** Green Leaf Focused Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Lecture**

**EVPP 524: Introduction to Environmental and Resource Economics.** 3 credits.
Introduces theory of external costs and benefits, public goods, natural resource management, and benefit and cost analysis for noneconomists. Lecture-discussion format with student presentations and participation. Analytical problems set, short writing assignments, and exams. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to GGS 524.

**Recommended Prerequisite:** Basic algebra skills.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Lecture**

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 525: Economics of Human/Environment Interactions.** 3 credits.
Advanced topics in environmental, natural resource, and ecological economics for noneconomist. Emphasizes sustainability, intergenerational equity, and economic-ecological feedbacks. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to GGS 525.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** EVPP 524/GGS 524 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Lecture**

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 527: Disease Ecology and Conservation.** 3 credits.
Presents the trans-disciplinary discipline of conservation medicine, the study of relationships between organism and ecosystem health and environmental conditions. Topics include infectious and noninfectious diseases, pathogens, processes, and impacts on human, biotic, and ecosystem health, and how to address the consequences of diseases to populations and ecological communities. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 527.

**Recommended Prerequisite:** Courses in microbiology, ecology, or conservation, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 529: Environmental Science Communication.** 3 credits.
Communicating environmental science is inherently challenging whether in academia, the public policy realm, or to the general public. The aim of this course is to expose students to the multiple ways environmental science can be communicated. Such exposure will be made both through a theoretical approach by examining science communication literature, as well as through practical, hands-on activities and assignments. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 531: Land-use Modeling Techniques and Applications.** 3 credits.
Surveys literature on spatially explicit empirical models of land-use change. Offers hands-on experience developing and running simple models. Includes statistical models, mathematical programming models, cellular automata, agent-based models, and integrated models. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to GGS 531.

**Recommended Prerequisite:** GGS 550 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 532: Animal Behavior.** 3 credits.
Ecological aspects of animal behavior. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 533: Energy Policy.** 3 credits.
Discusses resource options in the context of 3E's: energy security, environment, and economics. Examines how these considerations apply to 3 P's developed by Jennifer Sklarew: priorities, politics, and process. Examines sustainability and environmental angles of resources, reasons for specific nations' policy choices, and possibilities for future energy policies. Considers how energy policies can create cooperation and conflict domestically and internationally. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Specialized Designation:** Green Leaf Focused Course

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 536: The Diversity of Fishes.** 3 credits.
This course delves into the biology and ecology of fishes. Subjects of this class include fish anatomy, taxonomy, evolution, habitat adaptations, community dynamics, and ecosystem interactions. The course will also touch on human impacts on fishes, and conservation. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** Course in ecology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 537: Ornithology.** 4 credits.
Study of evolution, systematics, physiology, ecology, and behavior of birds, emphasizing field work. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** Course in ecology or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)
EVPP 538: Mammalogy. 4 credits.
Study of evolution, systematics, physiology, ecology, and behavior of mammals, emphasizing fieldwork. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 538.

Recommended Prerequisite: BIOL 303 and BIOL 307 or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 539: Herpetology. 4 credits.
Study of evolution, systematics, physiology, ecology, and behavior of amphibians and reptiles, emphasizing field work. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: Course in ecology or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 542: Urban Ecosystems & Processes. 4 credits.
Provides an overview of the challenges and opportunities that urban environments present to the plants and animals inhabiting cities and the ways that those organisms and entire ecosystems respond. Includes ecosystem ecology for engineered ecosystems, along with reviews of urban metabolism, energy budgets, water cycles, and soil ecology. Students design and conduct a small-scale green infrastructure experiment/project on campus. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: CHEM 211 and 213; MATH 113 or equivalent; BIOL 308 or EVPP 302; PHYS 243 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 543: Tropical Ecosystems. 4 credits.
Terrestrial, aquatic, and marine ecosystems in the tropics, emphasizing plant communities, plant-animal interactions, and role of humans in tropics. Notes: Requires field trip to tropics as part of lab. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 543.

Recommended Prerequisite: A course in ecology and permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 545: Principles of Environmental Toxicology. 3 credits.
Explores basic principles of toxicology with an emphasis on the environment, including the history and scope of the field; absorption, distribution, metabolism, and excretion of toxicants; mechanisms of toxic action; genetic toxicology; and ecotoxicology, as well as specific examples of important toxicants. Introduces regulatory toxicology and human and ecological risk assessment. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: Courses in ecology, physiology and chemistry; or permission of instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 549: Marine Ecology. 3 credits.
Presents the Ecology of Marine Ecosystems including from the intertidal zone to the deep sea, and from coral reefs to seagrass beds and polar seas. Overviews the evolutionary characteristics and ecological processes and community structure of species and their habitats; and special problems that confront marine organisms due to anthropogenic change. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: EVPP or BIOL 308 and BIOL/EVPP/GEOL 309 (or the equivalent), or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 550:** Waterscape Ecology and Management. 3 credits.
Studies physical, chemical, and biological components of freshwater ecosystems with emphasis on streams, rivers, and lakes; links between watersheds and freshwater ecosystems; and impact of human management. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 550.

**Recommended Prerequisite:** A course in chemistry and a course in ecology.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 551:** Fungi and Ecosystems. 3 credits.
Considers impact of fungi on ecosystems in terms of effects on biogeochemical cycling, primary and secondary production, and regulating community structure and populations of individual species through activities as symbionts and parasites. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 559.

**Recommended Prerequisite:** BIOL 304 and/or a course in microbiology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 555:** Lab in Waterscape Ecology. 1 credit.
Field and laboratory approaches to freshwater ecology with emphasis on study design, sampling methods, laboratory and data analysis, and report writing. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 555.

**Recommended Prerequisite:** EVPP 550 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 560:** Infectious Diseases of Wildlife. 3 credits.
Examines infectious diseases of wildlife with emphasis on causes and mechanisms, pathobiology, ecology and epidemiology and population significance. Explores methods of diagnosis, control, prevention and outbreak investigation as they apply to management and conservation of wildlife populations. Also, diseases crossing species barriers will be examined. Note: Course will co-meet with BIOL 460/EVPP 460. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 560.

**Recommended Prerequisite:** Courses on evolution, ecology, zoology, and conservation biology or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 563:** Coastal Morphology and Processes. 4 credits.
Studies global coastal geomorphology and processes, emphasizing U.S. Atlantic and gulf coasts. Topics include plate tectonics; sea-level changes; sediment supply; impact of waves, tides, storms; and human activities. Lecture, extended weekend field trips to mid-Atlantic coast. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to GEOL 563.

**Recommended Prerequisite:** Course in Geology, Oceanography, Marine Science, or Physical Geography; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
EVPP 572: Tools and Techniques for International Development. 3 credits.
Systemic and comprehensive understanding of key concepts and
skills essential to effective project management in international
development. The skill set learned is oriented towards a 'how-to: do/
functional' approach that can be applied to projects on environment,
poverty reduction, green growth, health, climate change adaptation and
mitigation, social development and more. Offered by Environmental
Science & Policy (p. 687). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 575: Global Biodiversity Governance. 3 credits.
Study global biodiversity governance from a political/policy science
perspective. Regime and governance literature, and empirical examples
including intergovernmental policy, such as biodiversity-related climate
change policy (REDD+), and certification standards, such as the Forest
Stewardship Council (FSC), will be examined, with guest lecturers and a
simulation of an intergovernmental negotiation. Designated a Green Leaf
Course. Offered by Environmental Science & Policy (p. 687). May not be
repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: One (environmental) social science course.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 577: Biogeochemistry: A Global Perspective. 3 credits.
Structure and function of ecosystems, their interactions as components
of landscapes, and contributions to the global environment. Emphasizes
biogeochemical cycles of natural, disturbed, and managed ecosystems,
and integration at landscape and global level as related to current
ecological problems such as transfer of nonpoint source pollutants,
atmospheric deposition, stratospheric ozone depletion, and global
change. Offered by Environmental Science & Policy (p. 687). May not be
repeated for credit.

Recommended Prerequisite: A course in ecology and a course in
chemistry, or Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 581: Estuarine and Coastal Ecology. 3 credits.
Emphasizes marine biology of estuarine and coastal habitats of
Chesapeake Bay region, and factors affecting distribution and abundance
of organisms. Offered by Environmental Science & Policy (p. 687). May
not be repeated for credit. Equivalent to BIOL 581.

Recommended Prerequisite: Course in ecology and permission of
instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 582: Estuarine and Coastal Ecology Laboratory. 1 credit.
Provides training in field measurement of physical and chemical
parameters, and collection and identification of local organisms.
Emphasizes the practice of ecological field research. Offered by
Environmental Science & Policy (p. 687). May not be repeated for credit.
Equivalent to BIOL 582.

Recommended Corequisite: EVPP/BIOL 581.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

EVPP 607: Fundamentals of Ecology. 3 credits.
Overview of concepts in physiological, population, community,
ecosystem, biogeographical and human ecology. Notes: Restricted to
graduate students with little or no background in ecology. Students who
have taken BIOL 307 or the equivalent elsewhere are ineligible for this
course. Offered by Environmental Science & Policy (p. 687). May not be
repeated for credit. Equivalent to BIOL 607.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 608: Introduction to Environmental Social Science.** 3 credits.
The course Environmental Social Science - ESS - aims to provide insight into the some of the most relevant social sciences and social scientific perspectives for studying environmental issues. The course introduces students to different social scientific disciplines. They will also learn about different social scientific theoretical perspectives and concepts, which they will apply in a research project. Designated a Green Leaf Course. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:**

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 610: Bioremediation: Theory and Applications.** 3 credits.
Provides basis for understanding proper application of bioremedial technologies to treatment of hazardous wastes. Includes evaluation of data to determine successful treatment. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 610.

**Recommended Prerequisite:** Course in microbiology and either organic chemistry or biochemistry or Permission of Instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 615: Molecular Environmental Biology II.** 4 credits.
Applied course covering theory and methodology of molecular environmental biology, including analysis of selected case studies in conservation biology of macro-organisms, molecular systematics, and microbial ecology. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** EVPP 515 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 619: The Challenge of Biodiversity.** 3 credits.
The Challenge of Biodiversity examines the science and policy of biodiversity conservation, through case studies, current events, guest speakers, class discussion, reading and assignments. Emphasis is placed on problem solving, communication skills and critical thinking. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** 6 credit hours of graduate course work or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 620: Development of U.S. Environmental Policies.** 3 credits.
Examines nature and historical development of environmental policy in the United States, including consideration of social, political, economic and environmental factors, and ways it is expressed and implemented. Also considers sustainability and emerging issues. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** 8 graduate credits including graduate course in policy process and course in ecology; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
EVPP 621: Overview of Biodiversity Conservation. 3 credits.
Lectures, reading assignments, class discussions, and orally presented and written case studies to explore what biodiversity is, why it is important, how conservation has evolved, and status today. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: 8 credits of graduate environmental policy and/or science, including ecology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

EVPP 622: Management of Wild Living Resources. 3 credits.
Examines management of different types of wild living resources: animal and plant, aquatic and terrestrial. Reviews status of resources, analyzes factors that have led to present situation, and considers what may be required to achieve effective and sustainable management. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 8 graduate credits of ecology or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

EVPP 623: Translating Environmental Policy into Action. 3 credits.
Guest lecturers, class discussions, written and orally presented case studies, and assigned reading to identify and analyze factors involved in moving from science and policy to concrete action. Provides understanding of basic principles, skills, and strategies. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: 8 credits of graduate environmental policy and/or science, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

EVPP 626: Environment and Development in Asia. 3 credits.
Examine environment and development in selected countries of South, Southeast, and East Asia. Reviews relationship between environment and development, considers background and history leading up to the present, and considers requirements to achieve more effective and sustainable results. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: A course in policy process, a course in international development and a course in ecology, or Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

EVPP 627: Environmental Policy in Latin America. 3 credits.
Examine environmental policy in Latin America. Reviews evolution of environmental policy and relationship between environment and development, considers background and history leading up to the present, and considers requirements to achieve more effective and sustainable results. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 8 graduate credits in policy process, international development, and ecology; or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 628: Environment and Development in Africa.** 3 credits. Examine environment and development in sub-Saharan Africa. Reviews relationship between environment and development, considers background and history leading up to present, and considers requirements to achieve more effective and sustainable results. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** 8 graduate credits in policy process, international development, and ecology; or permission of instructor.

**Specialized Designation:** Green Leaf Focused Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 630: Methods and Logic of Social Inquiry.** 3 credits. Emphasizes gathering, interpretation, and evaluation of scientific evidence. Develops critical thinking skills and covers logic of scientific inquiry, including various data collection methods such as experiments, observational research, and Q methodology. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** An undergraduate course in statistics and research methods or Permission of Instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 632: Qualitative Research Methods for Environmental Scientists.** 3 credits. Course engages questions of qualitative research methods for scientists conducting human-environment research. Focuses on tools to investigate the human-environment nexus, including community-based conservation and management research and decolonizing methodologies. Students discuss and practice 'triangulation'—the integration of qualitative and quantitative methods—a necessary skill for environmental/human-environment research. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** EVPP 531 or CSS 600 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 635: Environment and Society.** 3 credits. Human-environment interactions in human ecology perspective, historical basis of human environmental impact, indigenous and nonindigenous worldviews in context of modernization, environmental degradation and globalization, and contemporary policy and research initiatives geared toward resilience and sustainability. Discussion format. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** EVPP 531 or CSS 600 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 636: Gender, Race, and the Natural World.** 3 credits. Advanced study of links among gender, race, and nature using social-psychological framework, original sources, and seminar and discussion. Analyzes ideologies that underpin the interlocking narratives of gender, race, and nature, and examines role of science in producing these.
ideologies. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture
**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 637: Human Dimensions of Climate Change.** 3 credits.
Examines human dimensions of climate change, biodiversity loss, ozone depletion, and related anthropogenic alterations of biosphere. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture
**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 638: Corporate Environmental Management and Policy.** 3 credits.
Provides understanding of how environmental issues interact with business strategy decisions. Emphasizes learning about proactive win-win environmental management strategies being implemented by world’s leading firms, and shows how government policies and regulations can be designed to simultaneously promote higher environmental protection and competitiveness. Combines mini lectures, participatory discussions. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture
**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 641: Environmental Science and Public Policy.** 3 credits.
Effects of human activities on environment. Considers airborne, waterborne, and solid waste contaminants with respect to sources, control, and effect on ecosystems and humans. Focus is on scientific and technical aspects of environmental contamination. Includes discussion of science policy related to these topics. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** A course in Ecology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture
**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 642: Environmental Policy.** 3 credits.
In-depth examination of U.S. efforts since 1970 to mitigate pollution of air, land, and water. Addresses issues of global concern, including biodiversity loss, ozone depletion, and climate change. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to PUAD 642.

**Specialized Designation:** Green Leaf Focused Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture
**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 643: Microbial Ecology.** 4 credits.
Studies relationships between microorganisms and their natural environment, and methodology for observing the microbes in nature and the biochemistry of environmental systems. Includes discussion of the role of microbes both in creating and removing toxic threats in the environment. Laboratory component includes field sampling/analyses and laboratory isolation and identification of microbes as well as measurement of their physiological activities. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 643.

**Recommended Prerequisite:** A course in microbiology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 645: Freshwater Ecology. 3 credits.
Studies biotic and abiotic interactions that affect structure and composition of freshwater ecosystems. Emphasizes research literature. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: EVPP 550 or Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 646: Wetland Ecology and Management. 3 credits.
Emphasizes structure, functions, and ecological processes of created and natural wetlands from an ecosystem perspective. Students will be expected to develop an understanding of hydrologic, physicochemical, and ecological aspects of wetlands and the management of these systems through in-class and field/lab works. Each student is required to carry out an individual research project that involves field and lab works, and write a research paper. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: BIOL 307 or EVPP 377, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 647: Wetland Ecology Lab and Field. 1 credit.
Use laboratory and field work to study the structure and function of wetland ecosystems. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: EVPP 646 (formerly EVPP 644).

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 648: Population Ecology. 3 credits.
Surveys ecological models and theory. Topics include population growth and regulation, competition, predator-prey, herbivore-plant, and parasite-host interactions, mutualism, and metapopulation ecology. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 648.

Recommended Prerequisite: A Course in ecology or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 650: Ecosystem Analysis and Modeling. 4 credits.
Introduces principles, history, and methodologies of systems ecology, emphasizing development and simulation of ecological models for natural resource/ecosystem management, conceptual and symbolic models, and simulation techniques on microcomputers. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 650.

Recommended Prerequisite: A course in ecology or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 651: Multivariate Data Analysis for Ecology and Environmental Science. 3 credits.
Provides graduate students in ecology and environmental science with tools needed to analyze multivariate data sets. Topics include classification and ordination. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.
Recommended Prerequisite: EVPP 607 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 652: The Hydrosphere. 3 credits.
Components and transfer processes within hydrosphere, which consists of aqueous envelope of Earth including oceans, lakes, rivers; snow, ice, glaciers, soil, moisture, ground water, and atmospheric water vapor. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to GGS 656.

Recommended Prerequisite: 2 semesters of calculus and partial differential equations.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 670: Environmental Law. 3 credits.
Studies environmental laws such as the National Environmental Policy Act, and regulatory issues such as the Clean Water and Clean Air Acts. Emphasizes critical evaluation of alternatives to unresolved issues in environmental policies. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: Course in Ecology, Environmental Biology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 677: Applied Ecology and Ecosystem Management. 3 credits.
Uses ecological principles to manage natural resources. Emphasizes hierarchical levels of organization within ecological systems, and management of ecosystems to conserve biodiversity, natural resources, and environment. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

Recommended Prerequisite: BIOL 607 or EVPP 607 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EVPP 682: Principles of Environmental Conflict. 3 credits.
Explores the nature and characteristics of environmental conflict and efforts to manage, resolve or transform it. Students will develop a capacity to assess the strengths and weaknesses of environmental conflict resolution processes while learning about best practices for preventing, preparing for, and addressing environmental conflict. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to CONF 682.

Recommended Prerequisite: EVPP 607, CONF 501, and CONF 502, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 683: Environmental Conflict Resolution: Situation Assessment, Process Design and Best Practices.** 3 credits.

This course explores best practices for managing, resolving, and transforming environmental conflict using environmental conflict resolution (ECR) processes. Nature and dynamics of environmental disputes, methods for assessing conflict situations, and methods for conducting various forms of ECR processes will be covered in the context of selected case studies with emphasis on student involvement. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to CONF 683.

**Recommended Prerequisite:** EVPP 682 or CONF 682, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 684: Environmental Conflict Resolution and Collaboration: Leadership Practicum/Capstone.** 3 credits.

This course is the capstone course for the Graduate Certificate in Environmental Conflict Resolution and Collaboration. Under supervision of the instructor, students will undertake an assessment of an active environmental conflict and recommend a range of processes that promote identified goals for preferred conflict outcomes. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** EVPP 682 or CONF 682, and EVPP 683 or CONF 683.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 692: Master's Seminar in Environmental Science and Public Policy.** 1 credit.

Explores selected topics in environmental science and public policy using lectures, guest lectures, student presentations, and discussions of current literature. Notes: Topics vary. Offered by Environmental Science & Policy (p. 687). May be repeated within the term for a maximum 4 credits.

**Registration Restrictions:**

**EVPP 693: Directed Studies in Environmental Science and Public Policy.** 1-4 credits.

Studies topic not otherwise available in graduate program. May involve reading assignments, tutorials, lectures, papers, presentations, and lab or field study determined in consultation with instructor. Notes: Short study plan required. May not be used to fulfill explicit undergraduate prerequisites for graduate work. Offered by Environmental Science & Policy (p. 687). May be repeated within the term for a maximum 8 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**700 Level Courses**

**EVPP 730: Environmental Policy Research in Practice.** 3 credits.

Course is designed for students interested in social science-oriented environmental research. Student learn how to ground their research ideas in social science theory, develop a central research question and construct original research hypotheses that are grounded in social science literature. They also hone their peer reviewing skills by assessing other students’ research and offering constructive commentary. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 12 credit hours of graduate course work at Mason or approval of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 738: Sustainable Enterprise Theory.** 3 credits.

This course is designed to critically evaluate the scholarly research related to sustainable enterprise. The class provides an overview of the major theories, research designs, and methodologies associated with this emerging research domain. Students apply these theories to develop
social science research proposals for empirical investigation. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit.

**Recommended Prerequisite:** EVPP 638 Corporate Environmental Management and Policy, equivalent class, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 741:** Advanced Topics in Environmental Science and Public Policy. 0-4 credits.
Studies selected advanced topics in environmental science and public policy. Lectures, guest lectures, student presentations, laboratory exercises. Notes: Topics vary; each offering has coherent theme. May be repeated for credit if topics significantly differ. Offered by Environmental Science & Policy (p. 687). May be repeated within the term for a maximum 10 credits.

**Recommended Prerequisite:** Eight hours of graduate coursework in Environmental Science and Public Policy, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 745:** Environmental Toxicology. 3 credits.
Studies nature, distribution, and interaction of toxic chemicals released into environment. Topics include acute, subchronic, and chronic toxicity testing; uptake, distribution and metabolism of toxins as well as their distribution in the environment. Emphasizes effects on nonhuman biota, detection and fate of chemicals, and includes discussion of implications for government regulation. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to BIOL 745.

**Recommended Prerequisite:** EVPP 445 or EVPP 545 or equivalent; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 792:** Seminar in Earth Systems Science. 2 credits.
Seminar for Earth systems science graduate students with background in major systems. Capstone experience. Seminars presented by faculty and students. Notes: Topics vary from semester to semester. Offered by Environmental Science & Policy (p. 687). May not be repeated for credit. Equivalent to GGS 792.

**Recommended Prerequisite:** EVPP 638 Corporate Environmental Management and Policy, equivalent class, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 793:** Research in Environmental Science and Public Policy. 1-3 credits.
Library, laboratory, or field investigation under supervision of instructor. Notes: Short proposal required. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 8 graduate credits in EVPP and Permission of Instructor and Chair.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EVPP 797:** Master's Thesis Proposal. 1-3 credits.
Work on research proposal that forms basis for a master's thesis. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** 12 credits and permission of major professor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EVPP 798:** Master's Research Project in Environmental Science and Public Policy. 1-3 credits.
Experimental, observational, literature-based, or theoretical research project chosen and completed under guidance of faculty member. Proposal required before enrollment. Comprehensive report acceptable to student's committee required for completion. Notes: Students taking EVPP 798 may receive no more than 6 credits for both EVPP 793 and EVPP 798. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Approved project proposal and permission of instructor and Chair.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EVPP 799: Master’s Thesis in Environmental Science and Public Policy.** 1-6 credits.
Experimental, observational, or theoretical research under instructor’s supervision that culminates in production of thesis. Thesis work should be potentially publishable. Notes: No more than 6 credits of EVPP 793 and EVPP 799 may be applied to master’s degree. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree.

**Recommended Prerequisite:** Approved thesis proposal and permission of instructor and Chair.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**EVPP 894: Supervised Internship.** 3-12 credits.
Training in application of ecological skills to environmental management and policy under supervision of a qualified environmental scientist at governmental agency, consulting firm, industry, or other acceptable organization. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** Permission of student’s doctoral committee, graduate program director and department chair.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**900 Level Courses**

**EVPP 991: Advanced Seminar in Environmental Science.** 2 credits.
Topics generally address interface between environmental science and public policy. Offered by Environmental Science & Policy (p. 687). May be repeated within the term.

**Recommended Prerequisite:** 8 hours of Ecology or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EVPP 998: Doctoral Dissertation Proposal.** 1-6 credits.
Work on research proposal that forms basis for a doctoral dissertation. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree.

**Recommended Prerequisite:** Admission to doctoral candidacy.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EVPP 999: Doctoral Dissertation Research.** 1-12 credits.
Research on basic or applied problem in environmental science and public policy. Offered by Environmental Science & Policy (p. 687). May be repeated within the degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

**Recommended Prerequisite:** Admission to doctoral candidacy.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Executive MBA (EMBA)**

**600 Level Courses**

**EMBA 603: Managerial Economics.** 3 credits.
Develops and applies economic analysis tools in managerial decision situations. Focuses on economic analysis to understand firm’s competitive environment. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Admission to doctoral candidacy.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 612: Managing Costs and Evaluating Performance.** 1-3 credits.
Focuses on developing accounting information for use by managers in planning and control activities. Examines traditional and emerging cost-management systems. Special emphasis on information for decision-making, operational control, and performance evaluation. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 613:** Financial Accounting. 3 credits.
Develops framework of concepts and procedures essential for interpreting general-purpose financial statements and internal managerial accounting reports. Emphasizes understanding basic concepts and applying selected procedures to problem-solving situations. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 623:** Marketing. 3 credits.
Develops market-based knowledge and skills for effective marketing strategy design, implementation, and evaluation. Develops ability to make marketing decisions in wide variety of institutional and competitive situations. Addresses the importance of companies being market-driven and customer-focused. Emphasis on case studies, team work, and projects. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 633:** Statistics for Business Decision Making. 3 credits.
Applies statistical methods in analyzing problems in business decision-making. Topics include descriptive statistics, probability distributions, estimation and hypothesis testing, and linear regression. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 638:** Services and Operations Management. 3 credits.
Integrates theory and practice of operations management with mathematical modeling and quantitative techniques of management science. Addresses range of operations management issues, including technology and strategy decisions, systems design issues, project operations, quality control, and inventory planning. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 641:** Building the High-Performing Team. 0-3 credits.
Develops the knowledge and skills needed for creating powerful, high-performance teams within and among organizational units. Strategies are offered for alignment of goals, building conditions for coordinated action, generating innovation, and resolving breakdowns. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EMBA 643:** Managerial Finance. 3 credits.
Introduces theories of finance and their application to the formulation of business policy. Topics include internal financial analysis, financial forecasting, valuation, risk and return analysis, capital allocation, and
capital structure. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EMBA 660: Management of Information Technology. 3 credits.
Examines computer-based information technologies and their interrelation with management processes, especially problem-solving and decision-making at individual, work group, and organization levels. Topics include management information system life cycle, with emphasis on manager's perspective, and modeling and analysis to support decision-making. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EMBA 696: Directed Studies in Executive MBA. 1-3 credits.
Approval by faculty member and program director required prior to registration. Studies specialized topics in business not otherwise available in the curriculum. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EMBA 697: Special Topics in Executive MBA. 1-3 credits.
Sections established as necessary to focus on various topical issues that emerge in practice of executive business administration. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)
700 Level Courses

**EMBA 703: Financial Markets.** 0-3 credits.
Explores the relationships between financial markets and their impact on corporate financial decision making. Considers cross-market interrelationships, including how financial markets respond by creating financial instruments to meet the varying financial requirements of business firms. The course includes a domestic financial residency in New York that focuses on contemporary developments in these markets. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 718: Strategic Leadership in National Security Firms.** 3 credits.
Focuses on the essential elements of successful organizational change. Emphasis on understanding the forces for change, as well as developing skills to manage a successful change process. Gives a deeper understanding of organizational leadership and an increased ability to be a successful leader. Incorporates and integrates theory, research, and application, with the ultimate goal of providing the student with practical information about leadership. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EMBA 729: Critical Infrastructure Protection and Resilience.** 3 credits.
Course provides an introduction to the policy, strategy, and practical application of critical infrastructure security and resilience from an all-hazards perspective. It describes the strategic context presented by the 21st century risk environment, and discusses the challenges and opportunities associated with the following: public-private partnerships; information-sharing; risk analysis and prioritization; risk mitigation and management; performance measurement; incident management; and addressing future risks. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 730: Assessing and Managing Risk to Critical Infrastructure Systems.** 1-3 credits.
Course provides an introduction to the policy, strategy, and practical application of an all-hazards risk assessment and management in the context of critical infrastructure security and resilience. Course promotes subject matter understanding, critical discussion of analytic approaches, and proficiency in communicating information on risk methodologies and their utilization in oral and written form. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EMBA 731: Partnering and Information Sharing for Critical Infrastructure Security and Resilience.** 1-3 credits.
Course provides an overview of partnerships and information sharing within the homeland security enterprise with a focus on the collaboration and information products, processes, and systems necessary to protect and enhance the resilience of the Nation’s critical infrastructure. Course is designed to promote subject-matter understanding, critical analysis of issues, and insight into senior leader decision-making in both the government and private sectors. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EMBA 732: Critical Infrastructure Security and Resilience and Cybersecurity.** 1-3 credits.
Provides introduction to policy, strategy, and operational environment of cyberspace in context of critical infrastructure security and resilience mission area. Course includes discussion of cybersecurity challenges presented by 21st century risk environment, and opportunities and challenges associated with cyber risk analysis and prioritization; risk mitigation and management; government-private cybersecurity partnerships and information-sharing; attack alert and response; and addressing future cyber risks. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
EMBA 733: Advanced Topics in Critical Infrastructure Protection. 1-3 credits. Course provides an advanced focus on critical infrastructure security and resilience policy, strategy, planning, and incident management operations in an all-hazards context. In terms of the audience, this course assumes a base level of student knowledge and practical experience in the critical infrastructure security and resilience field. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EMBA 734: Critical Infrastructure Protection Residency. 3 credits. This course takes the concepts from previous Critical Infrastructure Protection track courses and provides an opportunity to see these concepts in a "field environment." The course will engage with decision makers to learn how they operate profit generating firms in the critical infrastructure sectors while addressing considerations of security and resilience. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in EMBA - Distance Learning or Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EMBA 735: Systems Thinking and Dynamics. 1-3 credits. Enables students to develop, express, improve, and validate holistic mental models of problems. In doing so, they will build a foundation for better decision making leading to improved business performance. The main strength of the systems-thinking approach is its emphasis on long-term strategic outcomes as opposed to short-term tactical ones. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EMBA 740: Global Issues for National Security Firms. 3 credits. The seminar topics would incorporate student and industry partner feedback and consultation by the Program Director and Academic Director with the GPC and Area Chairs. Possible topics include: European Union, Global Social Entrepreneurship, Emerging Markets and Product Development. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in EMBA - Distance Learning or Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EMBA 741: The Business of National Security. 3 credits. The seminar topics would incorporate student and industry partner feedback and consultation by the Program Director and Academic Director with the GPC and Area Chairs. Possible topics include: National Defense Commercial Strategy, Competing Internationally in National Defense Sector, Small Business and National Defense. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in EMBA - Distance Learning or Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Special scale. (p. 84)

EMBA 742: Advanced Topics in Global Business. 1.5 credit. The course discusses current issues in globalization and the ramifications of globalization on business strategy; comparatively reviews emerging markets and development in Asia, Africa, and Latin America and in financial services, healthcare, and eGovernment; considers the role of ICT and mobiles in international development; and reviews the role and development of institutions and significance for business in emerging markets. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in EMBA - Distance Learning or Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
**EMBA 743: Growth Strategies for National Security Firms.** 3 credits.
Students will be provided an in-depth look at the strategy side of the National Security industry and will learn how security business position and re-position themselves in this changing market place. The process that firms go through to determine their overall strategy will be explored. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in EMBA - Distance Learning or Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 750: Capstone Project: Part 1.** 1.5 credit.
Lab-based course provides action learning experience that integrates course content from throughout the EMBA program. Students work in teams to develop solutions to organizational challenges and opportunities. They select a project, evaluate the strategic issues for their assigned clients, design a solution, and present results to an executive panel. Depending on the nature of the issue and faculty requests, team presentations of results include one or more of the following sections: an analysis of the situation; recommendations including changes in goals and organizational design; a plan of action integrating marketing, human resource development, organizational design, finance, and operations; an implementation plan using theories of communication and change management, to include the business case and a business plan. Students are expected to draw upon coursework from multiple disciplines in completing this project. Offered twice in spring semester for a total of 3 credit hours. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 751: Corporate Global Strategy.** 1.5-3 credits.
Examines issues in strategy for firms operating in multiple markets or businesses, including diversification, portfolio approaches to corporate strategy, mergers and acquisitions, corporate alliances and joint ventures, restructuring, and coordinating multibusiness corporations. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 754: Capstone Project: Part 2.** 1.5 credit.
Students will work in teams to develop solutions to complex organizational challenges and opportunities. The Capstone project is divided into two parts with regard to course work. In Part II, students will evaluate the strategic issues for their client based upon interviews, outside primary and secondary research, and industry analysis. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in EMBA - Distance Learning or Executive MBA.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EMBA 755: Special Topics in Management.** 1-6 credits.
In-depth examination of advanced topics in management. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EMBA 790: National Security Residency.** 3 credits.
Develops National Security perspective through seminars led by professors and high-level managers; briefings by officials of government and other policy-making organizations. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EMBA 795: Global Residency.** 0-3 credits.
Develops global perspective through seminars led by professors and high-level managers; briefings by officials of government and other policy-making organizations; and site visits to production and distribution facilities, research centers, IT units, and other corporate offices. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major in Executive MBA.

Enrollment is limited to Graduate or Non-Degree level students.
Exercise, Fitness, and Health Promotion (EFHP)

500 Level Courses

**EFHP 500: Workshop in Exercise, Fitness, and Health Promotion.** 1-3 credits. Provides concentrated full-time workshops, weekend seminars, and workshops on selected topics in exercise, fitness, and health promotion. Notes: No more than 6 credits may be applied for degree credit. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EFHP 520: Medical Terminology of Health Professionals.** 3 credits. Analyzes foundation of scientific and medical vocabulary including prefixes, suffixes and stems used to form compound words for health professionals. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 522: Functional Anatomy for Health and Wellness Practitioners.** 3 credits. Promotes familiarity and proficiency with anatomy of neuromuscular and musculoskeletal systems, which relate directly to sports related injuries. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 124, 125 (or equivalent)

**Recommended Corequisite:** EFHP 522.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 526: Prevention, Recognition, and Management of Fitness Related Injuries.** 3 credits. Promotes familiarity and proficiency with assessment and physical examination of sports-related injuries. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Prerequisite:** BIOL 124, 125 (or equivalent).

**Recommended Corequisite:** EFHP 522.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 598: Special Topics.** 1-6 credits. Focuses on projects related to exercise, fitness, or health promotion. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the term.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 599: Independent Study EFHP.** 1-3 credits. Studies problem areas in exercise, fitness, and health promotion research, theory, or practice under direction of faculty member. May be repeated. No more than 3 credits may be earned. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**EFHP 605: History of American Sport, Exercise, and Physical Culture.** 3 credits.
Role of sport and physical education in Europe and its impact on developments in America. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 610: Advanced Exercise Physiology.** 3 credits.
Lecture, demonstration, and seminar experiences in applying research findings to understanding physiological function and effects of exercise on people. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**EFHP 615: Epidemiology and Environmental Health.** 3 credits.
Principles, methods, and application of epidemiology. Reviews behavioral, psychological, social, and environmental risks to disease distribution.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 612: Scientific Foundation of Applied Kinesiology.** 3 credits.
An integrated study of human anatomy, physiology, chemistry, and microbiology, presenting a complete picture of how the body functions and the diseases and disorders that cause the body to malfunction. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**EFHP 614: Advanced Exercise Nutrition.** 3 credits.
Advanced study of nutrition's relation to physical activity, exercise, and sports. Reviews biochemical, physiological, and behavioral aspects of nutrition in promoting health, fitness, and sports performance. Focuses on nutrient needs during life cycle stages. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**EFHP 611: Movement and Fitness Assessment.** 3 credits.
Covers common movement and fitness assessments that can be used to develop an individualized exercise program for various populations. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**EFHP 613: Advanced Applied Biomechanics.** 3 credits.
Examines kinetic and kinematic concepts and how they apply to the qualitative and quantitative assessment of human movement. Discusses advanced applied motion analysis techniques. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**EFHP 612: Scientific Foundation of Applied Kinesiology.** 3 credits.
An integrated study of human anatomy, physiology, chemistry, and microbiology, presenting a complete picture of how the body functions and the diseases and disorders that cause the body to malfunction. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Focuses on lifestyle, exercise patterns, and environmental factors to health and disease conditions. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 616:** *Motor Behavior and Development.* 3 credits.
Human motor behavior development and theory with application to evaluation of skill acquisition. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 617:** *Corrective and Preventative Exercise Techniques.* 3 credits.
Explores content related to evidence-based exercise interventions to correct and prevent common movement dysfunctions and/or injuries in a variety of healthy populations. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a major in Kinesiology.

Enrollment limited to students in a Graduate Certificate degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 618:** *Exercise and Sport Psychology.* 3 credits.
Covers psychological and social-psychological antecedents and consequences of exercise, physical activity, and sports participation. Emphasizes theory and research on personality, motivation, arousal, cognition, attributions, attitudes, self-efficacy, leadership effectiveness, and group dynamics. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 620:** *Research Methods for Applied Kinesiology.* 3 credits.
Introduction to the techniques of research generally employed in the fields of exercise science and health. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 621:** *Statistical Methods for Applied Kinesiology.* 3 credits.
Introduction to practical and applied aspects of both descriptive and inferential statistics in exercise science and health. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Prerequisite:** MATH 102, STAT 250.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 630:** *Exercise, Health, and Fitness Program Development.* 3 credits.
Covers exercise and health program development related to fitness and health of adult populations. Notes: Provides 3 to 6 hours of field experience. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 640: Principles of Strength and Conditioning.** 3 credits.
Analyzes exercise techniques, training program designs, organization and administration, and testing and evaluation using scientific principles of strength and conditioning. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 650: Scientific Principles of Motor Learning.** 3 credits.
Biomechanical analysis and application of scientific principles of movement to instructing sport skills in physical education and sport programs. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 660:** Management of Exercise, Fitness, and Health Promotion Organizations. 3 credits.
Advanced study in management and administration of organizations dedicated to human development and improvement of quality of life. Covers application of theories and practices of management and behavioral sciences, fiscal management, marketing, and evaluation research. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 680:** Ethical Issues in Exercise, Fitness, and Health Promotion. 3 credits.
Covers formulation of coherent framework for ascertaining good, right, and just; and for assessing evidence and reason underlying positions and arguments. Examines ethical issues in exercise, fitness, and health promotion. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 690:** Scientific Communications Seminar. 1-3 credits.
Studies and applies written and verbal communication skills in reading, analyzing, writing, and distributing scientific information in Applied Kinesiology. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 4 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**EFHP 730:** Motor Learning. 3 credits.
Appraisal of motor learning theories and an analysis of motor skill development including the roles of information processing, practice, feedback, and motivation. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students in a Graduate Certificate degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 794:** Tactical Athlete Field Practicum. 3 credits.
Emphasizes developing professional skills, applying knowledge to provide exercise interventions to clients at the practicum site and delivering educational content in Tactical Athlete settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students in a Graduate Certificate degree.
**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EFHP 798: Project.** 1-3 credits.
Addresses an applied exercise, fitness, and health promotion issue under supervision of graduate faculty member. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EFHP 799: Thesis.** 1-6 credits.
Explores exercise, fitness, and health promotion problem using appropriate research methodology and under supervision of graduate faculty member. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree.

**Recommended Prerequisite:** Completion of all coursework.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

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**800 Level Courses**

**EFHP 810: Neuromuscular Responses to Exercise.** 3 credits.
Provides an in-depth study of the muscular systems of the human body and how these systems are altered in response to acute and chronic physical activity. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 811: Motor Learning and Control.** 3 credits.
Examines motor learning theories and analyzes motor skill development including the roles of information processing, practice, feedback, and motivation. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**EFHP 813: Musculoskeletal Biomechanics in Human Movement.** 3 credits.
Advanced study of the biomechanical analysis of the musculoskeletal system, including collecting, interpreting, and modeling biomechanical data. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Prerequisite:** Graduate Standing or Permission of Instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**EFHP 815: Measurement Techniques and Instrumentation.** 3 credits.
Explores the application and implementation of conventional measurement techniques and instrumentation to collect data in Exercise, Fitness, and Health Promotion. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 820: Careers in the Academy Seminar.** 3 credits.
Examines careers in the academy in a seminar format including faculty role, institutional fit, and the higher education academic job search (including developing cover letters and job portfolio outlines); introduces teaching, research, and service expectations at higher education institutions to help prepare for future academic careers. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EFHP 825: Data Analytics in Exercise, Fitness, and Health Promotion.** 3 credits.
Examines data processing, analysis and interpretation using software applications common in Exercise, Fitness and Health Promotion. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Film and Video Studies (FAVS)

200 Level Courses

FAVS 225: The History of World Cinema. 3 credits.
This course is a survey of the history of cinema. It explores the development of world cinema from its beginnings in the late nineteenth century to the 1990s. The course will enable students to comprehend the evolution of the history and language of cinema in order to connect the art of filmmaking with the "outside forces" (i.e., the economic institutions, key figures, historical events and social issues) that profoundly shape and influence it. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Mason Core: Arts (p. 142)

FAVS 250: Business of Film and Video. 3 credits.
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 255: Video Production for Film. 3 credits.
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 260: Video Editing for Film. 3 credits.
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 280: Writing for the Moving Image. 3 credits.
This course is graded on the Undergraduate Regular scale. (p. 84)
300 Level Courses

FAVS 300: Global Horror Film. 3 credits.
Taking an historical approach through various national and international cinemas, the course begins with horror film’s literary and theatrical origins and traces its development into a modern (and postmodern) form of universal storytelling. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 311: Producing I. 3 credits.
Provides students with the basics of film producing. Students gain creative, business, and legal skills needed to develop, produce and sell an independent, commercially viable motion picture film. Students engage with writing treatments, script breakdown, pitching, budgeting, creating shooting schedules, financing, hiring and managing cast and crew, and other areas in producing. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: FAVS 250C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Film and Video Studies.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 312: Film Lab. 3 credits.
A hands-on producing class where students take roles as producers, assistant directors, location managers, script supervisors, production and costume designers, casting assistants, etc. in the development, pre-production, and production of a scripted short film. The course moves from development through production in an apprentice style environment with a seasoned director. This gives students "real-world" experience in independent film production. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Required Prerequisites: FAVS 311C and 255C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 331: Cinematography. 3 credits.
This course aims to recreate a professional camera department environment. By the end of the course, students should be able to understand and perform the function of first assistant cameraperson or second assistant cameraperson on a camera crew. Students will understand the history, function, art, craft, and science of cinematography. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: AVT 204C and FAVS 255C.
**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FAVS 357: New Media and Film Distribution.** 3 credits.
This course explores how emerging media technologies function and how the film and video firms are changing with the advent of new media technologies. Through research and guided projects, students learn how new media technologies are altering the financing, distribution, exhibition, and marketing of films and videos. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** AVT 204 C, FAVS 250 C, 280 C, 255 C and 260 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FAVS 365: Documentary Filmmaking.** 3 credits.
An introduction to documentary filmmaking in which each student makes a short digital documentary, from concept development to finished piece. The class covers essential technical skills, emerging styles of nonfiction film, and documentary storytelling techniques. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** AVT 204 C, FAVS 250 C, 280 C, 255 C and 260 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FAVS 366: Video Production for Social Change.** 3 credits.
This course reflects a professional production environment where student teams, under the instructor’s supervision, produce effective pieces for local community based non-profit organizations. Students will learn the business of working with a real-world nonprofit client and storytelling skills that advance the client mission. Beginning with the discovery process, students will engage the client in assessing their needs and goals for producing a video. They will develop a creative concept/strategy, a budget, and a statement of work/contract. Small teams will then produce their client project as they learn the storytelling strategies that engage by connecting with an audience. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Recommended Prerequisite:** FAVS 280, FAVS 331, and FAVS 333

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FAVS 375: Fiction Film Directing.** 3 credits.
This course examines techniques for directing fiction films. Students study the directorial approaches of a variety of directors by viewing and critiquing classic films. Students learn about the director’s role in each stage of film production. Students shoot, direct and edit fictional scenes and sequences intended to develop and convey the beginnings of the authorial signatures. Notes: Intended for Film and Video Studies majors only. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** AVT 204 C, FAVS 250 C, 280 C, 255 C and 260 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FAVS 377: Interactive Storytelling for Social Change.** 3 credits.
Students study the craft of interactive and transmedia storytelling while producing media projects for impact and action. Transmedia is a way of telling stories across media platforms, for both fiction and non-fiction. This allows creators to engage television and film audiences for greater impact. Students will study interactivity as a readily used marketing tool in the film and television industry. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** FAVS 255 C, 280 C and 260 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FAVS 378: Web Series.** 3 credits.
A production course that explores the creative and logistical process of creating a fiction series for the web. Production techniques for web series will be explored, including permissions, contracts, and budgets for web development. The course will consider and study successful web series and explore contemporary discussions and professional organizations centered on web series. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** AVT 204 C, FAVS 250 C, 280 C, 255 C and 260 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FAVS 380: TV Writing.** 3 credits.
Students learn about the profession of writing scripted television. Examines the principles and processes of development for television drama and other genres and programming categories. Students become
acquainted with the expectations and responsibilities of staff and freelance writing. Develops skills in writing for the small screen(s) by practicing established techniques and identifying contemporary trends. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
**Required Prerequisite:** FAVS 280<sup>C</sup>.
<sup>C</sup> Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 399: *Special Topics in Film and Video Studies.* 1-3 credits.

In-depth presentation and exploration of topical studies. Notes: Subject matter varies. May be repeated when taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 12 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

FAVS 400: *Career Development Seminar.* 3 credits.

This course prepares students for a career in the film and video industry beyond the university. Students complete a professionally reviewed resume, cover letter, and experience a formalized interview. Students prepare a written grant proposal and pitch a film project with professional advisors. This class fosters development of a professional online presence and strengthens students' communication techniques in public speaking. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisite:** FAVS 352<sup>C</sup>.
<sup>C</sup> Requires minimum grade of C.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 431: *Advanced Cinematography.* 3 credits.


**Registration Restrictions:**
**Required Prerequisite:** FAVS 331<sup>C</sup>.
<sup>C</sup> Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 433: *Advanced Sound.* 3 credits.

Students will learn about advanced fundamental theory, tools, and techniques needed to create and/or implement sound for film. We will utilize the industry standard software Pro Tools. Students will learn nonlinear sound editing, digital audio processing, frequency manipulation, synthesized sound techniques and mixing. We will focus on the power of sound and the contributions it can make not only in enhancing the visuals of a film but in contributing to telling the story within itself. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** FAVS 333<sup>C</sup>.
<sup>C</sup> Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Audio Production or Film and Video Studies.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 450: *Internship in Film and Video Studies.* 3 credits.

On-the-job training in film and video studies through approved fieldwork study programs. Internships are arranged and supervised by the FAVS director. Notes: Required for all FAVS majors. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 75 credits, 15 credits in core/elective FAVS courses, and permission of the Internship Coordinator.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 453: *Film and Video Studies Pedagogy and Principles.* 3 credits.

Theory and practice in facilitating the learning of principles and skills in film and video. Students work as instructor aids under the supervision of a faculty member. Activities include facilitating small group activities and individually critiquing classroom performances. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Declared FAVS major. Student must have successfully completed the course they will facilitate with a grade of B or better, have comparable experience, or receive permission from the instructor.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 455: *Studio and Field Productions Practicum.* 3 credits.

Practical knowledge in studio and field productions. Students complete a minimum 150 hours of work as assistants to engineers, producers, directors, and organizers of video production facilities on campus. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.
Recommended Prerequisite: COMM 355 and permission of instructor.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 460: Advanced Video Editing. 3 credits.
This course will instruct students on the theories, techniques and technologies pertaining to video editing for fiction and documentary films, as well as commercials. The course will combine lectures, discussions, and demonstrations with hands on projects. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: FAVS 260C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 475: Advanced Fiction Directing. 3 credits.
Focuses on casting and directing actors, working with production designers, assistant directors, and visual and aural storytelling on an individually directed project. Teaches students how to direct the shooting, production and editing of a fiction film or webisode which further develops their authorial signature. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (FAVS 375C or L375C) and FAVS 260C and 280C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 483: Feature-Length Scriptwriting. 3 credits.
This course is an introduction to the development and analysis of feature length screenplays. The approach combines lecture, discussion, screening and presentation of student work. By the end of the semester, each student should have a complete first draft of an original screenplay. Students will also complete story reports and coverage reports of screenplays by other writers. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: FAVS 380C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 490: Independent Study. 1-6 credits.
Independent research on specific project under direction of selected faculty member. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Film and Video Studies.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 496: Advanced Visual Storytelling. 3 credits.
A culminating capstone seminar devoted to analyzing and synthesizing knowledge and skills gained through undergraduate course work in the screenwriting concentration, resulting in substantial individualized writing projects. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Mason Core: Capstone (p. 142)

Recommended Prerequisite: AVT 204, FAVS 250, FAVS 255, and FAVS 280.

Registration Restrictions:
Required Prerequisite: FAVS 483C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major in Film and Video Studies.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 497: Senior Film Practicum. 3 credits.
A senior capstone course for students in the Production/Post-Production concentration. Students put their areas of focus (cinematography, editing, sound design, etc.) into practice. Students play a key role in film projects directed by other students throughout the semester. This course includes a written/research component. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Mason Core: Capstone (p. 142)

Recommended Prerequisite: AVT 204, FAVS 311, FAVS 255, and FAVS 280.

Registration Restrictions:
Required Prerequisites: FAVS 460C or 431C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major in Film and Video Studies.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 498: Development for Senior Project. 3 credits.
An introduction to the Directing and Producing capstone sequence. In this course, directors and producers engage with the creative process of researching and developing material in film and video for their senior projects. A senior project in Directing and Producing is constituted by a short fiction or documentary film, webs series episode(s) or parallel film project with a running time of 15 minutes or less. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.
Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: AVT 204\(^C\), FAVS 250\(^C\), 255\(^C\), 260\(^C\) and 280\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment limited to students with a class of Junior, Senior Plus or Senior.

Enrollment is limited to students with a major in Film and Video Studies.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FAVS 499: Senior Project. 3 credits.
Culminating capstone course in producing and directing that results in the completion of a senior project and related written and visual promotional materials. A senior project in Directing and Producing is constituted by a short fiction or documentary film, webseries episode(s) or parallel film project with a running time of 15 minutes or less. Offered by Coll Visual & Performing Arts (p. 803). Limited to three attempts.

Mason Core: Capstone (p. 142)

Registration Restrictions:
Required Prerequisite: FAVS 498\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Film and Video Studies.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

FAVS 535: Sound and Lighting. 3 credits.
This course will instruct students on the theories, techniques, and technologies pertaining to recording audio and lighting scenes in both field and studio video productions. The course will be lecture based with practical lab styled exercises reinforcing topics presented during lecture. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to the MAIS in Film and Video Studies or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FAVS 550: Internship. 3 credits.
On-the-job training in film and video studies through approved fieldwork study programs. Internships are arranged and supervised by the FAVS director. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FAVS 565: Documentary Filmmaking. 3 credits.
A documentary filmmaking workshop in which each student makes a short digital documentary, from concept development to finished piece. The class covers essential technical skills, emerging styles of nonfiction film, and documentary storytelling techniques. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Admission to the MAIS in Film and Video Studies or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FAVS 570: Screenwriting. 3 credits.
Screenwriting course emphasizing student development in screenplay form, structure, and storytelling with emphasis on craft, character, and story culminating in a screenplay. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

Recommended Prerequisite: Undergraduate degree or equivalent, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FAVS 575: Fiction Film Directing. 3 credits.
This course examines techniques for directing fiction films. Students study the directorial approaches of a variety of directors by viewing and
critiquing classic films. Students learn about the director’s role in each stage of film production. Students shoot, direct and edit fictional scenes and sequences intended to develop and convey the beginnings of the authorial signatures. Offered by Coll Visual & Performing Arts (p. 803). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the MAIS in Film and Video Studies or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FAVS 590:** *Independent Study*. 1-6 credits.
Independent research on specific project under direction of selected faculty member. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Undergraduate degree or equivalent or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FAVS 599:** *Special Topics*. 1-6 credits.
In-depth presentation and exploration of topical studies. Notes: Subject matter varies. May be repeated when taken under different topics. Offered by Coll Visual & Performing Arts (p. 803). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** Undergraduate degree or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**Finance (FNAN)**

**300 Level Courses**

**FNAN 300:** *Personal Financial Management*. 3 credits.
Emphasis is on understanding the importance of developing financial goals and how financial decisions affect those goals throughout their lifetime. In addition, students will develop their own financial goals along with a financial plan that would enable them to meet those goals. This course may be taken for regular grading or S/NC. Students must notify instructor which option they want. FNAN 300 may be taken for general elective credit by School of Business students. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**FNAN 303:** *Financial Management*. 3 credits.
Introduction to the fundamental concepts, principles, and analytical tools in finance. Topics covered include time value of money, security valuation, capital budgeting, risk and return analysis, and cost of capital. Notes: School of Business students will not be permitted to make more than three attempts to achieve a C or higher in FNAN 303. The third attempt requires School of Business academic advisor approval. Those who do not successfully complete this course within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. For more information see the Termination from the Major section under Academic Policies. The final exam for FNAN 303 may be scheduled to take place for all sections at the same time during the final exam period. Accommodations will be made for exam and religious conflicts and for certain official university-sponsored activities. Offered by School of Business (p. 888). Limited to two attempts.

**Recommended Prerequisite:** BUS 103 and BUS 200.

**Registration Restrictions:**
**400 Level Courses**

**FNAN 401: Advanced Financial Management.** 3 credits.

Analyzes decision-making in firm, emphasizing conceptual structure of problems and using advanced analytic techniques. Topics include current asset management, capital budgeting and structure, dividend policy, long-

20. **FNAN 390: Introduction to Financial Planning.** 3 credits.

This course provides an introduction to the financial planning process for students interested in a career in financial planning and wealth management. Course topics include education, insurance, and retirement planning. The course also will cover professional responsibilities and regulations governing the financial services industry. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**

Required Prerequisites: (FNAN 303B or L303) and ((ACCT 303B or L303) or (ACCT 330B or L330)).

B Requires minimum grade of B.

Students with a class of Freshman may not enroll.

Students in a Non-Degree Undergraduate degree may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (p. 84)
term financing, mergers, and corporate planning models. Notes: Lecture, discussion, and case analysis. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (FNAN 301B or L301) or (FNAN 303B or L303). B- Requires minimum grade of B-.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FNAN 411: Investment Analysis and Portfolio Management. 3 credits.
Analyzes modern techniques of portfolio management including evaluating standards for selecting individual securities to include or delete from portfolios. Presents risk-return analysis for portfolios and portfolio performance measures. Lecture, discussion, computer assisted research. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (FNAN 311C or L311).
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FNAN 412: Futures and Options Markets. 3 credits.
Introduces options, commodity, and financial futures markets as they function to provide pricing mechanisms and alternative investment vehicles. Lecture, discussion, and computer-assisted research. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (FNAN 311C or L311).
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FNAN 421: Money and Capital Markets. 3 credits.
Discussion of how financial markets are organized, their role in the allocation of funds to various market segments, and interaction between markets. Topics include aggregate flow of funds analysis; and money, government, corporate, and mortgage markets. Lecture, discussion, and computer assisted research. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (FNAN 321C or L321).
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FNAN 430: Empirical Methods in Finance. 3 credits.
Examines statistical and econometric techniques used in analyzing financial data and developing financial models. Combines development of understanding of fundamental concepts with applications. Includes extensive use of standard software. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Recommended Prerequisite: BS degree status.

Registration Restrictions:
Required Prerequisites: (FNAN 311C or 321C).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FNAN 431: Venture Capital and Private Financing of Startups. 3 credits.
This course focuses on how venture capitalists arrange the financing for a company; what they look for in a business plan; how they value a business; and how they structure the terms of an agreement. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: FNAN 301B or 303B.
B- Requires minimum grade of B-.

Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FNAN 432: Fixed-Income Securities. 3 credits.
Focuses on analysis of fixed-income securities, including corporate and government bonds, mortgage-backed securities, and derivatives. Major topics include institutional features of fixed-income securities markets,
FNAN 346: Probability Methods for Finance. 3 credits.
This course focuses on the development and use of probability models for analyzing risks and financial decisions. Emphasis is on Monte Carlo simulation modeling, linear programming, and decision analysis of complex problems in corporate finance and in investment analysis. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

FNAN 440: International Financial Management. 3 credits.
Introduces management of contemporary firm’s international financial operations. Topics include foreign exchange risk, political risk, returns and risks of international projects, international money and capital markets, financial accounting, capital structure, and cost of capital. Lecture, discussion, readings, and problems. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

FNAN 441: Advanced Topics in Firm Valuation. 3 credits.
Course will focus on complex valuation techniques and build on the knowledge and skills developed in FNAN 341. Course will cover research and value companies of different sizes, value private equity, mezzanine financing, develop advance discounted cash flow models, and other relevant topics. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

FNAN 451: Real Estate Finance. 3 credits.
Studies mechanisms of real estate finance, sources of funds, loan contracts, principles of mortgage risk analysis, and secondary mortgage markets. Develops analytical skills including using microcomputer and appropriate software. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

FNAN 454: Real Estate Development. 3 credits.
Examines commercial real estate development process and principles plus actual residential, office, retail, and industrial projects. Includes financial analytical techniques to investigate project feasibility, density, financing viability, cash flows, and valuation. Emphasis placed on real-world, entrepreneurial, decision-making skills for developing commercial real estate. Lecture, discussion, project analysis. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

FNAN 462: Honors Seminar in Finance. 3 credits.
Provides an in-depth study and analysis of contemporary developments and topics of interest in finance. Topics and format will vary. Enrollment is limited and competitive. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.
Non-Degree or Washington Consortium level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**FNAN 472: Fintech and Blockchain in Finance.** 3 credits.
As the underlying technology that enables decentralized peer-to-peer currencies such as Bitcoin, blockchain has been touted as a revolutionary innovation to fundamentally change many aspects of business. How does blockchain actually work? How could it be applied to different business scenarios? Is blockchain truly the "next big thing" or just another hyped up buzz word? In this course, we'll conduct an objective investigation into the current status of blockchain development, and have an open dialog around its future promises. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: FNAN 301B or 303B.
B- Requires minimum grade of B-.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**FNAN 477: Student Managed Investment Fund.** 3 credits.
Provide each student with real world and hands-on experience in security analysis and portfolio construction through the management of the GMU Student Managed Investment Fund. Participants will collectively make investment decisions of the fund, the overall portfolio composition, and will employ various financial models used to assess sector, industry and individual security strength/weakness in their decision-making. Students will be required to perform the necessary quantitative and qualitative work, Bloomberg analysis, and present their research to all other fund members/faculty each semester. Security selection will be based on a diversified equity portfolio approach seeking to enhance risk-adjusted returns versus commonly used market benchmarks. Faculty and professional mentors will train students in the application of fundamental analysis and security selection through several lecture/workshop sessions. Increased interaction with the DC area investment community. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: FNAN 311B or 341B.
B- Requires minimum grade of B-.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**FNAN 491: Special Topics in Finance.** 3 credits.
Advanced study of special topics in finance. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: FNAN 301C or L301 or FNAN 303C.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**FNAN 492: Internship in Finance.** 3 credits.
Opportunity to gain practical, professional experience in conjunction with academic development. An internship is an important part of academic and career preparation. May be used as elective credit, but may not be repeated. Notes: No more than 6 credits of School of Business internship coursework (BUS 492 or FNAN 492) can be applied towards a student's 120 (BU) degree applicable credits. Students must receive departmental approval in order to register for this course; please contact the School of Business Office of Career Services for internal eligibility requirements. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to ACCT 492, BUS 492, MGMT 492, MIS 492, MKTG 492, OM 492, OSCM 492.

Recommended Prerequisite: 75 credit hours

Registration Restrictions:
Required Prerequisites: FNAN 301B or 303B.
B- Requires minimum grade of B-.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**FNAN 493: Financial Planning Capstone Internship.** 3 credits.
Financial planners need unique skills and knowledge to successfully serve clients. Students will learn the cognition and decision-making of clients and planners, the techniques to facilitate effective counsel, and the planners' professional responsibilities including those of the CFP(c) Board. Students will apply their knowledge through an internship in which they will create a financial plan for an actual client. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to ACCT 493.

Recommended Corequisite: FNAN 411

Registration Restrictions:
Required Prerequisites: FNAN 390C, 311C, ACCT 351C and 441C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FRLN 300: Humanities College to Career. 1 credit.  
Focuses on career choices and effective self-presentation for soon-to-be graduating students with majors in the humanities. Explores how skills typically learned in humanities majors can be leveraged for a successful transition to post-graduation employment. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to ENGL 303, HIST 385, PHIL 393, UNIV 420.

Schedule Type: Lecture

Grading:  
This course is graded on the Undergraduate Regular scale. (p. 84)

FRLN 330: Topics in World Literature. 3 credits.  
Major works of world literature with varying perspectives and topics, such as specific cultures, histories, myths, or music and the arts, as represented in literature. Notes: May be repeated when topic differs with permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 9 credits.

Mason Core: Literature (p. 142)

Recommended Prerequisite: ENGL 101/ENGH 101 and 45 credits or permission of instructor.

Schedule Type: Lecture

Grading:  
This course is graded on the Undergraduate Regular scale. (p. 84)

FRLN 331: Topics in World Cinema. 3 credits.  
Major works of world cinema with varying perspectives and topics, such as specific genres, periods, schools. Notes: Coursework in English. May be repeated when topic is different with permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Mason Core: Global Understanding (p. 142)

Recommended Prerequisite: ENGH 101 or permission of instructor.

Schedule Type: Seminar

Grading:  
This course is graded on the Undergraduate Regular scale. (p. 84)

FRLN 380: Topics in the Sociopoliics of Language. 3 credits.  
Addresses relationship between language and other social and cultural systems (macro sociolinguistics), and critical study of people's ideas about language (language ideology). Utilizes comparative approach to explore ways people use language to perform and communicate various social identities and categories; how and why people attach social meanings and values to particular ways of using language; development of official and unofficial language policies; and impact of language policies. Notes: May be repeated when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: ENGL 101/ENGH 101 and 45 credits, or permission of instructor.

Schedule Type: Lecture

Grading:  
This course is graded on the Undergraduate Regular scale. (p. 84)

FRLN 385: Multilingualism, Identity, and Power. 3 credits.  
Study of individual and societal aspects of multilingualism including language choice, linguistic maintenance and shift, code-switching, language planning, educational policy, and representations of multilingualism. Interdisciplinary approach emphasizes the social and political aspects of multilingualism, as well as the relationship of language to cultural, ethnoracial, and national identities and categories. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Synthesis (p. 142)
Recommended Prerequisite: Completion or concurrent enrollment in all other required Mason Core courses.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

FRLN 430: Topics in Comparative World Literatures. 3 credits.
Explores comparative studies of a topic through literary works written in at least two different languages. All material provided in translation. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FRLN 431: Medieval Intellectual Topics. 3 credits.
Focuses on topic in intellectual history of Middle Ages. Emphasizes literary or historical, depending on discipline of instructor. Relevant material may be drawn from philosophy, theology, and art. Notes: May be taken for credit by English or history majors. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to ENGH 421.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FRLN 490: Internship in Foreign Language Studies. 1-6 credits.
Qualified students work with schools, social service programs, government agencies, interest groups, museums, or corporations locally or abroad. Specific arrangements must be made with, and approved by, a faculty member of the specific language program during semester prior to enrollment. For each credit, student works on site at least 45 hours. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

FRLN 510: Bibliography and Research in Foreign Languages and Literature. 3 credits.
Use of basic bibliographical tools and methodologies for scholarly research in French, German, and Spanish. Taught in cooperation with university library staff. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 525: Literary Translation. 3 credits.
Critical approach and analysis of diverse texts such as poetry, drama, essay, and novel excerpts. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Recommended Prerequisite: Graduate standing or permission of department and advanced coursework in literary translation.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 530: Topics in Comparative World Literatures. 3 credits.
Explores comparative studies of a topic through literary works and/or other cultural production (cinema, pop culture, etc.) from at least two different language traditions. All material provided in translation. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 550: Special Topics. 3 credits.
Themes, periods, or genres vary from semester to semester. Focuses on topics that incorporate one or more languages taught in department, but instruction is in English. Notes: May be repeated with permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 551: Special Topics. 3 credits.
Themes, periods, or genres vary from semester to semester. Focuses on topics that incorporate one or more languages taught in department,
but instruction is in English. Notes: May be repeated with permission of
department. Offered by Modern & Classical Languages (p. 424). May be
repeated within the degree.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 565: Theory of Translation. 3 credits.
Lectures on nature, function of translating process. Evaluates theories of
translation with respect to text typology. Critiques selected translations
from target languages to English and vice versa. Offered by Modern &
Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 572: Integrating Technology into Language Learning. 3 credits.
Explores pedagogical and theoretical basis for integrating interactive
technologies into language learning programs, and examines potential
for learning, teaching, testing, and research. Includes hands-on analysis
and evaluation of materials. Notes: Prior experience with technology not
required. Offered by Modern & Classical Languages (p. 424). May not be
repeated for credit.

Recommended Prerequisite: Graduate standing or permission of
department, language teaching methods course, and language teaching
experience.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 573: Basic Issues in Language Pedagogy. 3 credits.
Explores major issues controversial in language pedagogy. Topics
include communicative competence as pedagogical goal, role of explicit

grammer teaching, proficiency movement, cultural authenticity, student-
centered learning, and technology. Offered by Modern & Classical
Languages (p. 424). May not be repeated for credit.

Recommended Prerequisite: Graduate standing or permission of
department, language teaching methods course, and language teaching
experience.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 575: Heritage Language Education. 3 credits.
Overview of the field of heritage language education, including
consideration of the linguistic and sociocultural characteristics of
heritage language students, empirical research on heritage language
education, and a range of instructional approaches, including critical
pedagogy. Offered by Modern & Classical Languages (p. 424). May not be
repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 590: Internship and Seminar in Translation. 3 credits.
Internships are nonpaying, work-study positions that focus on the
practice of translation. Qualified students placed with area institutions,
interest groups, agencies, or corporations. Notes: Placement depends
on availability of positions. Offered by Modern & Classical Languages
(p. 424). May not be repeated for credit.

Recommended Corequisite: Internships are nonpaying, work-study
positions that focus on the practice of translation. Qualified students are
placed with area institutions, interest groups, agencies or corporations.
Requires admission to the translation certification program. Please
contact Dr. Cordero in the department. Individualized Section Form
required.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Internship

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

FRLN 600: *Workshop in Foreign Languages*. 1-6 credits.
In-service workshops, tours, and seminars on selected topics in literature, language, bilingualism, culture, methodology. Notes: May not be applied toward MA in foreign languages without permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 620: *Literary Theory and Criticism*. 3 credits.
Studies nature of literary work, and analyzes contemporary critical approaches to literature. Notes: May not be taken for credit by students who previously received credit for FRLN 615. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 650: *The Teaching of Culture in Foreign Language Programs*. 3 credits.
Purpose and methods of study of culture, with emphasis on strategies and techniques for teaching culture in foreign language programs. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 660: *Approaches to the Study of Language*. 3 credits.
Linguistics and its relationship to other disciplines, including study of generative grammar with syntactic problems drawn from commonly taught foreign languages. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRLN 670: *Topics in Language Learning and Teaching*. 3 credits.
Provides in-depth examination of a particular topic in language learning and teaching. Includes consideration of language acquisition and/or educational research as well as pedagogical implications and practice. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Forensic Science (FRSC)

100 Level Courses

The forensic sciences encompass the skills and expertise of individuals from a multitude of scientific disciplines to assist in the investigation of cases of legal significance. This course is designed to provide the student with a broad introduction to the methods and techniques utilized by today’s forensic professionals. We will explore the application of the physical, medical, natural and engineering sciences to specialized legal contexts, investigation of a crime scene, the role of law enforcement crime labs, and other important issues relating to forensic investigations. Offered by College of Science (p. 613). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FRLN 660: *Approaches to the Study of Language*. 3 credits.
Linguistics and its relationship to other disciplines, including study of generative grammar with syntactic problems drawn from commonly taught foreign languages. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

FRSC 200: *Survey of Forensic Science*. 3 credits.
This course will familiarize students with the basic principles, professional practice, quality assurance, and quality control measures employed in the practice of forensic science in the American system of
FRSC 200: Introduction to Criminalistics. 3 credits.
This course will provide an overview of the field of criminalistics, with a focus on the recognition, collection, preservation, and analysis of physical evidence. During the course, the student will be introduced to topics such as fingerprints, question documents, firearms, drugs of abuse, explosives and arson to prepare them for additional, more in-depth classes in criminalistics/forensic science. Offered by College of Science (p. 613). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: FRSC 200 and 201.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FRSC 303: Forensic Evidence and Ethics. 3 credits.
This course will acquaint the student with the application of scientific methods and the interaction it may have with legal principles. It will prepare the student for future applications of forensic science with its role in the administration of justice, courtroom testimony, and the ethical rules and duties under codes of professional conduct and practice. Offered by College of Science (p. 613). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: FRSC 200 and CRIM 100.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FRSC 304: Forensic Chemistry. 3 credits.
Introduction to the chemical principles and methods used in the application of forensics toward the elucidation of criminal activity and to support litigation. Students will be learning the fundamentals of statistics (QA/QC), chromatography (GC and LC) and instrumentation (microscopy, FTIR, and MS) that will enable forensics analysis of trace evidence relating to: drugs, explosives, toxicology, arson, firearms, volatiles, and hair/fibers. Offered by College of Science (p. 613). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: FRSC 200, 201, CHEM 211, 213, 212 and 214.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

FRSC 401: Crime Scene Investigations. 3 credits.
This course provides the scientific principles of crime scene investigations by applying the basic knowledge of proper documentation, collection and preservation of physical evidence. Proper crime scene protocols and evidence processing techniques will be performed in areas such as, forensic photography, sketching, blood stain pattern analysis, trajectory, skeletal remains, and fingerprinting. Offered by College of Science (p. 613). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: FRSC 200, 201 and 303.
C Requires minimum grade of C.

Enrollment limited to students in the SC-BS-FRSC program.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FRSC 405: Independent Research Methods. 3 credits.
This course is designed to allow students to complete an approved independent forensic science research project under the guidance of a faculty mentor. A formal research proposal will be prepared and submitted. In addition to conferring with the instructor regularly regarding the process of their research, students will also be introduced to research and writing methods throughout the course. Offered by College of Science (p. 613). Limited to three attempts.

Recommended Prerequisite: Completion of 90 credits or permission of instructor.

Registration Restrictions:
Enrollment limited to students in the SC-BS-FRSC program.

Schedule Type: Research
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
FRSC 406: Forensic Internship. 3 credits.
This course is designed to allow students the opportunity to enhance their academic coursework with field work either at an approved agency or under the guidance of an approved faculty mentor that will substantially correlate with a discipline of forensic science. For successful completion, the student must complete a minimum of 135 hours of work. Offered by College of Science (p. 613). Limited to three attempts.

Recommended Prerequisite: Completion of 60 credits or permission of instructor.

Registration Restrictions: Enrollment limited to students in the SC-BS-FRSC program.

Schedule Type: Internship

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

FRSC 415: Selected Topics in Forensic Science. 1-3 credits.
Topics vary according to instructor's specialty. Note: If multiple courses are taken, topics must be different. Offered by College of Science (p. 613). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Permission of instructor

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

FRSC 420: Forensic Toxicology. 3 credits.
Examines toxic substances and their effects on human cellular and organ systems. The course focuses on human physiological concepts, the human enzymatic detoxification processes, methodologies for identifying toxins, and specific toxic analytes. Offered by College of Science (p. 613). Limited to three attempts.

Recommended Prerequisite: Completion of Forensic Science Foundation courses

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

FRSC 460: Forensic DNA Analysis. 3 credits.
This course will provide an overview of the foundation and history of forensic science. During the course, the various disciplines and specialties within forensic science will be discussed such as biology, chemistry, toxicology, microscopy, odontology, and anthropology. Additionally, the different types of physical evidence and instrumentation encountered in the field will be reviewed. Topics within ethics and quality assurance are also discussed. Offered by College of Science (p. 613). Limited to three attempts.

Recommended Corequisite: FRSC 461

Registration Restrictions: Required Prerequisites: FRSC 200, 201, BIOL 213, 311 and FRSC 460. *May be taken concurrently. C Requires minimum grade of C.

Schedule Type: Laboratory

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

FRSC 461: Forensic DNA Analysis Laboratory. 1 credit.
This laboratory course will present the most common serological and DNA laboratory techniques associated with forensic casework as taught in the lecture section of the Forensic DNA Analysis course. Students will have hands-on experience with basic forensic DNA procedures including the examination and identification of bodily fluid stains, DNA extraction, quantitation, PCR amplification, genotyping, and interpretation. Offered by College of Science (p. 613). Limited to three attempts.

Registration Restrictions: Required Prerequisites: FRSC 200, 201, BIOL 213, 311 and FRSC 460. *May be taken concurrently. C Requires minimum grade of C.

Schedule Type: Laboratory

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

FRSC 469: Comprehensive Examination. 0 credits.
The comprehensive examination ensures that the student is prepared to engage in an entry level forensic profession, in advanced forensic training or a graduate program. Students are required to pass this examination prior to graduation. Offered by College of Science (p. 613). May be repeated within the degree.

Recommended Corequisite: FRSC 304, 401 and 460.

Registration Restrictions: Required Prerequisites: FRSC 200, 201, 302 and 303. C Requires minimum grade of C.

Enrollment limited to students in the SC-BS-FRSC program.

Schedule Type: Independent Study

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

500 Level Courses
FRSC 500: Introduction to Forensic Science. 3 credits.
This course will provide an overview of the foundation and history of forensic science. During the course, the various disciplines and specialties within forensic science will be discussed such as biology, chemistry, toxicology, microscopy, odontology, and anthropology. Additionally, the different types of physical evidence and instrumentation encountered in the field will be reviewed. Topics within ethics and quality assurance are also discussed. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)
FRSC 510: Basic Crime Analysis. 3 credits.
This course examines the role of the crime scene investigator, search, seizure and related legal issues; crime scene documentation (note taking, photography, sketching, and measurements); processing of latents and 2-D and 3-D impressions; collection, packaging and preservation of physical evidence. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 511: Advanced Crime Scene Analysis. 3 credits.
Advanced Crime Scene Analysis is designed to build on concepts introduced in FRSC 510 (Basic Crime Scene Analysis), and to provide an enhanced foundation in the field of criminalistics for those students who are interested in learning the application of science to solving crimes. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: FRSC 510B.
B: Requires minimum grade of B-

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 512: Physical Evidence Laboratory. 3 credits.
This is a series of practical laboratory exercises that introduces the student to the analysis of physical evidence including the examination of pattern and trace evidence such as hairs, tool marks, firearms evidence, and shoe prints; processing of fingerprints using various chemicals, powders, and alternate light sources. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: FRSC 510B.
B: Requires minimum grade of B-

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 513: Forensic Photography. 3 credits.
This series of lecture and practical photography exercises introduces the student to photographic crime scene documentation techniques including concepts of controlling exposure, lighting, focus, and composition as it relates to matters of a forensic nature; photographic documentation of criminal artifacts including fluorescent fingerprints and Blue Star treated blood stains. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 514: Survey of Forensic Chemistry, Biology, and DNA Analysis. 3 credits.
This course will provide an overview of the history, theory and principles of the various processes of Forensic Biology and Chemistry analysis, including quality assurance. General applications of chemistry analysis as applied to forensic evidence will be covered, as well as, the biology and genetics of DNA and the typing systems used in Forensic DNA analysis. The technology and instrumentation used in forensic chemistry analysis and the analysis of biological fluids and DNA will also be covered. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 515: Selected Topics in Forensic Science. 3 credits.
Topics vary with instructor's specialty. Offered by College of Science (p. 613). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
FRSC 516: Forensic Drone Photography. 3 credits.
This course explores the rapidly expanding use of Unmanned Aerial Systems (UAS) or Unmanned Aerial Vehicle (UAV) also referred to as a drone to assist forensic investigators to document scenes. These capture platforms allow the user to document events using both video and photographs from a vantage point not easily obtained. The data collected can then be further extracted to form maps and models of the scene. Students in this course will first be taught the knowledge and skills necessary to apply for a FAA Part 107 Commercial Drone (UAS) license. Next, they will develop their piloting skills to capture data through a series of lectures and practical problems typically found by forensic investigators. Finally, a survey of legal requirements for drone use and procedures to follow to seek authorizations to fly in certain areas. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

FRSC 517: Questioned Document Examination. 3 credits.
Theory and principles of handwriting and printing processes, paper manufacture and fiber analysis, fracture match comparison, ink analysis, and indented writing examinations; methods of examining questioned documents. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

FRSC 520: Toxicology. 3 credits.
Forensic Toxicology examines the adverse effects of alcohol, drugs and other chemicals on the human body. A lecture style course integrating pharmacology, toxicology and analytical chemistry to understand how the principles of toxicology are applied to the legal system. Offered by College of Science (p. 613). May not be repeated for credit.

Recommended Prerequisite: Advanced level undergraduate course in Chemistry, Biology or Biochemistry or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

FRSC 521: Chemistry Analysis. 1 credit.
A detailed examination and analysis of the law affecting forensic science across the discipline range. Special emphasis is given to the laws affecting evidence, courtroom procedure, ethics, and professional responsibilities of the forensic expert. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

FRSC 530: Law and Forensic Science. 3 credits.
The principles of forensic chemistry will be addressed in this course, including analytical chemistry, instrumental methods of analysis, sample handling, drug chemistry and toxicology. Offered by College of Science (p. 613). May not be repeated for credit.

Recommended Prerequisite: Undergraduate degree in chemistry or biology. The student must have a good understanding of general Chemistry including polarity and acid/base chemistry. A student should have taken Organic Chemistry, and be able to identify functional groups and other chemistry structures that make up a molecule. Any exposure to instrumental techniques such as gas chromatography, mass spectrometry and infrared spectroscopy are helpful.

FRSC 540: Advanced Forensic Chemistry. 3 credits.
The principles of forensic chemistry will be addressed in this course, including analytical chemistry, instrumental methods of analysis, sample handling, drug chemistry and toxicology. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

FRSC 541: Forensic Chemistry Laboratory. 1 credit.
This course will familiarize students with chemical knowledge gained from experimental observations and studies in the laboratory. Students will examine, test and establish for themselves the forensic chemistry
discussed in the lecture courses. Note: The successful passing of a Virginia Department of Forensic Science background check is required prior to gaining access to this laboratory course. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Undergraduate degree in chemistry or biology. The student must have a good understanding of general Chemistry including polarity and acid/base chemistry. A student should have taken Organic Chemistry, and be able to identify functional groups and other chemistry structures that make up a molecule. Any exposure to instrumental techniques such as gas chromatography, mass spectrometry and infrared spectroscopy are helpful.

**Registration Restrictions:**
- **Required Prerequisite:** FRSC 540\textsuperscript{B-}.
  - \textsuperscript{*} May be taken concurrently.
  - \textsuperscript{B-} Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a concentration in Forensic Chemistry Analysis.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FRSC 550:** *Issues in Forensic Anthropology.* 3 credits.
This course examines issues related to the recovery and analysis of human skeletal remains in a medicolegal context. Topics include detection and mapping approaches for human remains, assessment of biological information from the skeleton (such as sex, ancestry, age, and stature), and the analysis of skeletal trauma. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
- Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

- Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

- Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FRSC 560:** *Advanced Forensic DNA Sciences.* 3 credits.
This is a seminar style course providing an overview of the history, theory and principles of the various processes of Forensic DNA analysis. The biology and genetics of DNA and the typing systems used in Forensic DNA will be reviewed. The technology used in the analysis of DNA, including data analysis, interpretation, CODIS database and statistical applications will also be covered. Offered by College of Science (p. 613). May not be repeated for credit.

**Recommended Prerequisite:** Undergraduate coursework in molecular and/or cell biology, as well as genetics, prior to taking this course or permission of instructor.

**Registration Restrictions:**
- **Required Prerequisites:** FRSC 561\textsuperscript{B-} and 514\textsuperscript{B-}.
  - \textsuperscript{*} May be taken concurrently.
  - \textsuperscript{B-} Requires minimum grade of B-.

- Enrollment is limited to students with a concentration in Forensic Biology Analysis.

- Enrollment is limited to Graduate level students.

- Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FRSC 561:** *Forensic DNA Laboratory.* 1 credit.
This laboratory course will provide comprehensive coverage of the various types of DNA testing currently used in forensic biology laboratories. Students will have hands-on experience with the analytical equipment employed and the techniques used for human identification in forensic casework, such as, DNA extraction, quantitation, PCR amplification, genotyping, and interpretation. Note: The successful passing of a Virginia Department of Forensic Science background check is required prior to gaining access to this laboratory course. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
- **Required Prerequisite:** FRSC 560\textsuperscript{B-}.
  - \textsuperscript{*} May be taken concurrently.
  - \textsuperscript{B-} Requires minimum grade of B-.

- Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

- Enrollment is limited to students with a concentration in Forensic Biology Analysis.

- Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

- Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FRSC 570:** *Trace and Physical Evidence Concepts.* 3 credits.
Prepares students to evaluate physical evidence through the use of microscopic, chemical, and instrumental means. The course will emphasize the scientific procedures used to identify the evidence, the analysis of data generated during the identification phase, and the inductive reasoning process which allows the forensic scientist to draw conclusions based on the evidence at hand. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
- Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FRSC 580: Facial Reconstruction.** 3 credits.
This course begins with an introduction to methods used in image analysis, and the methods of facial reconstruction. The course will then explore modern techniques applied to several areas of forensic imaging. Advance topics in forensic sculpturing, 3D imagery, and post-mortem imagery will be explored. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FRSC 590: Medicolegal Death Investigation and Pathology.** 3 credits.
Introduction to the pathology and physiology of the human body with an emphasis on scientific and medical terminology, in addition to the various techniques used in medicolegal death investigation. Discussion of death scene analysis, autopsy procedures, and unidentified remains. Overview of the role of the medical examiner’s office within the United States and an introduction to the forensic investigation of sudden and unexpected deaths, including homicides, suicides, accidents, accidental deaths, and various traumatic deaths. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: FRSC 510 B-.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FRSC 610: Forensic Research Project.** 1-4 credits.
This course is a two semester course required for all graduate students prior to graduation. The first semester course consists of a 1.0 Credit Course where the students select a research topic and a qualified research advisor (faculty member or affiliated forensic science professional). The second semester course is a 3.0 Credit Course where the students perform their research, write their research paper and make a presentation of their research project to GMU Forensic Science Faculty members. Offered by College of Science (p. 613). May be repeated within the degree for a maximum 4 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Forensic Science.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**FRSC 620: Face and Biometric Pattern Analysis.** 3 credits.
This course will familiarize students with the basic principles and uses of biometrics for automated searches and comparisons by forensic examiners. This course will review the basics of face, fingerprints, iris, and speaker recognition. Students should gain an understanding of how automated systems and forensic examiners perform recognition. Students will also learn the capabilities and limitations of biometric recognition. Offered by College of Science (p. 613). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**600 Level Courses**

**FRSC 600: Forensics Seminar.** 1 credit.
Presentations are made about selected topics in law enforcement, homeland security and forensic science presented by professionals working in the field and forensic science research presented by GMU graduate students. Students must also write an article, not to exceed four pages, chosen by the students from a set of recent, peer-reviewed scientific journals established by the instructor. Students will analyze the scientific method used in the article and critique the research performed.

Notes: Students enrolled in the forensic science MS program must attend at least 80% of the seminars. Offered by College of Science (p. 613). May be repeated within the degree for a maximum 4 credits.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 630: Fingerprint Identification. 3 credits.
This course will cover the exploration of the techniques and methods of identification, capture and analysis of fingerprint evidence, including consideration of the fundamentals of fingerprint patterns, classification formulas and extensions, techniques for taking good fingerprints, problems in fingerprinting, preparation of fingerprint charts for court testimony, and practical exercises for capturing fingerprints. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 640: Legal, Privacy and Ethical Issues in Identity Analysis. 3 credits.
This course will review basic policies and doctrinal guidance related to the applications of biological, physical, chemical, and medical sciences to questions of evidence and law. In doing so, students should gain a basic understanding of the high level policies, protocols, standards, privacy, civil liberties, and doctrine related to the forensic sciences as they are practiced relating to identity analysis. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 650: Identity Analysis Applications. 1 credit.
This course will review the basics of biometrics and how the various biometric modalities can be used to aid in identification and identity verification. The course will also focus on how biometrics and forensics are used, or can be used, in various applications from military uses, intelligence/counter-terrorism, border and immigration control and in support of state development. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

400 Level Courses

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FRSC 690: Capstone - Moot Court & Expert Testimony. 3 credits.
In this course, students will learn and practice how to incorporate forensic science theory, research, analysis, writing and speaking skills into a life like moot court experience. They will learn how and why forensic science evidence is admitted into court proceedings, and their role in the admission of evidence. Topics will include Federal and state rules of evidence; admission of forensic science testimony into criminal and civil cases; the process of being qualified as an expert witness, including the Voir dire Process; The role and responsibility of expert witnesses; Developing an Expert Witness Curriculum CV, and trial preparation; Proper laboratory and CSI report development and writing for presentation in court, and developing proper speaking skills for courtroom testimony. Offered by College of Science (p. 613). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: FRSC 500B, 510B, and 530B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

FRSC 790: Internship in Forensic Science. 1-3 credits.
On the job experience for graduate students in industry, government laboratories, investigative units, or approved study programs with forensic science employers. Students work in observational, experimental, or theoretical research, and prepare weekly journals, as well as midpoint and final evaluations completed by the employer. The student is responsible for applying to and obtaining the internship prior to registering for this course. Offered by College of Science (p. 613). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Forensics or Forensic Science.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Project chosen and completed under guidance of graduate faculty
member. Comprehensive report (thesis) acceptable to student’s advisory
committee is required. Offered by College of Science (p. 613). May be
repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**French (FREN)**

**100 Level Courses**

**FREN 101: Elementary French I.** 3 credits.
For students with no knowledge of French. Introduces elements of
grammar, vocabulary, oral skills, listening comprehension, and reading.
Notes: Students may not receive credit for FREN 101 and FREN 110.
Offered by Modern & Classical Languages (p. 424). Limited to three
attempts. Equivalent to FREN 110.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 102: Elementary French II.** 3 credits.
Continuation of FREN 101. Notes: Students may not receive credit for
FREN 102 and FREN 110. Offered by Modern & Classical Languages
(p. 424). Limited to three attempts. Equivalent to FREN 110, FREN 115.

**Recommended Prerequisite:** FREN 101, appropriate placement score, or
permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 110: Elementary French.** 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening
comprehension, and reading. Notes: Students may not receive credit for
FREN 110 and FREN 101, 102. Offered by Modern & Classical Languages
(p. 424). Limited to three attempts. Equivalent to FREN 101, FREN 102,
FREN 115.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 115: Review of Elementary French.** 3 credits.
Reviews elements of French for students who have studied French
previously. Notes: Students may not receive credit for FREN 115 and
FREN 102, or 110. Offered by Modern & Classical Languages (p. 424).
Limited to three attempts. Equivalent to FREN 102, FREN 110.

**Recommended Prerequisite:** Appropriate placement score, or permission
of department.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**FREN 201: Intermediate French I.** 3 credits.
Further development of skills in listening, speaking, reading, and writing.
Notes: FREN 201 and 202 must be taken in sequence. Offered by Modern
& Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** FREN 102 or FREN 110, appropriate
placement score, or permission of department.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 202: Intermediate French II.** 3 credits.
Applies language skills to reading, composition, and class discussion.
Offered by Modern & Classical Languages (p. 424). Limited to three
attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**FREN 300: Study Tour in France.** 1-6 credits.
Directed study tour of cultural and literary points of interest in France.
Briefing sessions and reading selection given before the trip. Notes: All
papers and exams required for credit are due by end of summer session.
Offered by Modern & Classical Languages (p. 424). Limited to three
attempts.

**Recommended Prerequisite:** FREN 202, appropriate placement score, or
permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 309: Reading and Writing Skills Development.** 6 credits.
Development of ability to write on topics of current interest. Readings
provide examples of each topic and necessary vocabulary for
compositions. Introduces reading strategies and provides practice
in reading of different kinds of texts. Offered by Modern & Classical
Languages (p. 424). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** FREN 202 or equivalent; appropriate
placement score; or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 310: Oral Proficiency in French.** 3 credits.
Develops conversational proficiency in French with attention to
various specific communicative strategies and functions. Practice in
pronunciation and diction based on systematic study of sound system
of French. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** FREN 202, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 320:** *Contemporary Tour de France*. 3 credits.
Examines contemporary social, political, economic, cultural trends in France. Covers domestic and international topics such as debates around French identity, migration and civil rights, political parties, the media, family life, work-related issues, participation in international organizations and involvement with former colonies and overseas regions. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** FREN 309 or permission of the instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 325:** *Major French Writers (Topic Varies)*. 3 credits.
Studies works of major French writers. Writers to be studied vary. Notes: May be repeated for credit with permission of department. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** FREN 309 or permission of the instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 371:** *French Civilization, Culture, and Literature: Ancient Gaul to 1789*. 3 credits.
Examines history, civilization (daily life, politics, science, philosophy, religion), culture (architecture, art, music, dance), and literature of France from Ancient Gaul to the eve of the French Revolution. Studies development of French nation and its people through written texts, visual arts, and music. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to FREN 380.

**Recommended Prerequisite:** FREN 309 or permission of the instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 370:** *French Civilization, Culture, and Literature: 1789 to the Present*. 3 credits.
Examines history, civilization (daily life, politics, science, philosophy, religion), culture (architecture, art, music, dance), and literature of France from French Revolution of 1789 to the present. Studies development of French nation and its people through written texts, visual arts, and music. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to FREN 380.

**Recommended Prerequisite:** FREN 309 or permission of the instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 340:** *Francophone Identities*. 3 credits.
Provides opportunity to learn about richness, variety, and complexity of francophone world through study of literature, culture, social life, and identities of various francophone regions including Caribbean, Africa, Quebec, and Indochina. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** FREN 309, appropriate placement score, or permission of instructor.
FREN 381: *Introduction to Literary Analysis.* 3 credits.
Structured approach to reading and analysis of French literary texts. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 385: *Introduction to French Linguistics.* 3 credits.
Introduction to the linguistic analysis of the French language, including its sound system (phonetics, phonology), its rules of word formation (morphology) and sentence structure (syntax), its system of word meaning (semantics), its history and origin (historical linguistics), and its variation as a function of social and regional factors (sociolinguistics). Includes discussion of theoretical issues and cross-linguistic comparisons involving French. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or better in FREN 309.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Introduces the terminology and the culture of business, hospitality, and fashion in the French-speaking world. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** 15 hours of FREN or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Studies written and oral styles of communication in commercial, governmental and non-governmental settings. Satisfies needs of students preparing for work in multinational business and foreign service. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

FREN 400: *Study Abroad in France or Francophone Region.* 1-6 credits.
2 to 4 week programs in France or the Francophone world with language, culture and literature courses, local visits and excursions. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 415: *Topics in Medieval French Literature and Culture.* 3 credits.
Analyzes a selection of important literary texts (chanson, novel, poetry, short story) and authors in their historical and cultural contexts: geste, feudalism, socio-political and religious (in)stability. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 416: *Topics in Renaissance French Literature and Culture.* 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and theater) and authors in their historical and cultural contexts: humanism, reformation, codification of language and birth of nation-state. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 417: *Topics in Seventeenth-Century French Literature and Culture.* 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and theater) and authors in their historical and cultural contexts: baroque, classicism, social and philosophical essays, satirical plays. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 418: *Topics in Eighteenth-Century French Literature and Culture.* 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and theater) and authors in their historical and cultural contexts: enlightenment, social, political and philosophical trends and issues, pre-romanticism. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 419: Topics in Nineteenth-Century French Literature and Culture.** 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and theater) and authors in their historical and cultural contexts: pre-Romanticism; Romanticism; Realism; Symbolism; Naturalism. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 420: Topics in Twentieth and Twenty-First-Century French Literature and Culture.** 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and theater) and authors in their historical and cultural contexts: surrealists, existentialists, new novelists, feminists, etc. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 450: Special Topics Related to French Literature and Culture.** 3 credits.
Analyzes selected texts, authors, movements, and issues within a comparative historical and cultural context over two or more centuries or with an interdisciplinary approach. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 451: Topics in Sub-Saharan Francophone Literature and Culture.** 3 credits.
Analyzes a selection of literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: Negritude, (post)colonialism, new African voices within and beyond the continent. Notes: May be repeated when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 453: Topics in North African Francophone Literature and Culture.** 3 credits.
Analyzes a selection of literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts with a focus on the construction of identity: Maghreb in pre and (post)colonial era, recent ideological trends in writing. Notes: May be repeated for credit with permission of instructor. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 454: Topics in Caribbean Francophone Literature and Culture.** 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: the construction of identity through and beyond Negritude, Antillanité, Créolité, and migration. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 455: Special Topics Related to Francophone Literature and Culture.** 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: gender studies, migration and identity-building, ethno-social tensions, political strife, religious conflicts throughout the francophone world. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 457: Topics in Sub-Saharan Francophone Literature and Culture.** 3 credits.
Analyzes representative literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts. Emphasizes contemporary works. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of French at the 300 level or permission of instructor.
FREN 464:Advanced Oral and Written Expression. 3 credits.
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 463:History of the French Language. 3 credits.
Diachronic study of the French language from the 9th to the 20th century, with a focus on morphology, syntax and lexic changes. Close study of various texts (prose, poetry, political writing, theater and short stories) in the light of their socio-historical contexts. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

FREN 462:Stylistics. 3 credits.
Describes and analyzes the variability of forms and styles and the more complex aspects of the French language. Develops writing skills through readings, discussions, and compositions. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

FREN 467:Special Topics related to French and Francophone Literature and Culture. 3 credits.
Content varies: diachronic or synchronic study of the French language or one of its aspects; sociolinguistics; language teaching methodology; etc. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 15 credits of French at the 300 level or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 466:Special Topics related to the French language. 3 credits.
Recommended Prerequisite: 15 credits of French at the 300 level or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 465:Special Topics related to French and Francophone Literature and Culture. 3 credits.
Recommended Prerequisite: 15 credits of French at the 300 level or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

FREN 460:Advanced Oral and Written Expression. 3 credits.
Intensive course designed to help students obtain fluency in oral and written French. Develops conversational skills and mastery of vocabulary through class discussions, oral and written reports, debates and presentations on current topics and events linked to the French and Francophone world. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: 15 credits of French, or permission of instructor.
of independent study may be applied to fulfilling requirements in concentration. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 491:** *Independent Study.* 1-3 credits.
Research and analysis of selected problem in literature or linguistics in consultation with department member. Notes: Only 6 credits of independent study may be applied to fulfilling requirements in concentration. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 497:** *Senior Honors Tutorial.* 3 credits.
Students who meet these requirements admitted to candidacy after submitting letter of application to departmental Honors Committee in second half of junior year. Also requires faculty recommendation and interview by Honors Committee. First semester involves weekly meetings with faculty member to discuss readings from comprehensive list prepared by French faculty. Second semester requires independent research and completion of honors essay under supervision of French faculty member. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**FREN 498:** *Senior Honors Tutorial.* 3 credits.
Students who meet these requirements admitted to candidacy after submitting letter of application to departmental Honors Committee in second half of junior year. Also requires faculty recommendation and interview by Honors Committee. First semester involves weekly meetings with faculty member to discuss readings from comprehensive list prepared by French faculty. Second semester requires independent research and completion of honors essay under supervision of French faculty member. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**FREN 500:** *Study Abroad in France or Francophone Region.* 1-6 credits.
2 to 4-week programs in France or the Francophone world with language, culture and literature courses, local visits and excursions. Advanced critical research and writing required. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FREN 515:** *Topics in Medieval French Literature and Culture.* 3 credits.
Analyzes a selection of important literary texts (chanson, novel, poetry, short story) and authors in their historical and cultural contexts: geste, feudalism, socio-political and religious (in)stability. Advanced critical research and writing required. Notes: Coursework in French. May be repeated when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FREN 516:** *Topics in Renaissance French Literature and Culture.* 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and theater) and authors in their historical and cultural contexts: humanism, reformation, and codification of language and birth of nation-state. Advanced critical research and writing required. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FREN 517:** *Topics in Seventeenth-Century French Literature and Culture.* 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: enlightenment, social, political and philosophical trends and issues, pre-romanticism. Advanced critical research and writing required. Notes: Content varies. May be repeated for credit. Coursework in French. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FREN 518: Topics in Eighteenth-Century French Literature and Culture. 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: enlightenment, social, political and philosophical trends and issues, pre-romanticism. Advanced critical research and writing required. Notes: Content varies. Coursework in French. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FREN 519: Topics in Nineteenth-Century French Literature and Culture. 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: pre-Romanticism; Romanticism; Realism; Symbolism; Naturalism. Advanced critical research and writing required. Notes: Content varies. Coursework in French. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FREN 520: Topics in Twentieth and Twenty-First-Century French Literature and Culture. 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: surrealists, existentialists, new novelists, feminists, etc. Advanced critical research and writing required. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FREN 550: Special Topics. 3 credits.
Specialized topics relating to French culture and literature. Notes: Content varies. May be repeated for credit. Coursework in French. Offered by Modern & Classical Languages (p. 424). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FREN 551: Topics in Francophone Sub-Saharan Literature and Culture. 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: Negritude, (post)colonialism, new African voices within and beyond the continent. Advanced critical research and writing required. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

FREN 553: Topics in North African Francophone Literature and Culture. 3 credits.
Analyzes a selection of literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts with a focus on the construction of identity: Maghreb in pre and (post)colonial...
era, recent ideological trends in writing. Advanced critical research and writing required. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FREN 554:** Topics in Francophone Caribbean Literature and Culture. 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: the construction of identity through and beyond Negritude, Antillanite, Creolite, and migration. Advanced critical research and writing required. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FREN 555:** Special Topics related to Francophone Literature and Culture. 3 credits.
Analyzes a selection of important literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts: gender studies, migration and identity-building, ethno-social tensions, political strife, religious conflicts throughout the francophone world. Advanced critical research and writing required. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FREN 557:** Topics in Quebec and French-Canadian Literature and Culture. 3 credits.
Analyzes representative literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts. Emphasizes contemporary works. Advanced critical research and writing required. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FREN 561:** Linguistic Structure of Modern French. 3 credits.
Describes and analyzes the variability of forms and styles and the more complex aspects of the French language. Develops writing skills through readings, discussions, and compositions. Advanced critical research and writing. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**FREN 562:** Stylistics. 3 credits.
Describes and analyzes the variability of forms and styles and the more complex aspects of the French language. Develops writing skills through readings, discussions, and compositions. Advanced critical research and writing. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
FREN 563: History of the French Language. 3 credits.  
Analyzes a selection of literary texts (novel, short story, poetry, and/or theater) and authors in their historical and cultural contexts with a focus on the construction of identity. Maghreb in pre and (post)colonial era, recent ideological trends in writing. Advanced critical research and writing required. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

FREN 564: Advanced Translation. 3 credits.  
Analyzes theories and methods of translation, with a focus on translation practice (French to English and English to French) of a varied selection of texts (periodicals, short stories, novel excerpts, newspaper articles, etc.) Advanced critical research and writing required. Notes: Translations from French to English and English to French. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

FREN 565: Special Topics Related to the French Language. 3 credits.  
Content varies: diachronic or synchronic study of the French language or one of its aspects; sociolinguistics; language teaching methodology; etc. Advanced critical research and writing required. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

FREN 567: Special Topics related to French and Francophone Literature and Culture. 3 credits.  
Explores issues related to the francophone world. Emphasis on comparative issues, not geographical areas. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 15 credits of French at the 300 level or permission of instructor.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

FREN 570: French and Francophone Cinema. 3 credits.  
Topics such as early days of French cinema, a nouvelle vague, women film directors, Quebecois, African and Caribbean films, selected by type, period or director. Advanced critical research and writing required. Viewing of films outside of class time. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

FREN 575: Grammatical Analysis. 3 credits.  
Analyzes selected texts, authors, movements, and issues within comparative historical and cultural contexts as related to France and to various francophone regions of the world or with an interdisciplinary approach. Advanced critical research and writing required. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registration Restrictions:  
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:  
This course is graded on the Graduate Regular scale. (p. 84)
700 Level Courses

FREN 798: Directed Reading and Thesis Research. 3 credits.
Reading and research for thesis under direction of a faculty member.
Notes: Open to degree students who desire to work on independent study with a faculty mentor or who have completed at least 24 credits and have been approved by the French Graduate Faculty to conduct research for a M.A. thesis. See Modern Classical Languages Graduate Student Handbook for complete explanation of the thesis option. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Recommended Prerequisite: Degree students who desire to work on independent study with a faculty mentor or who have completed at least 24 credits and have been approved by the French Graduate Faculty to conduct research for a M.A. thesis.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Graduate Special scale. (p. 84)

FREN 799: Thesis. 1-6 credits.
Research on approved thesis topic under direction of thesis committee.
Notes: Students must register for a minimum of 3 credits in the first semester of 799 and maintain continuous enrollment in 799 while writing and submitting the thesis. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree.

Recommended Prerequisite: FREN 798 and approval of director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Geography and Geoinformation Science (GGS)

100 Level Courses

GGS 101: Major World Regions. 3 credits.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 102: Physical Geography. 3 credits.
Interrelated processes affecting global distribution and character of climate, soils, vegetation, hydrology, and landforms. Includes elements of mapping. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Mason Core: Natural Science Overview, Encore: Sustainability (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 103: Human Geography. 3 credits.
Overview of major ideas and approaches to studying spatial aspects of human social and behavioral systems. Surveys distribution and movement of human populations, characteristics and distribution of cultural mosaics, patterns of economic interdependence, and study of forces of cooperation and conflict among people from global perspective. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Mason Core: Social/Behavioral Sciences, Encore: Sustainability (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 110: Introduction to Geoinformation Technologies. 3 credits.
This course introduces students to basic geoinformation technology concepts and applications. Students learn about and apply spatial data collection analytic tools and methods, including geographic information systems, and web-based map developments. Lectures examine social trends, ethical issues including privacy state of the art technological research and developments of geoinformation technologies in industry, government, education, and everyday life. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Specialized Designation: Discovery of Scholarship.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 121: Dynamic Atmosphere and Hydrosphere. 4 credits.
Systematic study of weather, climate, energy, and hydrologic systems viewed from a geospatial and global perspective. Studies the spatial distribution and relationships of the Earth’s climate and hydrologic systems to other Earth systems, as well as the processes driving and changing them, including energy, climate, weather, and water resources. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Mason Core: Natural Science with Lab, Encore: Sustainability (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 122: Dynamic Geosphere and Ecosphere. 4 credits.
Systematic study of biogeography and soils, viewed from a geographic, or spatial, perspective. We will study the spatial distribution and relationships of Earth's biomes and soils systems to other Earth systems, and the processes driving them, including energy, climate, nutrients, chemistry, and moisture. Cannot be combined for credit with EVPP 110 or EVPP 111. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

GGS 210: Introduction to Spatial Computing. 3 credits.
This course introduces students to Geo-Spatial Data Analysis. Students will learn the basic techniques for data collection and storage, data processing and data mining using location data. Students will work with geospatial objects, such as points, lines and polygons and get hands-on experience in processing spatial data. Basic geometric algorithms for point-in-polygon tests and line-segment intersection tests will be presented. Techniques for spatial navigation, such as shortest path algorithm in free space and in spatial networks will be discussed. Technical challenges such as storing, reading and parsing geospatial will be highlighted and students will conduct geo-spatial data analysis in teams. To analyze data, this course will give an introduction to data analysis concepts including regression, clustering and classification of data. In addition, awareness will be raised for spatial privacy threats, and possible risks associated with uncontrolled publishing of location based data. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

GGS 300: Quantitative Methods for Geographical Analysis. 3 credits.
Comprehensive introduction to quantitative methods in spatial analysis, with emphasis on solving geographical research problems. Topics include nature of spatial data; collection of spatial data; preparation of spatial data for mapping, geographic information systems, and statistical analysis; descriptive spatial statistics; areal sampling theory and methods; probability theory and distributions; hypothesis testing; correlation and regression; and areal and point pattern spatial statistics. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Specialized Designation: Scholarly Inquiry.

Recommended Prerequisite: 30 credits, including GGS 102 and 103 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 301: Political Geography. 3 credits.
Distribution and effects of power on landscape, particularly on national and global scales. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Recommended Prerequisite: 30 credits

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 302: Global Environmental Hazards. 3 credits.
Introduces applications of observational and modeling techniques to natural hazards and the threat they pose to the world, as well as a general introduction to global climate change and its effect on regional and local scales. Examples include topics of interest to different countries and regions of the world, such as earthquakes, sand and dust storms, slope failures, volcanoes, land slides, droughts and desertification, floods, hurricanes and typhoons, severe weather, wild fires (U.S., Indonesia, Africa, S. America), sea-level rise, and tsunamis. Covers Earth system science topics related to the above hazards and their coupling with anthropogenic hazards as well as how societies respond to natural disasters and mitigation. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: 30 hours and undergraduate status

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 303: Geography of Resource Conservation. 3 credits.
Provides analysis of world resources distribution, conservation, and preservation; and problems resulting from their natural occurrence and utilization. Uses knowledge from physical and social sciences to develop complex and sophisticated understanding of issues surrounding natural resource exploitation and management, conservation, and preservation. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Mason Core: Encore: Sustainability, Synthesis (p. 142)

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: 30 credits, and completion or concurrent enrollment in all other required Mason Core courses.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 304: Population Geography. 3 credits.
Spatial distribution of population, its causes and effects, and changing patterns resulting from population mobility. Emphasizes spatial characteristics of variables such as age, sex, race, education, and income. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Mason Core: Encore: Sustainability, Synthesis (p. 142)

Specialized Designation: Green Leaf Related Course
**Recommended Prerequisite:** 30 credits and completion of or concurrent enrollment in all Mason Core requirements.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 305: Economic Geography.** 3 credits.
Analyzes pattern of distribution of world economic activity, spatial economics behind this pattern, and influence of distribution on other spatial systems. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** 30 credits

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 306: Urban Geography.** 3 credits.

**Recommended Prerequisite:** 30 credits

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 307: Sustainable Development.** 3 credits.
Explores the concepts, applications, and tools for analysis and decision making in support of environmentally sustainable development. Case studies and problem-solving exercises will be used to stimulate learning and provide practical experience in addressing sustainable development issues. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** 60 hours; GGS 122 and GGS 302, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 308: Field Mapping Techniques.** 3 credits.
Basic techniques for collecting and recording spatial field data, including topographic maps, compass, transit, alidade, and geographic positioning systems. Includes field work. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** MATH 105, GGS 102 or GEOL 101, and 30 credits.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 309: Meteorology and Climate.** 3 credits.
Elements of meteorology; analysis of world distribution of meteorological controls as bases of regional climatic variations. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** GGS 102, 121, or equivalent, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 310: Introduction to Digital Cartography.** 3 credits.
Study and creation of maps. Fundamental mapping principles (projection, scale, generalization, symbolization) and applied computer-based cartographic production. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 311: Introduction to Geographic Information Systems.** 3 credits.
Fundamental concepts and theories for appropriate use of geographic information systems (GIS). Discusses basic GIS functionality and applications in various fields. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Specialized Designation:** Green Leaf Related Course

**Recommended Prerequisite:** 30 hours; and GGS 121, MATH 113, PHYS 243-244, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 312: Physical Climatology.** 3 credits.

**Specialized Designation:** Green Leaf Related Course

**Recommended Prerequisite:** 30 hours; and GGS 121, MATH 113, PHYS 243-244, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 314: Severe and Extreme Weather.** 3 credits.
Behavior of weather events ranging from small scale (e.g., thunderstorms and tornadoes) to mesoscale (e.g., fronts and hurricanes). Introduces the dynamical and physical processes, atmospheric boundary layer processes, and coupling between different spatial scales that create and shape severe and localized weather events. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts. Equivalent to CLIM 314.

**Specialized Designation:** Green Leaf Related Course
Recommended Prerequisite: MATH 113 or equivalent; CLIM/PHYS 111/112 or EOS 121 or GGS 121.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 315: Geography of the United States. 3 credits.
Diversity of US physical and cultural landscapes. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Recommended Prerequisite: 6 credits of geography or American Studies, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 316: Geography of Latin America. 3 credits.
Regional survey of physical resources, populations, cultural characteristics, and economic activities in Latin America. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Specialized Designation: Non-Western Culture

Recommended Prerequisite: 6 credits of geography or Latin American Studies, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 317: Geography of China. 3 credits.
Survey the physical, resources, environmental and population characteristics of China, and its urban, economic, and transportation systems development from a geographical perspective. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 319: Air Pollution. 3 credits.
Description of major types of air pollution and introduction to how their characteristics are influenced by interaction with the atmosphere. Topics include sources and distribution of pollution from local to global scales, effects of radiation and wind on pollution, modeling of plume dispersion and pollution effects on climate. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: CLIM 111 or GGS 121.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 320: Geography of Europe. 3 credits.
Environmental, economic, social, and political factors influencing regional structure of Europe. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Recommended Prerequisite: 6 credits of Geography or European Studies, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 321: Biogeography. 3 credits.
A survey of the relationship between distribution of plants and animals on the earth surface and the physical geography and environmental characteristics. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts. Equivalent to BIOL 374.

Recommended Prerequisite: GGS 122 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 322: Issues in Global Change. 3 credits.
Provides the basis for evaluating existing and emerging issues in the environmental sciences at the regional and global scale, using interdisciplinary scientific principles. Combines activities designed to provide an understanding of the following: first principles underlying regional/global issues in the environmental sciences, with attention to links among the disciplines of atmospheric sciences, biology, ecology, hydrology, oceanography, geology, human health, toxicology, and mathematical modeling; concepts of systems control, feedbacks, modeling, and hierarchical scales (spatial and temporal); role of retrospective analyses in developing a scientifically sound basis for evaluation and analysis; and studies of specific issues of interest on a regional to global scale. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 6 credits.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: GGS 121, GGS 122, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 325: Geography of North Africa and the Middle East. 3 credits.
Environmental, economic, and social factors of differentiation of regional structure and distribution of resources in North African and Middle Eastern countries. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Specialized Designation: Non-Western Culture

Recommended Prerequisite: 6 credits of Geography or courses related to Middle East, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
GGS 330: Geography of the Soviet Succession States. 3 credits.
Analyzes geographic factors involved in history, economic development, and geopolitical situation of the former Soviet Union. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Specialized Designation: Non-Western Culture

Recommended Prerequisite: 6 credits of geography or Russian studies, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 333: Issues in Regional Geography. 3 credits.
Geographical study of particular region or relevant regional issue. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 30 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 334: Health Geography. 3 credits.
Spatial approaches to the study of health and disease. Topics include disease ecology and diffusion, and geographic perspectives on improving health care delivery. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Recommended Prerequisite: Course in statistics.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 340: Health Geography. 3 credits.
Spatial approaches to the study of health and disease. Topics include disease ecology and diffusion, and geographic perspectives on improving health care delivery. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Recommended Prerequisite: IT 103, STAT 250, or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 344: Data Analysis and Global Change Detection Techniques. 3 credits.
Introduces basic time series methods, especially those used in detecting trends and randomness in time series data. Various data related to global changes on different temporal and spatial scales will be identified, and the relevant analysis methods will be used to those data so that students can detect or confirm changing trends or lack of them in data. Other topics such as data formats, data visualization, and data mining may also be included based on the background of the student body. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Recommended Prerequisite: IT 103, STAT 250, or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 354: Data Analysis and Global Change Detection Techniques. 3 credits.
Introduces basic time series methods, especially those used in detecting trends and randomness in time series data. Various data related to global changes on different temporal and spatial scales will be identified, and the relevant analysis methods will be used to those data so that students can detect or confirm changing trends or lack of them in data. Other topics such as data formats, data visualization, and data mining may also be included based on the background of the student body. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

Recommended Prerequisite: IT 103, STAT 250, or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GGS 357: Urban Planning. 3 credits.
Reviews spatial, policy, and administration principles that guide urban planning activities in the United States. Outlines differences between theory and practice and provides tools, methods, and perspectives commonly incorporated into practice of urban planning and policy analysis. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts. Equivalent to GOVT 357.

Recommended Prerequisite: 30 credits
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

**GGS 400: Colloquium in Geoinformation Science.** 1 credit.
Presentations in specific research areas of Geography and Geoinformation Science by faculty and staff, Mason faculty in related programs, and professional visitors. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** 60 credits and GGS 102 or 103, or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 410: Introduction to Hyperspectral Imaging.** 3 credits.
Introduction to quantitative measurements by remote-sensing methods covering quantitative spectroscopy, spectral and thermal signatures, atmospheric physics, and the electromagnetic spectrum. Emphasis on the scientific principles involved and the transition of the technology to real-world applications. The requisite materials to begin to understand hyperspectral imaging (HSI) technology and its many civil and military applications are presented. Covers necessary mathematics used in the analysis of n-dimensional data. Topics include hyperspectral concepts, data collection systems, data processing techniques, case studies, and U.S. national policy issues. Data processing techniques include N-dimensional space, scatterplots, spectral angle mapping, spectral mixture analysis, spectral matching, and other techniques. Applications and case studies include environmental, medical, agricultural, and military. Includes ground, airborne, and spaceborne hyperspectral systems. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** PHYS 243-244, 245-246, MATH 113 and 114, GGS 353, GGS 416 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 411: Advanced Digital Cartography.** 3 credits.
This advanced course in cartography focuses on thematic map design. The objective is to produce a cartographic portfolio of well-designed, professional grade maps. Theoretical concepts and principles will be introduced using practical examples and written assignments. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** GGS 311.

**Registration Restrictions:**
Required Prerequisite: GGS 310C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 412: Air Photography Interpretation.** 3 credits.
Methods and techniques of interpreting and using information contained in aerial photography, including applications to various aspects of physical and cultural landscape. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** 60 credits and GGS 102 or 103, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 415: Seminar in Geography.** 3 credits.
Students produce, present original research papers. Notes: Capstone seminar for geography majors integrating previous course work into disciplinary framework. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** GGS 300 and 310

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 416: Satellite Image Analysis.** 3 credits.
Examines methods and techniques of interpreting and using information obtained by non-photographic remote sensing systems, with particular emphasis on space-borne platforms. Includes analysis of imagery for both physical and cultural environments. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** 60 credits and GGS 412, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 456: Introduction to Atmospheric Radiation.** 3 credits.
Helps students learn about the fundamental aspects of atmospheric radiation. The goal is to understand their essential roles in advanced remote sensing, atmospheric sciences and global and environmental change. It will provide a foundation for and will be beneficial to students in taking advanced courses in those areas. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts. Equivalent to CLIM 456.

**Recommended Prerequisite:** GGS 353/GGS 309 and a course in physics, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 462: Web Mapping.** 3 credits.
Managing geospatial data is at the core of an emerging Billion-Dollar industry. This course will provide the students with the knowledge to manage and query geospatial data using relational database management systems and how to build Javascript-based Web mapping applications on top of a database to communicate and interact with the data. Students who take GGS 462 cannot receive credit for GGS 692.
Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** GGS 311.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 463: RS: Applied Geographic Information Systems.** 3 credits.
Selected applications in geographic information systems (GIS). Topics include automated data capturing and processing, spatial data models and structure including object-oriented approach, advanced spatial analytical techniques including raster modeling and network analysis, programming, and algorithm development in GIS. Major purpose of course is to extend fundamental theories and concepts in GIS so students are able to conduct research with and on GIS. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Specialized Designation:** Research/Scholarship Intensive

**Registration Restrictions:**
Required Prerequisites: (GGS 300C, L300 or 300T) and (GGS 311C, 311T or L311).
\( ^C \) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 470: Special Topics in Geographic Techniques.** 3 credits.
Content varies in the subject of Geographic Techniques. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** GGS 110.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 480: GGS Internship.** 1-3 credits.
Approved study programs with specific employers. Notes: Credit determined by department. Contact department one semester before enrollment. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Open only to authorized GGS majors with 90 credits and GPA of 2.50 or higher in GGS courses.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 490: Practicum in Geographical Applications.** 1-3 credits.
Application of geographical research tools and techniques in conjunction with faculty instruction and research. Individualized sections taught by arrangement with full-time faculty. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Authorized GGS majors with 90 credits.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 495:** GGS Internship. 3 credits.
Applications of research tools and techniques on specific GGS topics, in conjunction with faculty instruction and research. Individualized sections taught by arrangement with full-time faculty. Offered by Geography/Geoinformation Sci (p. 715). Limited to three attempts.

**Recommended Prerequisite:** 90 credit hours, authorized major.

**Schedule Type:** Research

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GGS 499: GGS Independent Study.** 1-3 credits.
Individual study of selected area of geography. Notes: Requires directed research paper. May be repeated with permission of the department. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Open only to authorized GGS majors with 90 credits and GPA of 2.50 or higher.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**GGS 501: Geography and Geoinformation Science Distance Education Orientation.** 1 credit.
Describes study structure and basic expectations (In terms of time commitment, expectations, technical issues and communication) for distance education courses in the Geography and Geoinformation Science department. Notes: The course is self-paced, enabling students to proceed at their own speed. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**GGS 505: Transportation Geography.** 3 credits.
Structure, principles, location, and development of world transportation. Critical role of transportation in moving people, goods, and ideas at international, national, regional, and urban levels. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** 6 credits of geography

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 507: Sustainable Development. 3 credits.
Sustainability lies at the intersection of the environment, society and economics. This course explores the concepts, applications, and tools for analysis and decision making in support of environmentally sustainable, socially responsible and economically prosperous development. Case studies and problem-solving exercises will stimulate learning and provide practical experience in addressing sustainable development issues. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 520: Geography for Teachers. 3 credits.
Emphasizes problems and techniques in teaching geography; and current developments in research, methodology, and philosophy in the discipline. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 524: Introduction to Environmental and Resource Economics. 3 credits.

Recommended Prerequisite: Basic algebra skills.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 525: Economics of Human/Environment Interactions. 3 credits.
Advanced topics in environmental, natural resource, and ecological economics for noneconomist. Emphasizes sustainability, intergenerational equity, and economic-ecological feedbacks. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit. Equivalent to ECON 895, EVPP 525.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: EVPP 524/GGS 524 or equivalent

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 531: Land-Use Modeling Techniques and Applications. 3 credits.
Survey of literature on spatially explicit empirical models of land-use change. Hands-on experience developing and running simple models. Techniques covered include statistical models, mathematical programming models, cellular automata, agent-based models, and integrated models. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit. Equivalent to EVPP 531.

Recommended Prerequisite: GGS 550, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 533: Issues in Regional Geography. 1-6 credits.
Geographical study of particular region or relevant regional issue. Notes: Content varies. May be repeated with permission of the department.
Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 540: Health Geography.** 3 credits.
Spatial approaches to study of health and disease. Topics include disease ecology and diffusion, and geographic perspectives on improving health care delivery. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** Course in statistics.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 550: Geospatial Science Fundamentals.** 3 credits.
Introduces geospatial sciences, emphasizing concepts and theories of cartography, remote sensing, air photo interpretation, Global Positioning Systems, spatial data structures, and geographic information systems. Lectures accompanied by hands-on exercises. Notes: Only available for students without previous course work in cartography. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 551: Thematic Cartography.** 3 credits.
Analyzes nature of perceptual organization and visual systems in thematic map communication portrayal, graphic handling, and data analysis. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 310 or 550

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 553: Geographic Information Systems.** 3 credits.
Sources of digital geospatial data, and methods of input, storage, display, and processing of spatial data for geographic analysis using GIS. Lectures, hands-on exercises familiarize students with current technology. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 550 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 554: History of Cartography.** 3 credits.
History of cartographic portrayal of Earth from ancient times through 19th century, emphasizing interrelation of human culture, technological development, and geographical knowledge as reflected in maps. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 560: Quantitative Methods.** 3 credits.
Survey of quantitative methods commonly used in geographic research. Emphasizes spatial analysis techniques. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.
Recommended Prerequisite: Previous course work in statistics, or GGS 310 or 550.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 562: Photogrammetry. 3 credits.
Treatment of photogrammetric problems, including least squares adjustments, image coordination refinements, collinearity equation, resection, relative orientation, and analytic aerotriangulation. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: GGS 412, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 563: Advanced Geographic Information Systems. 3 credits.
Discusses advanced GIS concepts including spatial data structure, spatial analysis, programming data fusion, Internet components, and spatial database management. Hands-on activities demonstrate concepts and specific applications in both cultural and physical geography. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: GGS 553 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 579: Remote Sensing. 3 credits.
Examines use of various types and combinations of electromagnetic energy to obtain spatial information. Concentrates on nonphotographic and spaceborne remote sensing platforms and sensors. Examines essential operational parameters for existing and future systems and strategies for visual extraction of features. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: GGS 412, or GGS 550, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 581: World Food and Population. 3 credits.
Topics include maldistribution of population, regional disparities in growth rates and income distribution, food production, and world hunger. Discusses population policies, with emphasis on Third World countries. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 590: Selected Topics in Geography. 1-3 credits.
Analyzes topics of immediate interest. Notes: Content varies. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

GGS 605: Systematic Applications of GIS. 3 credits.
Provides those working with spatially referenced data the technical skills to use GIS to conduct spatial analyses on socioeconomic phenomena related to labor, retail, and real estate markets. Introduces and emphasizes the development of technical and methodological
skills to understand the potential and the pitfalls of using GIS for spatial analyses of socioeconomic phenomena. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the term.

**Recommended Prerequisite:** GGS 553

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 631: Spatial Agent-Based Models of Human-Environment Interactions.** 3 credits.
Discusses key challenges in spatial modeling of human-environment interactions. Reviews agent-based modeling applications in urban and rural interactions, agriculture, forestry, and other areas. Hands-on development of simple ABM models and investigation of linkages between GIS and ABM. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit. Equivalent to EVPP 631.

**Recommended Prerequisite:** GGS 531 or CSS 600, or permission or instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 644: Fundamentals and Interpretation of Imaging Radar.** 3 credits.
Provides understanding of components, functionality, and use of radar remote sensing for acquiring spatial information. Concentrates on operational systems. Includes hands-on assignments. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 579, or other basic course in remote sensing.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 650: Introduction to GIS Algorithms and Programming.** 3 credits.
Introduction to programming methods and their application to Geographic Information Systems, including the fundamentals of object-oriented programming and GIS-specific data structures and algorithms. Employers an object-oriented language such as Visual Basic.Net, and existing freeware and commercial GIS libraries. Topics covered include variables, arrays, control structures, objects and classes, raster and vector data structures, spatial algorithms, and spatial indexing methods. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 553 or equivalent introductory GIS course, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 653: Geographic Information Analysis.** 3 credits.
Explores existing and potential capabilities of geographic information systems in conducting spatial analysis and modeling. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 553 and 560

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 655: Map Design.** 3 credits.
Advanced examination of principles of map design, including discussions of map design research. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 310 or 550.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 656: The Hydrosphere. 3 credits.
Covers components and transfer processes in hydrosphere, which consists of aqueous envelope of Earth including oceans, lakes, rivers, snow, ice, glaciers, soil moisture, ground water, and atmospheric water vapor. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit. Equivalent to EVPP 652.

Recommended Prerequisite: Two semesters of calculus, partial differential equation recommended; or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 657: The Lithosphere. 3 credits.
Global-scale overview of lithosphere, the solid nonliving Earth, its materials, cycles, plate tectonic and geomorphic processes; and history, including interactions with and history of hydrosphere, atmosphere and biosphere, and methods of analysis. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit. Equivalent to GEOL 601.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 658: Terrain Mapping. 3 credits.
Covers fundamental methods of digitally representing terrain data, major technologies, and programs for generating terrain data; methods for quantifying terrain error and assessing terrain data quality; and a variety of applications. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: GGS 553 or equivalent, or permission or instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 660: Automated Cartography. 3 credits.
Survey of algorithms and techniques to generalize information on maps and in geographic information systems. Covers simplified representation of geographic objects, surfaces, and thematic information. Includes GIS programming component. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: GGS 650 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 661: Map Projections and Coordinate Systems. 3 credits.
Covers development of various map projections and coordinate systems, property analysis, distortions, and applications. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: GGS 310 or 550

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GGS 664: Spatial Data Structures. 3 credits.
Studies spatial data structures and their application in digital cartography, geographic information systems, and image-processing systems. Examines raster and vector data structures, and attribution schemes and topological models. Includes data transformation, information loss, data quality, and the role of metadata. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: B or better in GGS 560.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 670: Introduction to Atmosphere and Weather.** 3 credits.  
Applies climatic concepts to natural and human-modified environments, and analyzes climatic change. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 671: Algorithms and Modeling in GIS.** 3 credits.  
Examines several fundamental GIS algorithms based upon computational geometry and computer graphics. Also discusses issues in modeling features of different dimensions and surfaces in GIS. Significant programming expected. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** B or better of GGS 560.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 674: Environmental Impact Analysis.** 3 credits.  
Scientific and administrative processes involved in environmental impact analysis and environmental impact statements. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Recommended Prerequisite:** GGS 416 or GGS 579 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 680: Earth Image Processing.** 3 credits.  
Focuses on how geoinformation technologies, including GIS, RS, and GPS, and spatial analytical techniques can be integrated to address various situations in environmental risk assessment, monitoring, and planning. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 416 or GGS 579 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 681: Social Media Analysis.** 3 credits.  
The course covers theory, principles, and analytical techniques in geospatial analysis of social media, including data collection, location-based and cyberspace social network analysis, content analysis, and visualizations of such data. Examples of applications in various domains are used to demonstrate and explore the use of social media analysis. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 550 or GGS 553 or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 684: Selected Topics in Geospatial Intelligence.** 3 credits.
Covers topics relevant to geospatial intelligence, especially addressing emerging trends, focused intelligence applications, and relevant technological advances, not covered by existing courses. Sample topics addressed in this course include geosensor networks, landmine detection using remote sensing techniques, the use of unmanned aerial vehicles in geospatial intelligence, and the use of virtual reality techniques for geospatial information modeling and analyst training. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** Students must be admitted to the Geospatial Intelligence Certificate program or have permission from the program's academic director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 685: Capstone Course in Geoinformatics.** 3 credits.
This course is intended to provide a capstone experience for graduate students by synthesizing knowledge and experience that they acquired in earlier coursework to address a complex geospatial intelligence problem. The course requires analytical, collaborative, and communication skills. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** 12 credits in the geospatial intelligence certificate program or permission of program coordinator.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 689: Seminar in Geographic Thought and Methodology.** 3 credits.
Includes historical development of geographic thought and current philosophy of geography; rationale for various subfields; and geographic research techniques and methods of analysis. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 560

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 692: Web-based Geographic Information Systems.** 3 credits.
Management of geospatial data by means of a database system. Communication of geospatial data over the Internet using browser-based interfaces. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** GGS 550 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 695: Geography and Geoinformation Science Graduate Internship.** 1-6 credits.
Approved study programs with specific employers. Students and employer supervisors must demonstrate relevancy of study program to degree requirements. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**GGS 698: Directed Readings and Research.** 1-3 credits.
Reading and research on specific topic under direction of faculty member.
Notes: Written report required; oral exam and report may be required.
Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**GGS 700: Comprehensive Exam.** 1 credit.
Preparation and completion for the comprehensive exam within the GGS department. Instructor should be the chair of the examination committee. The exam committee will specify exam content. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**GGS 704: Spatial Demography.** 3 credits.
Intermediate-level, population geography course discussing demographic concepts and spatial dimensions of population. Features various indices, measures, and models commonly used in human geography. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** Prior courses in quantitative methods and GIS recommended.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 721: Biogeography.** 3 credits.
Provides broad understanding of how physical geography and environment influence spatial and temporal distribution of plants and animals on Earth’s surface. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** Courses in ecology, chemistry, and geology.

**Registration Restrictions:**

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 740: Hyperspectral Imaging Systems.** 3 credits.
Provides requisite materials to understand hyperspectral imaging technology and its many civilian and military applications. Emphasizes scientific principles involved and technology application to real-world imaging systems. Topics include hyperspectral concepts and system tradeoffs; data collection systems; calibration techniques; data processing techniques and software; classification methods; and case studies. Data processing techniques include N-dimensional space, scatterplots, spectral angle mapping, spectral mixture analysis, spectral matching, and mixture tuned matched filtering. Discusses ground, airborne, and spaceborne hyperspectral remote sensing systems. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Recommended Prerequisite:** CSI 660 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 754: Earth Science Data and Advanced Data Analysis.** 3 credits.
Covers accessing and applying Earth observations and remote-sensing data for Earth system science research and applications. Major topics are data formats, analysis and visualization tools, advanced data analysis methods, and data applications. Also covers combining innovative information technology techniques and Earth science data to set up online data centers for accessing data through the web. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit. Equivalent to CSI 754.

**Recommended Prerequisite:** GGS 579 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 756: Physical Principles of Remote Sensing.** 3 credits.
Emphasizes fundamental physical and mathematical principles of remote sensing. Also provides overview of the current Earth Observation System as well as the National Polar-Orbiting Operational Environmental Satellite Systems (NPOESS), and NPOESS Preparatory Project missions. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.
Recommended Prerequisite: GGS 753 or permission of instructor.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: 
This course is graded on the Graduate Regular scale. (p. 84)

GGS 759: Topics in Earth Systems Science. 1-6 credits. 
Covers selected topics in Earth systems and global changes not covered in fixed-content Earth systems and global changes courses. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: 
This course is graded on the Graduate Regular scale. (p. 84)

GGS 760: Advanced Topics in Remote Sensing. 3 credits. 
Content varies in the area of remote sensing. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: GGS 579 or GGS 680.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: 
This course is graded on the Graduate Regular scale. (p. 84)

GGS 772: Cloud Geographic Information Systems. 3 credits. 
Examines different aspects of science and technology in the context of distributed GIS. Includes general concepts, architecture, component design and development, and system integration as well as other advanced topics, including interoperability and agent-based GIS. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: Introductory course in GIS and some programming experience, or permission of instructor.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: 
This course is graded on the Graduate Regular scale. (p. 84)

GGS 777: Interoperability of Geographic Information Systems. 3 credits. 
Advanced course addressing theories, standards, and implementations of web-based interoperable geographic information systems for online data and information services. Reviews international standards, including OGC, and associated tools for interoperability. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: GGS 754 and GGS 553, or a course in GIS.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: 
This course is graded on the Graduate Regular scale. (p. 84)

GGS 787: Scientific Data Mining for Geoinformatics. 3 credits. 
Covers specialized data mining algorithms, geoscience data models, and data information systems. Emphasis on domain-specific data mining algorithms suitable for spatial data and spatio-temporal data with geoscience and geoinformatics applications. Introduces real geoscience data mining applications in detailed applications. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: Competency in programming at the level of CSI 601-607 or permission of instructor.

Registration Restrictions: 
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: 
This course is graded on the Graduate Regular scale. (p. 84)

GGS 791: Advanced Spatial Statistics. 3 credits. 
Advanced course focusing on analyzing georeferenced or spatial data represented as points or polygons. Addresses higher moments, point pattern analyses, and interpolations of points to surfaces. Includes spatial regression. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

Recommended Prerequisite: GGS 560 or STAT 535/554, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**GGS 792: Seminar in Earth Systems Science.** 2 credits.
Capstone experience. Seminars presented by faculty and students.
Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit. Equivalent to EVPP 792.

**Recommended Prerequisite:** 15 Graduate Credits including CSI 655, GGS 656, and GGS 657, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 795: Seminar in Regional Analysis.** 3 credits.
Analyzes and synthesizes physical and cultural elements of geography in selected region. Should be taken near end of master's degree program. Provides opportunity to apply selective knowledge gained in previous systematic courses to specific region. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 798: Research Project in Earth Systems Science.** 1-6 credits.
Reading project chosen and completed under guidance of graduate faculty member resulting in acceptable technical report. Notes: For students enrolled in Earth Systems Science master’s program. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to Earth Systems Science MS program, 12 graduate credits, and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 799: Thesis.** 1-6 credits.
Degree candidacy and departmental approval of thesis proposal. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Degree candidacy and departmental approval of thesis proposal.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**GGS 840: Hyperspectral Imaging Applications.** 3 credits.
Introduces advanced hyperspectral imaging and multisensor concepts with emphasis on real-world civilian and military applications. Topics include advanced hyperspectral concepts, multisystem tradeoffs, data collection and processing systems, imaging radar systems, laser systems, calibration techniques, data fusion, quantitative remote sensing techniques, data compression techniques, case studies, and U.S. national policy. Applications and case studies include environmental, homeland security, medical, military, disaster mitigation, agricultural, and transportation. Offered by Geography/Geoinformation Sci (p. 715). May not be repeated for credit. Equivalent to CSI 854.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 900: Geography and Geoinformation Science Colloquium.** 1 credit.
Presentations in specific research areas of Geography and Geoinformation sciences by faculty and staff, Mason faculty in related programs, and professional visitors. Notes: Maximum 3 credits may be applied to Earth systems and geoinformation sciences PhD. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**GGS 900: Geography and Geoinformation Science Colloquium.** 1 credit.
Presentations in specific research areas of Geography and Geoinformation sciences by faculty and staff, Mason faculty in related programs, and professional visitors. Notes: Maximum 3 credits may be applied to Earth systems and geoinformation sciences PhD. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GGS 998: Dissertation Proposal.** 1-12 credits.
Covers development of research proposal that forms basis for doctoral dissertation, under guidance of dissertation director and doctoral committee. Notes: May be repeated, but no more than 12 credits of GGS 998 may satisfy doctoral degree requirements. Offered by
Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** Doctoral student or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

GGS 999: Dissertation. 1-12 credits.
Doctoral dissertation research under direction of dissertation advisor. Notes: May be repeated, but no more than total 24 credits in GGS 998 and 999 may be applied to doctoral degree. Offered by Geography/Geoinformation Sci (p. 715). May be repeated within the degree for a maximum 24 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Geology (GEOL)**

**100 Level Courses**

**GEOL 101:** *Introductory Geology I.* 4 credits.
Covers Earth, processes that operate within Earth and on surface, and human interaction with Earth. Topics include minerals, earthquakes and seismology, isostasy, igneous processes and rocks, paleomagnetism and plate tectonics, weathering, mass movements, rivers and streams, groundwater, glaciers, and marine processes. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Mason Core:** Natural Science with Lab, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 102:** *Introductory Geology II.* 4 credits.
Earth processes in historical context. Topics include sedimentary rocks and principles, deformation and metamorphism, mountain building and plate tectonics, geologic time, fossils, and historical development of continents. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Mason Core:** Natural Science with Lab, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 302:** *Mineralogy.* 4 credits.
Crystallographic, optical, chemical, and physical properties of minerals. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Specialized Designation:** Discovery of Scholarship

**Recommended Prerequisite:** GEOL 101 and 102 with a grade of 2.0 or better and CHEM 211.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 303:** *Field Mapping Techniques.* 3 credits.
Basic techniques for collecting, recording, and plotting spatial field data including use of topographic maps, compasses, transit, alidade, and global positioning systems (GPS). Designated a Green Leaf Course. Notes: Includes field work. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Specialized Designation:** Green Leaf Related Course, Scholarly Inquiry

**Recommended Prerequisite:** 30 credits including MATH 105 or equivalent and GGS 102 or GEOL 102.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 304:** *Sedimentary Geology.* 4 credits.
Introduces sedimentation, sedimentary petrology, facies analysis, and stratigraphy. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** GEOL 101\(^c\), 102\(^c\) and 302\(^c\).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 305: Environmental Geology. 3 credits.**
Investigates geological principles directly relating to environmental hazards. Geological causes and effects of natural disasters such as earthquakes, tsunamis, volcanoes, floods and landslides; climate variability and change; prediction of, and planning for geological hazards and disasters and understanding their major societal impacts; and medical geology. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Specialized Designation:** Green Leaf Related Course, Writing Intensive in Major

**Recommended Prerequisite:** GEOL 101 and one of the following: GEOL 102, GEOL/BIOL 309, GGS 309.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 306: Soil Science. 3 credits.**
Composition, classification, physical properties, and origin of soils. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Specialized Designation:** Green Leaf Related Course, Scholarly Inquiry.

**Recommended Prerequisite:** GEOL 101 and CHEM 103 or 211.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 308: Igneous and Metamorphic Petrology. 4 credits.**

**Recommended Prerequisite:** MATH 105 or higher

**Registration Restrictions:**
Required Prerequisites: GEOL 101, 102, 302.
C Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 309: Introduction to Oceanography. 3 credits.**
Introduction to chemical, biological, and geological aspects of oceanic environment. May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to BIOL 309, EVPP 309.

**Recommended Prerequisite:** Two of the following lab sciences courses are required for a total of 8 credits: [GEOL 101 or 102], [EVPP 110 or 111 or 210], CHEM 211 and 213, [BIOL 103 or 213], [PHYS 160 and 161 or 243 and 244].

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 312: Invertebrate Paleontology. 4 credits.**
Classification, evolutionary trends, and distribution of common invertebrate fossils. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to BIOL 336.

**Recommended Prerequisite:** GEOL 101 and GEOL 102, or BIOL 103, 104, or BIOL 213, 303, 304.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 313: Hydrogeology. 3 credits.**

**Specialized Designation:** Green Leaf Related Course

**Recommended Prerequisite:** GEOL 101 or GGS 102, MATH 113 and CHEM 211.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 315: Topics in Geology II. 1-3 credits.**
Discusses particular topic in geology. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** GEOL 101 or GEOL 102 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 316: Computers in Geology. 3 credits.**
Uses of mainframe and microcomputers, with emphasis on geologic applications. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Recommended Prerequisite:** GEOL 101, 102, 302, one semester of mathematics, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GEOL 317: Geomorphology. 4 credits.**
Analyzes processes that occur at Earth's surface and resulting landforms. Labs stress recognition and evaluation of landforms using maps and aerial photographs, and methods of data collection used in study of surficial geology. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major
Recommended Prerequisite: Grade of 2.0 or better in GEOL 101 and 102, or 6 credits of GGS, including GGS 102; GGS 412 is strongly recommended.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 320: Geology of Earth Resources. 3 credits.
A survey of earth resources, including metallic and non-metallic ore deposits, mineral resources, precious gems, sand and gravel, water, and air. Designated a Green Leaf Course. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: GEOL 101, GEOL 102, GEOL 302. GEOL 305 strongly suggested.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 321: Geology of Energy Resources. 3 credits.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: GEOL 101 or GEOL 102, and completion of all Mason Core science requirements.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 325: Planetary Geology. 3 credits.
Covers the geology and geologic processes of the terrestrial planets, moons, and other small bodies in the solar system including dwarf planets, asteroids and comets. The emphasis is on understanding past and present surface geologic processes. Observation session at campus observatory may be required outside of class hours. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: GEOL 101 or GEOL 102, and completion of all Mason Core science requirements.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 326: Paleoenvironmental Geology. 3 credits.
This course explores the Earth's climate with the goal of providing a baseline for understanding present climate variability and future trends through increased knowledge of the physical, chemical, and biological processes that influence climate over the long-term. Designated a Green Leaf Course. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: GEOL 102 or BIOL 103 or EVPP 110.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 334: Vertebrate Paleontology. 4 credits.
Vertebrate Paleontology explores the evolution of vertebrates from the early Paleozoic to Recent. The course will cover the systematics, anatomy, paleogeography, and ecology of extinct vertebrates. Discussions will include fishes, early tetrapods & amniotes, dinosaurs, birds and mammals. Lab portion includes paleontology techniques, analysis, and study of fossil specimens and casts. A weekend field trip is included. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to BIOL 334.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: Any two courses from the following list: GEOL 101, GEOL 102, BIOL 103, BIOL 104, BIOL 213, BIOL 303 or the permission of the instructor.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 363: Coastal Morphology and Processes. 4 credits.
Studies global coastal geomorphology and processes with emphasis on U.S. Atlantic and Gulf coasts. Topics include plate tectonics, sea level changes, sediment supply, waves, tides, storm impacts, and human activities. Lecture and extended weekend field trips to mid-Atlantic coast. Designated a Green Leaf Course. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to EVPP 363.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: GEOL 309 or BIOL 309 or GEOL 317 or 9 credit hours in Geography including GGS 309.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 364: Marine Geology. 3 credits.
This course will present a global overview of the geologic origin and composition of the ocean seafloor, and an introduction to the basic principles of the geologic processes occurring in the marine environment. Primary topics include geologic, tectonic and sedimentary characteristics of the deep ocean basins and continental margins; transport and deposition of marine sediments; micropaleontology and paleoceanography; geochemistry and hydrothermal systems; and marine mineral resources. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Recommended Prerequisite: GEOL 101, GEOL 102, GEOL 302, and CHEM 211.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
GEOL 392: *Geology and Earth Science Seminar*. 1 credit.
Undergraduate experience that includes discussion of scientific articles and attending seminars presented by outside experts, faculty, or students. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 4 credits.

**Recommended Prerequisite:** 30 credit hours.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

#### GEOL 401: *Structural Geology*. 4 credits.
Igneous, sedimentary, and metamorphic rocks in folded, faulted, and metamorphosed terrains. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** ((GEOL 302C, 317C and 304C) or GEOL 308C) and ((MATH 110C and 111C) or MATH 113C).

*C Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### GEOL 402: *Geological Development of North America*. 3 credits.

**Recommended Prerequisite:** GEOL 101, 102, 302, 304, 308 and 401.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### GEOL 403: *Geochemistry*. 3 credits.
Includes stable isotope, crystal, water, and organic geochemistry; geochronology; and geochemistry of rocks. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Recommended Prerequisite:** GEOL 101 and 102, and CHEM 211.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### GEOL 404: *Geological Field Techniques*. 1-6 credits.
Mapping techniques involved in collecting geological field data. Notes: Includes field work. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisites:** GEOL 101C, 102C, 302C, 304C, 308C, 317C and 401C.

*C Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### GEOL 408: *Practicum for Geology Laboratories*. 1 credit.
Studies techniques to make geology lab effective component in geological education. Discusses developing testing materials, supplemented by experience operating geology course lab section. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Recommended Corequisite:** Open only to GEOL/ESS majors with 80 credit hours and permission of Chair.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### GEOL 409: *Practicum for Geology Laboratories*. 1 credit.
Studies techniques to make geology lab effective component in geological education. Discusses developing testing materials, supplemented by experience operating geology course lab section. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Recommended Prerequisite:** Open only to GEOL/ESS majors with 80 credit hours and permission of Chair.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### GEOL 410: *Research Proposal Preparation*. 1 credit.
Prepares students for research in GEOL 411. Includes literature research, initial data collection, and preparing research proposal. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

**Recommended Prerequisite:** Geology or Earth Science major with 90 credits, cumulative GPA of 2.80 or higher, and permission of the Geology undergraduate coordinator.

**Schedule Type:** Research

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### GEOL 411: *Geological Research*. 3 credits.

**Recommended Prerequisite:** GEOL 410.

**Schedule Type:** Research

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### GEOL 412: *Physical Oceanography*. 3 credits.
Course describes the global patterns of temperature, salinity, currents and waves in the world’s oceans, and how these patterns influence marine biota, climate, and human activity. Course introduces key concepts which explain physical features of the ocean ranging from microscopic turbulence to global circulation. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to CLIM 412.
Recommended Prerequisite: MATH 113 or MATH 115, and PHYS 160 or PHYS 243, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 417: Geophysics. 3 credits.
Basic principles of geophysics including gravity, magnetism, and seismic reflection and refraction. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to PHYS 417.

Recommended Prerequisite: GEOL 101, MATH 113, one year of PHYS or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 420: Earth Science and Policy. 3 credits.
Discusses Earth science issues that have policy implications. Course uses a broad definition of Earth science, from atmosphere to geosphere. Taught seminar-style, with emphasis on discussion, reading, writing, critical analysis, and student oral presentations. Notes: Course may include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Mason Core: Encore: Sustainability, Synthesis (p. 142)

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 18 credit hours in major or minor (geology, Earth science, ocean and estuarine science, or global and environmental change), and one of the following social science based courses: EVPP 361; ECON 103; ANTH 114; GGS 103; GLOA 101; GOVT 132 or 133; HIST 125 or 130; or SOCI 101, 102, or 120.

Recommended Corequisite: All other required Mason Core courses.

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 458: Chemical Oceanography. 3 credits.
The world's oceans, including a variety of closed basins and estuaries, comprise a complex and dynamic system of chemical processes that interact with biological, geological, physical, and atmospheric processes to play a significant role in defining the earth's fragile environment. This course will present an overview of the origin, occurrence, and distribution of the chemical components in sea water and an introduction to the basic principals of the chemical processes taking place in the marine environment. Designated a Green Leaf Course. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts. Equivalent to CHEM 458.

Recommended Prerequisite: CHEM 211 and CHEM 212, and CHEM 321 or GEOL 302.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GEOL 480: Internship. 1-3 credits.
Approved study programs with specific employers. Notes: Contact department one semester before enrollment. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). Limited to three attempts.

Recommended Corequisite: Open only to authorized majors with 90 credit.

Schedule Type: Internship

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

GEOL 500: Selected Topics in Modern Geology. 1-3 credits.
Topic designated in class schedule. Notes: Lecture, lab, field trip. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree.

Recommended Prerequisite: Baccalaureate degree in geology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

GEOL 501: Selected Topics in Modern Geology. 1-3 credits.
Topic designated in class schedule. Lecture, lab, field trip. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree.

Recommended Prerequisite: Baccalaureate degree in geology or Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

GEOL 503: Special Topics in Earth Science. 1-6 credits.
In-service course to strengthen and update knowledge of Earth science. Notes: May include field trips. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree.
Recommended Prerequisite: Employment or anticipated employment as an Earth Science teacher.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GEOL 506: Soil Science. 3 credits.
Explores the composition, classification, physical properties, and origin of soils. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit. Equivalent to EVPP 503.

Recommended Prerequisite: Previous lab-science courses in each of the following: geology and chemistry (8 credit hours); or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GEOL 513: Hydrogeology. 3 credits.

Recommended Prerequisite: Previous lab-science courses in each of the following: geology, calculus, and chemistry (12 credit hours); or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GEOL 521: Geology of Energy Resources. 3 credits.
Survey of global non-renewable and renewable energy resources. Topics include petroleum, natural gas, coal, nuclear, geothermal, solar, wind, and hydro power, and biofuels. Course discusses global production, usage, impacts and future prospects of these resources, and data capture, analysis and modeling of finite resources. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: GEOL 101 or GEOL 102, and completion of all Mason Core Natural Science requirements or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GEOL 525: Modeling Earth Signals and Systems. 3 credits.
Provides instruction on time series analysis customized for Earth signals and systems such as climate, Earth-space orientation, earthquakes, geomagnetism, river flow, tides and many other time dependent phenomena. Concepts including linear systems, filtering, spectrum estimation, harmonic analysis and hypothesis testing are applied to time series data sampled from natural processes to address a variety of scientific problems. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: MATH 114 and STAT 250 or equivalent or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GEOL 532: Paleoclimatology. 3 credits.
Explores the natural evolution of Earth's climate with the goal of providing a baseline for understanding present climate variability and future trends through increase knowledge of the physical, chemical, and biological processes that influence climate over the long-term. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: Previous lab-science courses in geology and/or atmospheric science and/or oceanography (12 credit hours); or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GEOL 534: Vertebrate Paleontology. 4 credits.
Explores the evolution of vertebrates from the early Paleozoic to Recent. Covers systematics, anatomy, paleogeography, and ecology of extinct vertebrates. Discussions include fishes, early tetrapods and amniotes,
dinosaurs, birds, and mammals. Lab portion includes paleontology techniques, analysis, and study of fossil specimens and casts. Notes: A weekend field trip is included. Students who have taken GEOL 334 as an undergraduate may not take 534 as a graduate student. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: Undergraduate degree in biology or geology or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

GEOL 535: Quantitative Stratigraphy. 3 credits.
Quantitative stratigraphy is a branch of geology that applies statistics to reconstruct the time sequence of geological events recorded in sedimentary strata. Methods of interpolation and error analysis used for defining stratigraphic boundaries and events, time scale estimation using integrated chronostratigraphy, and intercalibration are examined. Students receive advanced training in graphic correlation, constrained optimization, ranking and scaling, and dynamic programming. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: MATH 114 and STAT 250 or equivalent or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

GEOL 536: Paleontology Seminar. 1-2 credits.
Paleontology Seminar presents topical research in paleontology and paleobiology in a structured discussion among graduate students and paleontology faculty. A theme for the seminar is chosen each semester the course is offered, tailored to the interests of the students. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

GEOL 553: Field Mapping Techniques. 3 credits.
Explores basic techniques for collecting, recording, and plotting spatial field data, including topographic maps, compass, transit, alidade, and global positioning systems. Field work and field based research project. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit. Equivalent to EVPP 503.

Recommended Prerequisite: Previous courses in geometry or trigonometry or equivalent; and environmental science, geography, or geology or equivalent.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading: This course is graded on the Graduate Regular scale. (p. 84)

GEOL 563: Coastal Morphology and Processes. 4 credits.
Investigates global coastal geomorphology and processes, with emphasis on U.S. Atlantic and Gulf coasts. Topics include plate tectonics; sea-level changes; sediment supply; impacts of waves, tides, storms; and human activities. Lecture and extended weekend field trips to U.S. mid-Atlantic coast. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit. Equivalent to EVPP 563.

Recommended Prerequisite: Previous courses in geology, oceanography marine science, earth science, or physical geography; or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

GEOL 565: Paleoceanography. 3 credits.
Investigates ocean evolution through geologic time. Earth’s sediment archive provides proxy data on paleo-ocean chemistry, biology, geology, and physical properties. Class examines proxy reconstructions of oceanic conditions such as circulation, salinity, stratification, anoxia, and biogeochemistry. Discusses the history of ocean basins, with case studies from Precambrian to Holocene. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit.

Recommended Prerequisite: Previous course in oceanography or marine science and 16 credits of geology or earth science courses, or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**GEOL 601: The Lithosphere. 3 credits.**

Global-scale overview of lithosphere, solid non-living Earth, materials, cycles, plate tectonic and geomorphic processes; and history, including interactions with and history of hydrosphere, atmosphere and biosphere, and methods of analysis. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May not be repeated for credit. Equivalent to GGS 657.

**Recommended Prerequisite:** 15 Graduate Credits including GEOL 601 or equivalent, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GEOL 798: Master's Research Project in Earth Systems Science. 1-6 credits.**

Experimental, observational, literature-based, or theoretical research project chosen and completed under guidance of faculty member. Proposal required before enrollment. Comprehensive technical report acceptable to student's committee required for completion. Notes: No more than 6 credits of GEOL 798 may be applied to master's degree. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** 15 graduate credits, approved project or thesis proposal, and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**GEOL 799: Master's Thesis in Earth Systems Science. 1-6 credits.**

Experimental, observational, or theoretical research under major advisor's supervision that culminates in production of thesis. Thesis work should be potentially publishable. Offered by Atmospheric/Oceanic/Earth Sci (p. 620). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Approved thesis proposal by thesis committee, and permission of major advisor or instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### 100 Level Courses

**GEML 101: Elementary German I. 3 credits.**

Designed for students with no knowledge of German. Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Notes: Students may not receive credit for GERM 101 and GERM 105 or 110. Offered by Modern & Classical Languages (p. 424).

Limited to three attempts. Equivalent to GERM 110.

**Schedule Type:** Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 102: Elementary German II. 3 credits.
Continuation of GERM 101. Notes: Students may not receive credit for GERM 102 and GERM 105 or 110. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to GERM 110.

Recommended Prerequisite: GERM 101.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 110: Elementary German. 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Notes: Lab work required. Students may not receive credit for GERM 110 and GERM 101, 102, or 105. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to GERM 101, GERM 102.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

GERM 201: Intermediate German I. 3 credits.
Further development of skills in listening, speaking, reading, and writing. Notes: GERM 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: GERM 102, GERM 110, appropriate placement score, or permission of department.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 202: Intermediate German II. 3 credits.
Applies skills to reading, composition, and discussion. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: GERM 201.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

GERM 301: Culture and Civilization. 3 credits.
Covers development of German civilization from 18th century to present. Includes German cultural contributions to world civilization. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: 60 hours or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 310: Conversation and Composition. 3 credits.
Develops fluency in speaking and proficiency in writing German through discussion, reports, and compositions based on texts dealing with contemporary events and issues. Notes: Not for native speakers of German. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: GERM 202 or equivalent, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 312: Great Cities in Germany, Austria and Switzerland. 3 credits.
Examines famous cities, such as Berlin, Nuremberg, Vienna, and Weimar, in their cultural and historical context. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: GERM 202 or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 315: German for the Global World. 3 credits.
Explores the complexity of globalization in the context of Germany in relation to Europe and the greater world. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: GERM 202 or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 316: German for the Business World. 3 credits.
Introduces terminology and structural features of business German. Emphasizes acquiring vocabulary and developing facility in reading German business articles and correspondence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: GERM 202 or equivalent, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 318: Translation of Texts. 3 credits.
Introduces principles and techniques of translation. Translation of texts from the natural and social sciences, current events, and contemporary culture. Notes: Translations mainly from German into English. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: GERM 202 or equivalent, appropriate placement score, or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**GERM 325: Major Writers.** 3 credits.
Works of major German, Austrian, and Swiss writers in translation. Notes: Writers studied vary. May be repeated when topic is different with permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ENGL 101/ENGH 101 or equivalent or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GERM 329: Representations of the Holocaust.** 3 credits.
Examines the Holocaust through film, literature, autobiography and museum culture. Students critically discuss causes of the Holocaust in Nazi Germany and explore its impact on German, Austrian and American culture. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** GERM 202 or equivalent, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GERM 340: Topics in German Literature and Film.** 3 credits.
Topics in German literature and film from Goethe to the present. Offered by Modern & Classical Languages (p. 424). Limited to 6 credits.

**Recommended Prerequisite:** GERM 202 or equivalent, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GERM 375: Readings in Poetry (Topic Varies).** 3 credits.
Intensive reading of German poetry in its historical context. Studies genre characteristics and development. Types of poetry studied vary. May be repeated for credit when topic is different, with permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** GERM 202 or equivalent, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GERM 370: German Through the Arts.** 3 credits.
Focuses on advanced-level language development through the investigation of German arts (film, music, theater, paintings, etc.) in their historical and cultural contexts. Oral and written competence achieved by means of integrated vocabulary and grammar study in content-based instruction. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** GERM 202 or equivalent, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GERM 375: Readings in Drama.** 3 credits.
Intensive reading of German dramas in their historical context. Study of genre characteristics and development, including performance aspects. Genre varies; may be historical drama, radio play, or epic theater. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** GERM 202 or equivalent, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**GERM 415: Advanced Grammar and Style.** 3 credits.
Studies syntax, idiomatic features, and levels of style. Extensive practice in different types of written expression. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** 15 hours of GERM or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GERM 418: Advanced Composition.** 3 credits.
Develops proficiency in writing German through intensive practice in preparing guided and original compositions. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** Completion of 15 hours of GERM or permission of instructor.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)
GERM 442: *The Age of Goethe.* 3 credits.
Major works of Enlightenment, Sturm und Drang, Classicism, and early Romanticism. Emphasizes drama and poetry by Goethe and Schiller, with additional works by Lessing, Kleist, and other important writers of the era. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** 15 hours of GERM or Permission of Instructor. Must have satisfactorily completed GERM 440 or 441.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 444: *The Literature of Romanticism.* 3 credits.
German Romantic poetry and prose. Background and some theory included. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** 15 hours of GERM or Permission of Instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Literature of Naturalism, Impressionism, and Expressionism in Germany, Austria, and Switzerland. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Literary trends since 1925 in Germany, Austria, and Switzerland. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

GERM 480: *Special Topics.* 3 credits.
Special topics on language, literature, or culture by theme, approach, or era. Notes: May be repeated for credit with permission of department. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** 15 hours of GERM or permission of instructor

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Global Affairs (GLOA)

**100 Level Courses**

GLOA 101: *Introduction to Global Affairs.* 3 credits.
Surveys wide range of global topics: previous periods of globalization, international organizations and law, transnational corporations and global economy, immigration and refugees, world environmental concerns, world culture, war and peace, paradoxical presence of nationalism and fundamentalism in global world, and antiglobalization movement. Offered by Global Affairs. Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

GLOA 305: *Global Affairs College-to-Career.* 1 credit.
Focuses on career choices and effective self-presentation for soon-to-be graduating students with majors in Global Affairs. Explores how skills typically learned in humanities majors can be leveraged for a successful transition to post-graduation employment. Offered by Global Affairs. Limited to three attempts. Equivalent to UNIV 420.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

GLOA 400: *Global Affairs Capstone.* 3 credits.
Students draw from interdisciplinary core and concentration coursework in order to synthesize, compare and consolidate the various approaches and theories explored throughout the major through a focus on a pressing global issue. Additionally, course is designed to further develop research, writing, presentation, and organizational skills. Offered by Global Affairs. May be repeated within the term for a maximum 6 credits.

**Mason Core:** Capstone (p. 142)

**Recommended Prerequisite:** Completion of GLOA 101 or SOCI 120 and 18 credits in major.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

GLOA 450: *Topics in Global Affairs.* 1-3 credits.
Selected topics in global affairs. Content varies. Notes: May be repeated for credit when topic is different. Offered by Global Affairs. May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** GLOA 101 or SOCI 120.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

GLOA 480: *Study Abroad.* 1-6 credits.
Study abroad under supervision of Mason faculty. Course topics, content, and locations vary. Notes: May be repeated with permission of
department. Offered by Global Affairs. May be repeated within the term for a maximum 12 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GLOA 490: Independent Study in Global Affairs. 1-6 credits.
Reading or research on specific topic related to globalization, under direction of faculty member. Notes: At least one written paper required. Course may involve combination of reading assignments, tutorials, presentations, or off-campus activities. Offered by Global Affairs. May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Global Affairs majors with 90 credits, GLOA 101, and permission of instructor.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GLOA 491: Honors Seminar in Global Affairs. 3 credits.
Emphasizes an interdisciplinary approach to the study of global affairs. Covers a variety of topics, including consideration of economic, political, and cultural forces at work in the complex interactions among global processes. Offered by Global Affairs. Limited to three attempts.

Recommended Prerequisite: Admission to Global Affairs honors in the major.

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GLOA 492: Honors Research Project in Global Affairs. 3 credits.
Honors-level research on specialized topic in Global Affairs culminating in substantial paper and oral presentation. Offered by Global Affairs. Limited to three attempts.

Recommended Prerequisite: Completion of GLOA 491 with minimum grade of B.

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GLOA 495: Global Experiential Learning. 1-18 credits.
On-the-job training in transnational or international fields through approved internship programs. Notes: Enrollment and credits controlled by Global Affairs Program. Contact Global Affairs Program one semester before planned enrollment. Offered by Global Affairs. May be repeated within the term.

Schedule Type: Internship

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GLOA 498: Global Politics Fellow. 0 credits.
The Global Politics Fellows program is a 15 credit academic program for selected students majoring in Global Affairs or Government and International Politics and Public Administration. This course indicates participation in the program. Offered by Global Affairs. May be repeated within the degree for a maximum 0 credits.

Recommended Prerequisite: Acceptance into Global Policy Fellows Program.

Registration Restrictions: Enrollment is limited to students with a major in Global Affairs.

Schedule Type: Lecture

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

500 Level Courses

GLOA 599: Issues in Global Affairs. 3 credits.
Studies current issues and debates in global affairs. Notes: May be repeated for credit when topic is different. Offered by Global Affairs. May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: Acceptance into Global Policy Fellows Program.

Registration Restrictions: Enrollment is limited to students with a major in Global Affairs.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

GLOA 600: Global Competencies. 3 credits.
Explores the nature of globalization. Students will understand the characteristics of the current global system; be familiar with key global issues and debates; have an advanced understanding of and appreciation for organizations, languages, cultures in many global contexts; and be better habituated to thinking across disciplinary lines. Offered by Global Affairs. May not be repeated for credit.

Recommended Prerequisite: Acceptance into Global Policy Fellows Program.

Registration Restrictions: Enrollment is limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

GLOA 605: Interdisciplinary Research Methods. 3 credits.
Designed to provide students with an overview of basic techniques in quantitative and qualitative methods with special attention to epistemological and ethical concerns in global studies research. Course includes a discussion of the theoretical assumptions that shape research questions and design, practical exercises in research techniques, and analysis of methodology in practice. Offered by Global Affairs. May not be repeated for credit.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GLOA 610: Economic Globalization and Development. 3 credits.
Focuses on the intersection of countries and firms in the arenas of international trade, investment and finance, as the lenses into understanding better today’s “global” economy: countries of differing levels of economic development and economic system structure, factors of monetary union and currency disequilibria, trade liberalization or protectionism, market entry, cross-border variables, risk and relations. Offered by Global Affairs. May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

GLOA 615: Case Studies in Globalization. 3 credits.
Introduces interdisciplinary, social theoretical approaches and themes useful to understanding today’s global issues and then applies them to a particular case study. Considers scholarly debates around globalization in the context of this case study. Offered by Global Affairs. May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

GLOA 620: Human Systems. 3 credits.
Examines the human dimensions relative to international educational systems and their relationship to basic education and higher education policy, research policy, science and technology, culture, language, social justice, equity, conflict and peace, human resources and national development. Offered by Global Affairs. May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

GLOA 690: Independent Study. 3 credits.
Reading or research on specific topic related to globalization, under directions of faculty member. Notes: At least one written paper required. Course may involve combination of reading assignments, tutorials, presentations, or off-campus activities. Offered by Global Affairs. May not be repeated for credit.

Recommended Prerequisite: 12 MA credits and permission of instructor.

Registration Restrictions:
Enrollment limited to students in the LA-MA-GLOA program.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

GLOA 710: Seminar Abroad. 3 credits.
Intensive program in a foreign setting focusing on a deep overview of the research specialization of the supervising faculty member. Required pre-departure component to set the intellectual, logistical and cultural terms of the abroad period. Locations vary from year to year. May be repeated with permission of program. Offered by Global Affairs. May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

GLOA 720: Capstone Research Seminar. 3 credits.
Provides students with the opportunity to engage in significant original research an analysis of a topic in global affairs. Topics vary from year to year. Offered by Global Affairs. May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Global and Community Health (GCH)

200 Level Courses

GCH 205: Global Health. 3 credits.
This course examines the biological and social aspects of major international health issues, especially in the areas of infectious disease, nutrition, and environmental health. Other topics include population groups with special risks, policies and programs designed to reduce health inequalities, and basic methods used to study global health. Offered by Global and Community Health (p. 246). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GCH 300: Introduction to Public Health. 3 credits.
Explores the principles and foundations of public health and its practice in the United States. Emphasizes the public health system's contributions to improving individual, community, and population health. Offered by Global and Community Health (p. 246). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

GCH 305: Introduction to OneHealth. 3 credits.
Introduces the transdisciplinary One Health approach of solving complex health issues by recognizing the interconnectedness of human health, animal health and environmental health. A One Health approach to health issues is important because the majority of diseases in humans are spread from animals thus successful public health interventions require the cooperation of human, animal, and environmental health communities. Offered by Global and Community Health (p. 246). Limited to three attempts.

Recommended Prerequisite: GCH 205 or EVPP 210 or BIOL 213

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 332: Health and Disease. 3 credits.
Introduces the etiology, control, and prevention of human disorders from a public health perspective. Focuses on health problems and potential prevention throughout the life span. Offered by Global and Community Health (p. 246). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GCH 335: Applied Health Statistics. 3 credits.
Emphasizes the statistical concepts and procedures used in applied public health practice and research. Students will learn to use SPSS to analyze, interpret, and present statistical findings. Offered by Global and Community Health (p. 246). Limited to three attempts.

Recommended Prerequisite: Any Mason Core quantitative reasoning course.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GCH 350: Health Promotion and Education. 3 credits.
Introduces the principles of health promotion and education, including history; philosophical and theoretical foundations; professional preparation, ethics, and responsibilities; and work settings. Assessment of health information/sources and the development of effective health promotion and education strategies for diverse populations are emphasized. Offered by Global and Community Health (p. 246). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
**GCH 360: Health and Environment.** 3 credits.
Examines principles and methods, risk factors, prevention and control, and policies related to the aspects of human health determined by biological, physical, and chemical factors in the environment at the local, regional, and global levels. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GCH 370: Sexuality and Human Behavior.** 3 credits.
Introduction to human sexual behavior with an emphasis on the interaction between psychological, social, and biological factors. Topics include sexual differentiation and development, sexually transmitted infections and HIV, sexual orientation, patterns of sexual behavior, and the sexual health of individuals, communities, and global populations. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GCH 376: Health Ethics, Leadership, and Advocacy.** 3 credits.
Examines legal and ethical issues in public health practice and the skills necessary for effective leadership. Includes personal and organizational ethics, management and leadership styles, and public health advocacy. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Recommended Prerequisite:** GCH 350.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GCH 380: Public Health Research Methods.** 3 credits.
Emphasizes the formation of public health research questions and selection of appropriate study designs to address them. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry.

**Registration Restrictions:**
**Required Prerequisites:** GCH 300 and 380.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**GCH 405: Global Health Interventions: History and Systems.** 3 credits.
Examines the history, development, and implementation of international health policies and programs, with an emphasis on maternal and child health, undernutrition, and infectious diseases. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Recommended Prerequisite:** GCH 205

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GCH 406: Global Health Interventions: Emerging Issues.** 3 credits.
Examines strategies for addressing emerging global health issues, with an emphasis on noncommunicable diseases, aging, mental health, and injuries. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Recommended Prerequisite:** GCH 205.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GCH 411: Health Program Planning and Evaluation.** 3 credits.
Addresses planning, implementation and evaluation of highly effective health programs. Emphasis is placed on using evidence-based approaches to program design and evaluation and working productively with communities. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Recommended Prerequisite:** GCH 310 and 380.
C Requires minimum grade of C.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Community Health, Global Health or Public Health.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GCH 412: Fundamentals of Epidemiology.** 3 credits.
Explores health research methods for measuring population health, designing and implementing observational and experimental studies, reading health science publications, and applying research findings to global and community health. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Recommended Prerequisite:** One of the following: GCH 335, STAT 250, BIOL 214, OM 210, PSYC 300, or SOCI 313.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Community Health, Global Health or Public Health.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GCH 426: Global Emerging Infectious Diseases.** 3 credits.
Explores emerging infectious diseases with an emphasis on prevention and control interventions at the local through global levels. Offered by Global and Community Health (p. 246). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
GCH 445: Social Determinants of Health. 3 credits.
Examine the social determinants of health and the application of this framework to social work and public health policy and practice interventions. Explore the many social justice factors that affect health and consider which community systems and social change approaches may decrease or eliminate health inequities. Offered by Global and Community Health (p. 246). Limited to three attempts. Equivalent to SOCW 445.

Recommended Prerequisite: 45 credits or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GCH 450: Culture, Sexuality and the Global AIDS Epidemic. 3 credits.
Examines how the cultural values and mores regarding sexuality shape HIV/AIDS social policy and how these values and mores facilitate and hinder prevention and care efforts. Also examines several sexuality-related topics that interface with culture (e.g., gender, the sex industry, homosexuality) and the effectiveness of prevention and care initiatives around such issues as condom use, blood donation restrictions, immigration laws, sex education, and HIV testing. Offered by Global and Community Health (p. 246). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GCH 465: Community Health Capstone. 3 credits.
Analyzes current public health issues, and policies and program used to address these issues. Integrates and applies skills and knowledge learned across the community health curriculum to develop a program that addresses a current public health issue. Develops professional skills necessary for the field of public health. Offered by Global and Community Health (p. 246). Limited to three attempts.

Mason Core: Capstone (p. 142)

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisite: GCH 380C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GCH 480: Health Maintenance and Health Aspects of Aging. 3 credits.
Studies physiological and psychological factors that influence health and have implications for preventive measures in disease and health disorders. Examines nutrition, nature of health problems, and methods of assessing physical and psychological needs. Offered by Global and Community Health (p. 246). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GCH 491: Study Abroad in Public Health. 0-6 credits.
Study abroad under supervision of George Mason University faculty. Course topics, content and locations vary. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GCH 494: Special Topics in Global and Community Health. 3 credits.
Selected topics analyzing specialized areas in global and community health. Notes: Content varies. Lecture, seminar, laboratory, workshops. Offered by Global and Community Health (p. 246). May be repeated within the term for a maximum 12 credits.

Schedule Type: Lecture

Recommended Prerequisite: GCH 300 and completion of 60 credit hours, or instructor's permission.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Recommended Prerequisite: GCH 497 with B or better.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

GCH 498: Global and Community Health Internship. 3,6 credits.
Provides advanced students with the opportunity to apply community health knowledge while working under the supervision of a community preceptor in a local health organization. Students submit an application to the GCH internship coordinator the semester prior to enrollment for review. Students who have demonstrated academic excellence will receive priority internship placement. Notes: A criminal background check and proof of vaccination status may be required of students prior to beginning an internship. This course provides experiential learning in a community health organization under the direction of a faculty advisor and a preceptor in the community health organization. Students are expected to understand the roles and functions of the community health organization and complete a project approved by the faculty advisor and the preceptor. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 6 credits.

Recommended Corequisite: GCH 497 with B or better.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

GCH 499: Independent Study in Global and Community Health. 1-6 credits.
Provides individual study of a particular problem area in global and community health research, theory development, or education under the
direction of faculty. Offered by Global and Community Health (p. 246). May be repeated within the term for a maximum 6 credits.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

GCH 500: Foundations of Public Health. 3 credits.
Focuses on foundational principles and practices of public health, including historical origins, professional competencies, ethics, core functions and essential services, determinants of health, cultural competence, and communication strategies for diverse populations. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 515: Lesbian, Gay, Bisexual, Transgender, and Queer Health. 3 credits.
Examines health status and health disparities among lesbian, gay, bisexual, transgender, and queer (LGBTQ) communities across the lifespan. Measurement and methodological considerations in LGBTQ health research, as well as health-related interventions targeting LGBTQ populations will be emphasized. Notes: Offered every other year. Upper level undergraduates interested in taking this course are encouraged to contact the instructor. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 535: Public Health Preparedness and Response. 3 credits.
Examines principles and practices of preparedness for and response to all-hazards, with a focus in the US and select global applications. Provides an overview of roles of public health workers and organizations in emergencies. Discusses significance of collaborating and coordinating with emergency management agencies and other stakeholders. Also reviews at-risk individuals, behavioral health, ethical, and legal issues during public health emergencies. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 543: Global Health. 3 credits.
Examines the major causes of morbidity, mortality, and disability in high, middle, and low income countries and the social, economic, and environmental factors that contribute to the global burden of disease. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 560: Environmental Health. 3 credits.
Examines principles and methods, risk factors, prevention and control, and policies related to the aspects of human health determined by biological, physical, and chemical factors in the environment at the local, regional, and global levels. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Specialized Designation: Green Leaf Related Course

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 565: Public Health Toxicology. 3 credits.
Focusses on the general mechanisms of toxicity and direct and indirect effects of major environmental and occupational agents. Considers the genetic, physiologic, and psychosocial factors that affect susceptibility to adverse health outcomes associated with environmental or occupational hazard exposure. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 571: HIV/AIDS: Concepts, Principles, and Interventions.** 3 credits. Overview of HIV disease, including retrospective and current concepts and analyses, global and societal effect, and cutting-edge research. Examines development of therapeutic tools and skills to educate, reduce risks, control infection, and affect care and healing of client, family, and community, and issues of increasing dilemma for health care professionals. Offered by Global and Community Health (p. 246). May not be repeated for credit. Equivalent to NURS 571.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 591: Study Abroad in Public Health.** 3 credits. Study abroad under supervision of George Mason University faculty. Course topics, content and locations vary. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 594: Special Topics in Global and Community Health.** 3 credits. Selected topics analyzing specialized areas in health care. Notes: Content varies. Lecture, seminar, laboratory, and workshops. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 6 credits. Equivalent to HAP 594.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**GCH 600: Health Promotion Methods.** 3 credits. Fundamental principles and practices of public health promotion and education, including historical origins; professional responsibilities; ethics; health behavior and learning theories; models for planning, implementing and evaluating programs; health literacy; public health advocacy; and the development, selection and implementation of effective instructional materials, methods, and interventions. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 601: Introduction to Biostatistics.** 3 credits. Applies selected biostatistics techniques to public health and health system management issues. Includes univariate and bivariate statistics, and regression analysis. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 604: Fundamentals of Epidemiology and Biostatistics.** 3 credits. Introduces methods for measuring population health and designing epidemiological studies, integrating statistical inference and interpretation of epidemiological data. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
GCH 607: Evidence-Based Public Health Practice. 3 credits. Examines strategies for implementing evidence-based approaches in public health practice by applying principles of scientific reasoning and the systematic use of data. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: GCH 604B or 712B.
B- Requires minimum grade of B-
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 611: Health Program Planning and Evaluation. 3 credits. Addresses the process of program planning, development, and fundamental evaluation principles, emphasizing health promotion programs. The focus is on development of clear and concise objectives leading to the design of effective primary, secondary, and tertiary prevention strategies. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: GCH 500B and 604B.
B- Requires minimum grade of B-
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 632: SAS for Health Research.** 3 credits.
Introduces students to data management and analysis in the SAS statistical package environment. Guides students through the selection and execution of appropriate analyses for different types of data. Teaches students appropriate written presentation and interpretation of data analysis results. Examples focus on applications to public health research. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: GCH 601\(^{B-}\), 604\(^{B-}\), 804\(^{B-}\), HAP 602\(^{B-}\) or 719\(^{B-}\).
\(^{B-}\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 640: Global Infectious Diseases.** 3 credits.
Examines ethical approaches for the prevention and control of infectious and parasitic diseases of global importance. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 645: U.S. and Global Public Health Systems.** 3 credits.
Examines the organization, financing, and delivery of health services for individuals and populations in the United States and across the globe. Compares international health systems and policies. Offered by Global and Community Health (p. 246). May not be repeated for credit. Equivalent to RHBS 651.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 650: Global Non-Communicable Diseases.** 3 credits.
Examines sustainable, evidence-based approaches for the prevention and management of NCDs of global importance. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 651: Behavioral Research Methods.** 3 credits.
Explores quantitative and qualitative research methods, principles and techniques necessary for implementation of health science research. Offered by Global and Community Health (p. 246). May not be repeated for credit. Equivalent to RHBS 651.

**Registration Restrictions:**
Required Prerequisites: GCH 601\(^{B-}\) or 804\(^{B-}\).
\(^{B-}\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 690: Independent Study.** 1-3 credits.
In-depth studies of selected area of health science theory, research, or practice under direction of faculty. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 691: Project Management in Public Health.** 3 credits.
Course examines project management roles and environments, the project lifecycle and various techniques of work planning, and control and evaluation to achieve project objectives. Emphasizes leadership,
communication, grant writing and ethics. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 700 Level Courses

**GCH 712: Introduction to Epidemiology.** 3 credits.
Explores epidemiological methods for measuring population health, designing and implementing observational and experimental studies, critically reading the public health literature, and applying research findings to global and community health. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 722: Infectious Disease Epidemiology.** 3 credits.
Focuses on the epidemiology of infectious and parasitic diseases. Emphasizes study design and data analysis to support the prevention and control of communicable diseases. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: GCH 712\(^B\) or 604\(^B\).
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 726: Advanced Methods in Epidemiology I.** 3 credits.
Develops epidemiological skills through critical review of public health literature and synthesis of evidence. Focuses on interpretation and communication of epidemiological methods and biostatistical analyses. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: GCH 712\(^B\).
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 727: Meta-Analysis for Population Health Research.** 3 credits.
Focuses on conceptual understanding of the quantitative methods used to synthesize evidence on population health issues. Methods for pooling evidence across independent studies, pooling binary/continuous outcomes, differences between fixed and random effects models, and guidelines for appraising published systematic reviews/meta-analyses. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Recommended Prerequisite:** GCH 726

**Registration Restrictions:**
Required Prerequisites: GCH 805\(^B\), HAP 719\(^B\) or NURS 805\(^B\).
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 730: Interventions in Public Health.** 3 credits.
Application of intervention mapping to the design of theory-based interventions for target populations; collaboration with communities to design and implement interventions; selection of evidence-based interventions (EBIs); adaptation of EBIs for new populations; dissemination of EBIs; and cultural and ethical issues related to intervention development, implementation, evaluation, and sustainability. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: GCH 609\(^B\) and 610\(^B\).
B Requires minimum grade of B.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 731: Monitoring and Evaluation of Public Health Interventions.** 3 credits.
Examines frameworks, models, and strategies for monitoring and evaluating public health interventions, including policies and programs. Special emphasis on the development of evaluation and communication plans. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** GCH 730\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 732: Chronic Disease Epidemiology.** 3 credits.
Focuses on the epidemiology of chronic diseases, including cancers, cardiovascular and lung diseases, and mental health disorders. Emphasizes study design, critical reading, and public health approaches to disease control, such as surveillance and screening. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** GCH 712\(^B\) or 604\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 742: Behavioral Epidemiology.** 3 credits.
Focuses on applying epidemiological principles to the study of behavior and human health, emphasizing the role of behavior in public health, determinants of behavior, and research methods for studying health and disease in relation to behavior. Notes: Offered every other year. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** GCH 712\(^B\) or 604\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 752: Nutritional Epidemiology.** 3 credits.
Focuses on the examination of the methodologies of dietary assessment and their application to design, conduct, analysis, and interpretation of epidemiologic studies related to nutrition. Introduces the practical application of nutritional epidemiology to health programs and policy. Notes: Offered every other year. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** GCH 712\(^B\) or 604\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 762: Environmental Epidemiology.** 3 credits.
Focuses on applying epidemiological principles to the study of the environment exposures and human health, emphasizing research methods and data analysis, critical review of research, communication of research results, and applications to public health. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** GCH 712\(^B\) or 604\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 772: Social Epidemiology.** 3 credits.
Focuses on applying epidemiological principles to the study of social factors and human health. Prepares students to measure population-level social determinants of health and quantitatively evaluate their relationship with health and disease. Requires students to translate information and analyses into summaries suitable for technical and non-technical audiences. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** GCH 712\(^B\) or 604\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 712:** Global and Community Health 712
**Nutritional Epidemiology.** 3 credits.
Focuses on the examination of the methodologies of dietary assessment and their application to design, conduct, analysis, and interpretation of epidemiologic studies related to nutrition. Introduces the practical application of nutritional epidemiology to health programs and policy. Notes: Offered every other year. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** GCH 712\(^B\) or 604\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 752:** Global and Community Health 752
**Nutritional Epidemiology.** 3 credits.
Focuses on the examination of the methodologies of dietary assessment and their application to design, conduct, analysis, and interpretation of epidemiologic studies related to nutrition. Introduces the practical application of nutritional epidemiology to health programs and policy. Notes: Offered every other year. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** GCH 712\(^B\) or 604\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
This course is graded on the Graduate Regular scale. (p. 84)

GCH 780: Practicum Seminar. 0 credits.
Provides students with guidance and preparation for engaging in the public health practicum. Notes: This course should be taken one semester prior to enrollment in the practicum course. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Special scale. (p. 84)

GCH 782: International Research Ethics and Methods. 3 credits.
Prepares students to conduct global and community health research. Discusses ethical issues in international health research. Develops plans for identifying a research project, collecting and analyzing data, and reporting results of international health research. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: GCH 543 B- and 604 B-.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 790: Practicum in Public Health. 3 credits.
The practicum provides students with an in-depth supervised experience in an approved public health organization. The practicum will require students to complete a project related to an actual public health issue that is a focus within the organization. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Recommended Prerequisite: Students must be enrolled in the MPH program in good standing. Must have completed GCH 780 and 21 credit hours in the MPH program.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

GCH 792: Integrative Learning Experience. 0 credits.
Provides an integrative learning experience to demonstrate synthesis of the Master of Public Health foundational and concentration competencies. Students produce a written product appropriate to educational and professional objectives. Notes: This course should be taken during the final semester of the program. It is highly recommended that students complete all other MPH Core Courses and at least two Concentration Courses prior to enrollment in this course. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Recommended Prerequisite: Must be enrolled in the MPH program in good standing and have completed at least 21 credit hours in the MPH program.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

GCH 794: Global Health Research Capstone. 3 credits.
Provides a supervised, collaborative research experience on a global health topic that allows students to synthesize, integrate, and apply the knowledge and skills acquired in coursework. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: GCH 651 B-.
B- Requires minimum grade of B-.

Enrollment limited to students in the HH-MS-GLOH program.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Special scale. (p. 84)

GCH 795: Advanced Special Topics in Global and Community Health. 1-3 credits.
Advanced special topics course to address in-depth study of contemporary areas of global and community health insufficiently covered in other courses. Notes: Fulfills elective requirement for MS in global health degree and global health certificate program. Topics vary. May take up to 6 credits within their degree program. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Must be enrolled in a graduate program and have permission of the instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 799: Thesis Research. 1-6 credits.
Thesis research and writing. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 6 credits.
Recommended Prerequisite: Completion of 30 hours in the Master of Science program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Schedule Type: Thesis
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

GCH 804: Biostatistics for Public Health I. 3 credits.
Examines regression modeling including ANOVA techniques, linear regression and logistic regression. Using public health and health care research data, students will apply statistical methods and interpret output from a statistical computing package. Offered by Global and Community Health (p. 246). May not be repeated for credit. Equivalent to NURS 804.

Recommended Prerequisite: A graduate-level statistics course.

Registration Restrictions:

Required Prerequisite: GCH 604 B.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 805: Biostatistics for Public Health II. 3 credits.
Examines data analysis techniques for data management, data cleaning, exploratory data analysis, and statistical modeling, and applies these approaches to public health data using a statistical computing package. Introduces advanced statistical analysis techniques including Poisson regression, longitudinal data analysis, survival analysis, and analysis of survey data. Offered by Global and Community Health (p. 246). May not be repeated for credit. Equivalent to NURS 805.

Required Prerequisite: GCH 804 B.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 806: Advanced Multivariate Statistics and Data Analysis for Health Care Research. 3 credits.
Examines canonical correlation, discriminant analysis, factor analysis and causal analysis (path models and structural equation modeling). Students analyze and interpret data using these statistical techniques. Offered by Global and Community Health (p. 246). May not be repeated for credit. Equivalent to NURS 806.

Recommended Prerequisite: GCH 805 or NURS 805, or equivalent multivariate statistics course.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 807: Measurement Theories and Applications in Public Health Research. 3 credits.
Theories, principles, and techniques presented as foundation for the development and evaluation of instruments for use in health care research. Includes review of statistical techniques required for understanding measurement theory, reliability, validity, item analysis, and instrument construction. Students required to design, construct, administer, analyze, and evaluate an original instrument or evaluate an existing instrument in health care research. Notes: Completion of GCH 805/NURS 805 or GCH 806/NURS 806 is highly recommended. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Recommended Prerequisite: GCH 805/NURS 805 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 814: Biostatistics for Public Health III. 3 credits.
Examines statistical techniques for the analysis of longitudinal, multilevel, survival, and other epidemiologic data. For epidemiologic research hypotheses, students will select appropriate state-of-the-art statistical methods, utilize statistical computing software to evaluate results, and communicate scientific findings. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:

Required Prerequisite: GCH 805 B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GCH 824: Advanced Data Analysis for Epidemiologic Research. 3 credits.
Emphasizes theory and practice of advanced computational methods for controlling for confounding, evaluating effect modification, and approaches for addressing missing data, using multivariable and other models in the context of major epidemiological study designs. Offered by Global and Community Health (p. 246). May not be repeated for credit.

Registration Restrictions:

Required Prerequisite: GCH 814 B.
B Requires minimum grade of B.
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 826: Design of Epidemiologic Research.** 3 credits.
Focuses on the application of strategies for addressing key methodologic challenges that arise when carrying out epidemiologic research and incorporates experiential learning components. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: GCH 727 and 805B.
B Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 830: Research Grant Writing for Public Health.** 3 credits.
Examines universal principles and concepts of writing effective research grant applications for public health with the emphasis on submitting proposals to agencies that support public health research. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Recommended Prerequisite:** GCH 726 and GCH 805/NURS 805/HAP 719

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 851: Advanced Research Designs and Analysis for Social and Behavioral Health Sciences.** 3 credits.
Examines and analyzes data from group-randomized and controlled quasi-experimental trials, including longitudinal and time-series experiments in social and behavioral public health research. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: GCH 804B and 651B.
B Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 880: Epidemiologic Research Seminar.** 3 credits.
Facilitates the development of students' dissertation research through an emphasis on critical review of the epidemiologic research literature. Includes integrative discussions of contemporary challenges in epidemiology. Offered by Global and Community Health (p. 246). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: GCH 727B and 814B.
* May be taken concurrently.
B Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GCH 890: Doctoral Seminar.** 1 credit.
Explores contemporary issues and innovations in public health research and population health. Emphasizes professional development activities, such as scientific communication skills, teaching instruction, preparing for the job market, and career planning. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**900 Level Courses**

**GCH 998: Doctoral Dissertation Proposal.** 1-9 credits.
Focuses on the development of a doctoral dissertation proposal in their area of concentration under the direction of their dissertation committee. Includes the development of research hypotheses, literature review, study methods, data analysis, and detailed publication strategy. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)
GCH 999: Doctoral Dissertation. 1-9 credits.
Doctoral dissertation research and defense under the direction of their dissertation committee. Offered by Global and Community Health (p. 246). May be repeated within the degree for a maximum 18 credits.

Registration Restrictions:
Required Prerequisite: GCH 998.

Enrollment limited to students with a class of Advanced to Candidacy.

Schedule Type: Dissertation
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Government (GOVT)

100 Level Courses
GOVT 101: Democratic Theory and Practice. 3 credits.
Comparative exploration; topics include contemporary analysis of the meanings of liberty, equality, representation, property rights, voting rights, and civil responsibilities. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)
Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 103: Introduction to American Government. 3 credits.
An overview of key organizing principles of American government, including its institutions, history, and various aspects of political participation. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)
Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 132: Introduction to International Politics. 3 credits.
Nature of international politics, approaches to study of international politics, state and nonstate actors in international system, patterns of action and interaction between nation-states, international institutions, and major global issues. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Mason Core: Global Understanding (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 133: Introduction to Comparative Politics. 3 credits.
Discusses methods and subject matter of comparative political analysis. Includes political systems, politics, participation in politics, government structures, policy-making process, and evaluation of political performance. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

300 Level Courses
GOVT 300: Research Methods and Analysis. 4 credits.
Emphasizes asking clear, researchable questions and using appropriate evidence to answer them. Introduces broad range of evidence including quantitative and qualitative information. Studies design and analysis of surveys, government archives, case studies, and interpretations of events in journals. Examines ethical implications of information technologies. Notes: Required for all majors in government and international politics, and public administration. Strongly recommended before or during first semester of enrolling in 300-level courses. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Mason Core: Info Tech (complete) (p. 142)
Recommended Prerequisite: 60 hours or permission of instructor.
Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 301: Public Law and the Judicial Process. 3 credits.
American judicial organization and operation, role of the Supreme Court in policy formation, and selected constitutional principles. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to CRIM 301.

Recommended Prerequisite: GOVT 103.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 302: American Political Development. 3 credits.
Examines American political development, both in itself and compared to other nations. Addresses the extent to which the United States has or has not been exceptional in its development as a nation state. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 303: American State and Local Government. 3 credits.
Nature, organization, functions, and problems of American state and local governments. Notes: Students may not receive credit for GOVT 204 and 304. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
GOVT 305: Contemporary American Federalism. 3 credits.
Legal, administrative, fiscal, and political dimensions of evolving American federalism. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 307: Legislative Behavior. 3 credits.
Organization, processes, functions, and roles of legislature and U.S. Congress members. Topics include state legislatures and cross-national comparisons as time and resources permit. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 308: The American Presidency. 3 credits.
Survey of modern presidency, including constitutional origins of office, growth and influence of White House staff, Cabinet, presidential appointees and control of executive branch, relations with Congress, and domestic and national security policy making. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 309: Government and Politics of Metropolitan Areas. 3 credits.
Government, politics, and problems of metropolitan centers and surrounding areas. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 311: Public Opinion and Electoral Behavior. 3 credits.
Studies actions of voters, candidates, and political parties in relation to the expression of relevant public opinion in a democratic system. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103 and 300.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 312: Political Parties and Campaigns. 3 credits.
Characteristics and functions of political parties, influence of parties and other political forces on electoral decisions, and emphasis on parties' inability or ability to hold government accountable to citizens. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 313: Political Psychology. 3 credits.
Examines political topics through a psychological lens. Review of theoretical approaches, methods and themes. Political psychology has been used to explore the motivation of presidents, why some groups will seek to kill off other groups through acts of genocide, how the authoritarian state can emerge, and what goes through your mind as you go to cast your ballot on Election Day. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 318: Interest Groups, Lobbying, and the Political Process. 3 credits.
Role, internal operations, strategies, and activities of interest groups. Evaluates ability of these groups to enable citizens to influence or control government and enhance democratic process. Considers conditions under which social movements become, or fail to become, effective interest groups. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 103.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 319: Issues in Government and Politics. 1-3 credits.
Studies special issues relevant to government and politics. Topics announced in advance. Examples include politics and the arts, ethnic conflict and the political system, gender politics, and changing dynamics in political institutions. Notes: May be repeated when topic is different with permission of department. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: GOVT 103.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 322: International Relations Theory. 3 credits.
Advanced inquiry into international relations. Studies theories, concepts of international relations, and major forces and issues in international politics. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 132 or 133.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
**GOVT 323: Classical Western Political Theory.** 3 credits. Lectures, discussions of developments in Western tradition of political thought from time of Greek city-state to late medieval Christendom. Topics include nature and purpose of politics, relationship between individual and state, political significance of religion and tradition, and concept of natural law. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to PHIL 324.

**Recommended Prerequisite:** GOVT 101, or three credits of Philosophy.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 324: Modern Western Political Theory.** 3 credits. Lectures, discussions of developments in Western tradition of political thought from Renaissance to mid-19th century. Topics include rise of individualism in political theory, early developments in social contract theory, theories of radical popular sovereignty, and early criticisms of liberal theory. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to PHIL 324.

**Recommended Prerequisite:** GOVT 101, or three credits of Philosophy.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 327: Contemporary Western Political Theory.** 3 credits. Lectures, discussions of developments in Western tradition of political thought from mid-19th century to today. Different sections focus on various political theories that have been influential during this period, such as liberal, libertarian, conservative, communitarian, Marxist, feminist, and postmodern thought. Topics include nature and purpose of politics, relationship between individual and state, political significance of religion and tradition, and concept of natural law. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to PHIL 327.

**Recommended Prerequisite:** GOVT 101 or three credits of Philosophy.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 328: Global Political Theory.** 3 credits. Theory and history of political community, governance, and development as understood around the world, including China, Japan, India, Africa, Latin America, and the Islamic world; relations of power in modern conceptions of the political; comparative visions of world order in the context of emerging global powers. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** GOVT 101 or 133.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 329: Issues in Political Theories and Values.** 1-3 credits. Studies special issues relevant to theoretical and value aspects of government and politics. Topics announced in advance. Examples include ethics and politics, ethics and environmental policy, changing perspectives on civil rights and liberties, religion and politics, and changing views of public space. Notes: May be repeated when topic is different with permission of department. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 331: Government and Politics of Latin America.** 3 credits. Contemporary political systems of Latin America, with emphasis on institutions, political processes, and political behavior. Presents case studies of several key Latin American politics; discusses problems of political development. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 332: Government and Politics of the Middle East and North Africa.** 3 credits. Societies of Middle East and North Africa and their response to impact of internal sociocultural-political determinants and external forces. Focuses on contemporary politics, ideologies, popular manifestations, institutions, and operations. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 333: Government and Politics of Asia.** 3 credits. Government structures and political processes of Asian countries. Examines patterns of conflict and cooperation, and issues of economic development and political reform in rapidly changing world. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 334: Government and Politics of Europe.** 3 credits. Examines governance and political systems in Europe at the national and supranational levels, with emphasis on actors, institutions, processes, and behavior. Explores key policies in a variety of fields, such as social
policy, migration, and economic and monetary union. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 337:** *Ethnic Politics in Western Europe and North America.* 3 credits.
Studies resurgence of ethnic nationalism in industrial democracies of Western Europe and North America, and the comparative analysis of policy issues related to ethnonationalism. Case studies drawn from the industrial democracies. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 338:** *Government and Politics of Russia.* 3 credits.
Examines continuity and change in Russia’s Soviet era and post-Soviet era politics and international relations. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 339:** *Issues in the Politics of Advanced Industrial Societies.* 1-3 credits.
Studies selected current political issues in industrial democracies of Western Europe and North America. Specific topics chosen each semester to reflect contemporary political concerns in these countries, but political process in advanced industrial countries is organizing principle throughout the course. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** GOVT 103 or 133 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 340:** *Central Asian Politics.* 3 credits.
Comparative examination of political change in Central Asia with attention to national identity formation, political economy, political conflict, political Islam, and democratization. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 341:** *Chinese Foreign Policy.* 3 credits.
Discusses theories and practices of Chinese foreign policy decision making, which are then used to understand China’s relations with United States, Japan, Russia, Europe, and its Asian neighbors, and China’s policy in issues such as human rights, environmental protection, and nuclear nonproliferation. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 342:** *Diplomacy.* 3 credits.
Origins of organized diplomacy: tasks, procedures, instruments, and problems of diplomacy. Emphasizes current, future roles of diplomacy. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 343:** *International Political Economy.* 3 credits.
Introduces international political economy. Examines interplay of economics and politics, and applies these to different issues. Focuses on issues of contemporary significance, with attention to historical issues and basic political and economic concepts. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132, 133; or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 344:** *American Foreign Policy.* 3 credits.
Central issues surrounding the conduct of America’s foreign relations, with special emphasis on structural and constitutional questions, national policy objectives abroad, and conduct of foreign policy in a democracy. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 345:** *Islam and Politics.* 3 credits.
Covers politics of religion in Muslim societies; history, ideology, and practices of key individuals, movements, and institutions; case studies of political Islam in the Middle East, Asia, Africa, and the West; plurality and diversity of political expression in Muslim world; nature of democracy
in Islam; and Islamic state. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 346:** American Security Policy. 3 credits.
Approaches U.S. National security policy from perspective of organization and implementation of specific policies. Applies theoretical concerns to historic cases to illuminate problems that continue to challenge country. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132, 133.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 347:** International Security. 3 credits.
Explores enduring security problems and new developments. Examines effects of international system on defense policies of states, particularly tensions of world caught between emerging interdependence and national demands. Encourages development of critical-thinking and group and oral presentation skills. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 132.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 351:** Administration in the Political System. 3 credits.
Administrative structures and processes in political setting of public management. Presents organization and administrative theory, critiques, and current practices; and examines impact of changes in social, political, and economic environment on concepts, models. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 353:** Social Entrepreneurship. 3 credits.
Introduces students to the different steps that social entrepreneurs work through to drive social change: identifying problem to address, developing a strategy to address the social need, fundraising, growing the organization, tracking results, and maximizing impact. Offered by Schar School of Policy &Govt (p. 961). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 354:** Nonprofit Sector in Society. 3 credits.
Introduces students to the thousands of soup kitchens, shelters, health clinics, educational institutions, arts agencies, and other organizations that make up the U.S. nonprofit sector. Topics covered include: the internal structure and operation of nonprofits; the role of nonprofits in delivering services, advocating for particular points of view, and providing vehicles for caring and self-expression; and the partnerships that nonprofits form with donors, government agencies, and businesses to address social problems. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 355:** Public Personnel Administration. 3 credits.
Analyzes techniques and tools in human resource management including merit system, classification, compensation, evaluation, recruitment, and labor relations. Emphasizes current legal and policy issues in personnel administration, such as diversity and privatization. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 351.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 356:** Public Budgeting and Finance. 3 credits.
Covers tools and techniques in budgeting and financial management in U.S. governments, including management of public financial institutions, budgetary process and reform, and relationship of public budgeting to national economic policy. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 351.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 357:** Urban Planning. 3 credits.
Reviews spatial, policy, and administration principles that guide urban planning activities in the United States. Outlines differences between theory and practice and provides tools, methods, and perspectives commonly incorporated into practice of urban planning and policy analysis. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 351

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 358:** Nonprofit Financial Planning. 4 credits.
Provides understanding of social mission and entrepreneurial cross pressures underlying financial planning and accounting in nonprofit sector. Topics include revenue sources and projections, entrepreneurial techniques, and cost analysis for nonprofit and nongovernmental entities.
Lectures, student case studies. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** 60 credits or permission of instructor.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 361:** *Introduction to Environmental Policy.* 3 credits.

Environmental politics and policy making since the 1970s. Primarily U.S. focus, with some discussion of global issues. Examines policy strategies and outcomes, ethical and economic debates, political controversies, lawmaking and enforcement, and role of key players. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to EVPP 361.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** 30 credits.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 362:** *Intermediate Environmental Policy.* 3 credits.

Examines environmental issues building on learning objectives from GOVT 361. Focuses on environmental and policy issues in the US and internationally, exploring the politics of nature and the interaction of environmental science and politics and resulting controversy. Risk and uncertainty loom large in most environmental issues. Covers "natural" disasters as well as direct "man-made" problems. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree for a maximum 12 credits. Equivalent to EVPP 362.

**Recommended Prerequisite:** EVPP 361 or GOVT 361 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 364:** *Public Policy Making.* 3 credits.

Processes, agencies, and politics involved in the proposal making, implementation, evaluation, and revision of U.S. public policy. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 365:** *State and Regional Public Policy.* 3 credits.

Examines public policy decisions that affect local and state jurisdictions in context of federal system of government. Examines context, substance, and impact of such policies as housing, transportation, land use, crime prevention, service delivery, and health care. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 366:** *Public Policy Analysis.* 3 credits.

Methods of public policy analysis, evaluation, and research. Studies design and development of alternative courses of government action and evaluation of results, and problems in applying systematic analysis to political issues. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 300.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 367:** *Money, Markets and Economic Policy.* 3 credits.

Applies basic economic concepts and principles to issues facing the U.S. and global economies. Topics include productivity and economic growth, taxes, health care, globalization, income distribution and financial crises, with an emphasis on market structure, social institutions and the not-always rational behavior of investors and consumers. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to ECON 367.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 368:** *Tools for Economic Policy Analysis.* 3 credits.

This course outlines the economic framework for studying public policy, taking a more quantitative approach than GOVT 367. Topics include consumer and producer behavior under different market structures, how and why markets can fail to produce socially desirable outcomes, income distribution, and macroeconomic growth. Emphasizes using economic models to evaluate both market outcomes and policy interventions. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 367.

**Schedule Type:** Seminar

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 398:** *Study Abroad.* 3 credits.

Study abroad. Course topics, content, and locations vary. Notes: GOVT 398 may only be applied to a major or minor with prior written approval from the department. A maximum of 6 credits may be applied to the BA in government and international politics, the BS in public administration, or any minor offered by the Schar School of Policy and Government. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 12 credits.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 399:** *Research Practicum.* 1-3 credits.

Applies research methods in context of assisting with faculty research. Individualized sections taught by arrangement with full-time faculty.
Methods adopted vary, but generally include library research, data collection, data analysis, and report construction. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** GOVT 300 and Permission of Instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**GOVT 400: Issues in Political Analysis.** 1-3 credits.
Studies special issues relevant to analytical approaches to studying government and politics. Topics announced in advance. Examples include advanced statistical methods, time series analysis, game theory, social network analysis, geographic information systems for politics, social science experiments, and causal inference. Notes: May be repeated when topic is different with permission of department. Offered by Schar School of Policy & Govt. May be repeated within the term for a maximum 9 credits. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Registration Restrictions:**
**Required Prerequisite:** GOVT 300.
**CR** Requires minimum grade of C.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 407: Law and Society.** 3 credits.
Explores relationship between law and society, including concept of law; origin, development, and role of law in society; and relationship between law and social change. Assesses different approaches and methodologies. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** CRIM 100 or GOVT 301.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 409: Virginia Government and Politics.** 3 credits.
Examines history of politics in Virginia and current political issues. Particular attention to changing dynamics of political parties, key legislative issues, and policies of recent administrations. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 412: Politics and the Mass Media.** 3 credits.
Responsibilities and freedoms of mass media in democracy. Explores influence of media on citizens' opinions, elections, and decisions of public officials. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to COMM 412.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 414: Politics of Race and Gender.** 3 credits.
Examines political, economic, and social impact of public policies and implications for race, gender, and age. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 420: American Political Thought.** 3 credits.
Major political values and theories in America from formation of American republic to present. Covers changes in American political values in crisis periods and contemporary American political theory including pluralism, elite theories of democracy, and empirical political theory. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 422: Constitutional Interpretation.** 3 credits.
Examines Supreme Court's interpretation of constitutional powers of Congress, presidency, and judiciary. Includes examination of major decisions concerning state regulation, taxation, and interstate relations. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 423: Constitutional Law: Civil Rights and Liberties.** 3 credits.
Studies First Amendment freedoms of speech, press, assembly, association, and religion; right to privacy; and Fourteenth Amendment equal protection. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to CRIM 423.

**Recommended Prerequisite:** GOVT 103.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GOVT 427: Feminist Political Thought.** 3 credits.
Explores feminist political thought in historical context. Topics include feminist political movements, feminist critiques of political philosophy, and feminist contributions to political theory. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.
Recommended Prerequisite: GOVT 101, WMST 200, 3 credits of PHIL, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 428: Advanced Democratic Theory. 3 credits.
Explores various theoretical approaches to nature and justification of democracy. Topics may include liberal, communitarian, pluralist, and deliberative theories and their critics; constitutionalism; role of markets; and transnational democracy. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 101; or one course in PHIL.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 430: Comparative Political Leadership. 3 credits.
Comparative political leadership, relationships between political cultures and types of leadership, patterns of leadership recruitment, and linkages between political elites and citizenry. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 132, 133.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 433: Political Economy of East Asia. 3 credits.
Discusses different theoretical perspectives of East Asian political economy; transformation of East Asia; and issues such as money, finance, trade, investment, environment, and energy. Focuses on issues of contemporary significance, but attention also given to history. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Specialized Designation: Non-Western Culture

Recommended Prerequisite: GOVT 133 and 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 443: Law and Ethics of War. 3 credits.
Explores sources of morality in armed conflict, and implications of such ideas for international relations. Examines content and philosophy of modern law of war. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 132.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 444: Issues in International Studies. 1-3 credits.
Major issues in international systems, including international political economy and security. Notes: May be repeated when topic is different with permission of department. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: GOVT 132, 133.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 445: Human Rights. 3 credits.
Explores philosophical, legal, and political issues at heart of modern international human rights movement. Examines historical background legal architecture of modern human rights movement. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 132.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 446: International Law and Organization. 3 credits.
Nature, sources, and subject of law of nations; law and individual; territorial questions; nature, sources, and functions of international organizations; international transactions and organizations; war and present; and future status of international law. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 132, 133.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 447: Revolution and International Politics. 3 credits.
Historical overview of modern revolutions as well as different theories about causes and consequences of revolutions. Special attention to Marxist-Leninist, Arab nationalist, and Islamic revolutions. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 133.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
GOVT 448: Ethics and International Politics. 3 credits.
Ethics and international politics ask students to wrestle with dilemmas raised by a desire to behave morally in an international system in which consensus about ethical matters is absent. Distributive justice and use of force are two overarching themes. Students also develop, apply, and justify their own perspectives on ethical problem using philosophical theory, history, and social science research. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: 60 hours and GOVT 132 or PHIL 151.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 452: Administrative Law and Procedures. 3 credits.
Law of public office. Studies procedures followed by and the legal limits on administrative agencies and their officers and employees. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: GOVT 351.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 460: Surveillance and Privacy in Contemporary Society. 3 credits.
Philosophical perspectives, historical context, technological developments, and institutional changes that surround controversies about privacy and surveillance in contemporary society. Explores public and private institutions doing surveillance, how they calculate and manage risk, and legal constraints on surveillance activities. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to CRIM 460.

Recommended Prerequisite: CRIM 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 464: Issues in Public Policy and Administration. 1-3 credits.
Analyzes selected policy issues in administering public policies. Topics announced in advance. Examples include environmental policy, government regulation, federal mandates, state policy, and regional policy. Notes: May be repeated when topic is different with permission of department. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: GOVT 103 plus 60 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 467: Current Issues in Economic Policy. 3 credits.
Applies basic concepts of economics, political science and ethics to some of the most pressing issues facing the U.S. and global economies. Topics include productivity and economic growth, taxes, soaring costs for health care and higher education, globalization, income inequality, financial crises, the size of government and the proper role of regulation.

Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: Open to PPE concentrators or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 469: Philosophy, Politics, and Economics. 3 credits.
Covers issues in the philosophy, economics, and political science of institutions, information, and collective action. Through case studies of existing legal and political institutions, applies the insights to problems in politics, policy making, social theory, and social, moral, and political philosophy. (Specific content varies). Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts. Equivalent to ECON 460, PHIL 460.

Recommended Prerequisite: PHIL 358, ECON 412, and GOVT 467, or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 480: Internship. 3 credits.
Approved internships with specific employer. Programs relate in some capacity to government, politics, public policy, or the law. For 3 credits, a minimum of 135 hours is required. A maximum of 6 credits of GOVT 480 may be applied to a degree in government and international politics or in public administration. 3 of those credits may be applied to requirements for the major with prior approval of the internship faculty advisor. A maximum of 3 additional credits may be used for general elective credit toward the 120 credits required for the bachelor's degree. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 15 credits.

Recommended Prerequisite: GOVT 101, GOVT 103, GOVT 132, and GOVT 133.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

GOVT 490: Synthesis Seminar. 3 credits.
Readings, individual or group projects, and discussion of papers reflecting on connections between liberal arts and sciences and political world. Notes: Course topic varies by semester. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: GOVT 300 and 18 credits in major.

Registration Restrictions:
Enrollment is limited to students with a major in Administration of Justice, Global Affairs, Government and Politics, Government Intl Politics, International Studies or Public Administration.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 491: Honors Seminar. 3 credits.
Readings, individual or group projects, and discussions of seminar papers. Notes: Subject varies. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: GOVT 300 and 18 credits in major.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

GOVT 496: Directed Readings and Research. 1-3 credits.
Reading and research on specific topic under direction of faculty member. Notes: Written report required; oral report of research may be required. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Major in government and international politics with 90 credits and permission of instructor and department.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

GOVT 500: The Scientific Method and Research Design. 3 credits.
Grounds students in the principles of the scientific method as the framework for investigating all research questions in political science, whether qualitative or quantitative in character (or both). Focus is on sound and rigorous research design. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 520: Political Theory. 3 credits.
Analyzes selected major works of ancient, modern, or contemporary political theory that illuminate basic problems and questions for people engaged in political or civic life. Examines justice, liberty, equality, autonomy, rights, obligation, participation, and nature of politics. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: Admission to the MA in political science or permission of department.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 530: Comparative Politics. 3 credits.
Examines fundamental issues in comparative politics and provides broad coverage of the central themes under study. Designed to help students think theoretically and critically about the study of comparative politics, its scientific objectives, and its epistemological assumptions. Within this context, students will look at concepts and approaches, as well as important theories and debates that characterize the subfield. Helps prepare students for qualifying exams in comparative politics. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 540: International Relations. 3 credits.
Focuses on changing structure of international politics, post-Cold War security issues, effect of globalized economy and information technology revolution, enhanced role of global corporations and nongovernmental organizations, and rise of nonsecurity issues in emerging international
agenda. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 541: Introduction to Critical Analysis and Strategic Response to Terrorism. 3 credits.
Introduces terrorism as a complex threat to human security. Focuses on tools for analyzing terrorism and the underlying sources and conditions that contribute to it. Considers similarities and differences between terrorism and other threats to human security. Explores the lessons learned in the history of responding to terrorism. Focuses not only on different tactics of response, but also includes how different types of societies (dictatorship, democracies, etc.) have responded to terrorism and what the results of those responses have been. Includes case studies of responses to terrorism. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 550: Seminar in Theories of Public Administration. 3 credits.
Reviews the theoretical traditions in American public administration, from the earliest days of the founding to the present. Concludes with consideration of contemporary theoretical debates over the proper role of public administrators and controversies about conflicting demands made on the public service and the public sector. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 603: Seminar in the Courts and Constitutional Law. 3 credits.
Analyzes role, influence, and effects of U.S. courts in creating constitutional legal norms and interpreting them. Special attention to First and Fourteenth Amendments and Commerce Clause. Lecture and discussion; students expected to read and analyze leading court cases. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 604: Seminar on Congress and Legislative Behavior. 3 credits.
Examines theories and empirical research on the U.S. Congress and legislative behavior, including elections, representation, structures, and processes. Also examines Congress' impact on the design and implementation of public policy, interactions with other branches of government, and comparisons with parliamentary systems. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 605: Seminar on the Presidency.** 3 credits.
Examines the American presidency from a number of substantive and methodological perspectives. Readings and discussions in the course appraise the presidency within the system and focus on the role the presidency plays in formulating and implementing public policy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 510.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 631: Seminar in Comparative Politics and Institutions.** 3 credits.
Examines theories and practices of governance and development in comparative national settings. Course explores key subsets of the comparative politics literature in depth, including institutional change, regime types and transitions, democracy and authoritarianism, states and state-society relations, revolution, social movements, political cultures, and methods. Course is explicitly conceptual and cross-regional. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 632: Politics and Societies of the Middle East.** 3 credits.
Studies the Middle East in comparative perspective, using social scientific categories of analysis. Topics include: regime types, their basis and causes; influential political trends such as Arab nationalism, Ba'thism, and political Islam; the role of kinship, religion, and tribe in opposition and regime politics; the regional oil economy and economic crisis; democratic liberalization; and the growth of civil society. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 640: Strategic Responses to Terrorism: Coordinated Decision Making.** 3 credits.
Revisits, expands, and examines the critical themes developed in the terrorism certificate program. Provides students with the opportunity to apply the theoretical concepts developed in practice. Integrates the ideas, theories, and practices considered in this track within the larger field of terrorism analysis and strategic responses to this threat. Notes: This is the capstone course for the terrorism certificate program and must be completed in the final semester of the certificate program. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Corequisite:** GOVT 541.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 706: Federalism and Intergovernmental Relations.** 3 credits.
Examines broad trends in governance, including theory and practice of federal, state, and local governments. May include privatization, devolution, mandating, regulatory reform, and comprehensive federalism
reform. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 510.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 713:** *The Constitution, Criminal Procedure, and Security.* 3 credits.
Explains legal doctrines that form basis of U.S. constitutional procedural rights, how these doctrines develop, and why courts rule as they do. Evaluates strengths, weaknesses of these rights. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 721.

**Recommended Prerequisite:** CRIM 720, GOVT 728, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 717:** *Qualitative Methods.* 3 credits.
Focuses on scientific design of qualitative research questions and use of specific qualitative methods in scientific analysis. Covers when and how to use qualitative research methods to answer empirical questions in political science; primary data collection methods (interviews, observations, document review); the appropriateness of different research approaches; procedural and ethical concerns that may arise in use of qualitative methods. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 511 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 719:** *Issues in American Politics.* 3 credits.
Examines significant issue in American politics and political behavior. Analyzes topic of contemporary and emerging concern. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** GOVT 510.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 720:** *Advanced Seminar in Political Theory.* 3 credits.
Contemporary, historical, and comparative study of key themes in Political Theory. Topics may include theories of sovereignty, power, democracy, secularism, political economy, justice, humanism, race, empire, colonialism, gender, and sexuality. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 725:** *Democratic Theory.* 3 credits.
Examines democracy in terms of versions of liberalism, theories of social capital and civic participation, and discourses about civil, political, and human rights. How is democracy conceptualized normatively and empirically? What underlying economic, social, and cultural conditions promote democracy? What role do institutions play in creating and sustaining a stable democratic society? Takes a broadly comparative perspective, focusing on variety of established and emerging democracies around the world. Elective for students specializing in American government or international politics and comparative governments. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 726:** *Theories of Justice.* 3 credits.
Overview of ancient and modern theories of justice with application to contemporary issues involving justice system and other social and political institutions. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 700.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
GOVT 727: Restorative Justice. 3 credits.
Origins of restorative justice, its principles, implications for different justice organizations and processes, and application to problems such as family violence, human rights, and reconciliation following mass victimizations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: CRIM 700, GOVT 726, or permission of instructor.
Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 728: Behavior of Law. 3 credits.
Examines development of law, and law’s effect on human behavior. Reviews theories of law’s meaning and aims. Examines construction of law, and investigates consequences of law and legal decisions. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 720.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 731: Advanced Seminar in Comparative Politics. 3 credits.
Assumes basic proficiency in comparative analysis. Regionally based examination of key debates in the comparative politics field. Key theoretical and methodological debates are addressed through in depth examination of regional political processes. Regions include Latin America, Asia, Middle East, European Union, Africa, and Russia. Notes: May be repeated when topic is different with permission of department. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: GOVT 530.
Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 732: Comparative Justice. 3 credits.
Survey of justice systems and their environments in different lands and cultures. Identifies commonalities and differences among justice systems, evaluates them, and considers policy implications. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: CRIM 700, GOVT 726, or permission of instructor.
Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 733: Islam and Politics. 3 credits.
Provides an overview and understanding of the multifaceted nature of political Islam in the contemporary world. Covers brief history of Islam, formation of modern states in the post-colonial Muslim world, nature of contemporary Islamic radicalism and militancy and the future of Islamism. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 734: Democratization. 3 credits.
Examines concepts and concrete cases of democratization and cases where democratization is absent or incomplete. Investigates methods for measuring democracy and authoritarianism; the role state and society play in political change; the effects religion, the military, ethnic division, and technology have on government reform; and the extent to which international actors can encourage democratization. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

GOVT 735: Comparative Public Management. 3 credits.
Examines the comparative decision environments for public managers and policy elites in the OECD countries generally, focusing on four models: 1) Franco-Japanese model, 2) German concentration model, 3) "Anglo-Saxon" (United States) model, 4) Chinese model. Notes: May apply to elective credit in the fields of comparative politics and public administration. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 739: Issues in Comparative and International Politics.** 3 credits.
Explores issues of contemporary and emerging concern in comparative and international politics. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** GOVT 540.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 741: Advanced Seminar in International Politics.** 3 credits.
Examines theoretical and methodological issues central to study of international relations by focusing on specific topic: American foreign policy, diplomacy, international law and organization, international relations theory, international ethics, human rights and humanitarian intervention, the environment, and others. Notes: May be repeated when topic is different with permission of department. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** GOVT 540.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 742: International Negotiation.** 3 credits.
Examines frameworks and perspectives that have guided scholarly work on negotiation. Students will analyze complex cases of negotiations in the areas of security, trade, and the environment, and practice negotiating key security and environmental issues on the agendas of nations and international organizations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 743: International Political Economy.** 3 credits.
Examines interplay of international politics and economics. Discusses theoretical perspectives and analytical tools in academic field of international political economy, and applies theories and tools to trade, investment, exchange rates, development, regionalization, and globalization. Explores how international economic and political forces increasingly shape domestic interests, and how domestic politics affect international political economy. Lecture, discussion. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 343 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 744: Foundations of Security Studies.** 3 credits.
Introduces students to a selection of the original sources of the most important ideas that form the basis of security studies as a subfield of political science. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 745: International Security.** 3 credits.
Examines interplay of international politics and international security. Discusses theoretical perspectives and analytical tools in academic field of international security, and applies theories and tools to nuclear, biological, and chemical weapons, strategy and defense, and arms control. How domestic issues affect defense policies, terrorism, changing nature of international conflict, and human security will be examined. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 540.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 746: Media and International Affairs.** 3 credits.
Examines government/media interaction and media coverage of war and foreign policy since Vietnam and considers a range of critical policy questions. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 540.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 753: Third-Party Governance.** 3 credits.
Examines design and management of government programs that rely on other levels of government and the private sector for delivery, with focus on such governmental tools as contracts, grants, loans, regulation, and tax credits. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 755: Seminar in Politics and Bureaucracy.** 3 credits.
Explores research and theory on political causes and effects of actions of government bureaucratic agencies. Readings examine origins of agencies, influences on decisions and programs, sources of internal and external accountability, pathologies of bureaucracies, and contributions bureaucracies make on effective and just governance. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 510.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 758: Homeland/Transportation Security Administration.** 3 credits.
Examines the terrorist attacks of 9/11, vulnerabilities of the aviation security at that time, failure of elected officials and administrators to act more decisively to improve security before 9/11, and the policy and administrative responses to the 9/11 attacks, including the creation of the Transportation Security Administration and the Department of Homeland Security. Includes the development of radical Islam and the rise of Osama bin Laden and Al Qaeda. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 759: Issues in Public Administration and Management.** 1-3 credits.
Current issues in administration and management of public organizations in contemporary American government. Includes practical applications of theories and analysis to managerial problems. Emphasizes competence in improving management in selected government settings. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 794: Internship.** 1-6 credits.
Work-study program with specific employers. Notes: Contact internship coordinator one semester before enrollment. Credit determined by department. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Admission to graduate program and 12 credits. Notes: Contact internship coordinator one semester before enrollment. Credit determined by department. May be repeated for a maximum of 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**GOVT 796: Directed Readings and Research.** 1-6 credits.
Reading and research on specific topic under direction of faculty member. Notes: Written paper required. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** 15 credits of GOVT courses at 500 level and above, and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 798: Political Science Research Project.** 3 credits.
Research project related to student's concentration under supervision of a faculty advisor. Student produces substantial and original contribution to political science knowledge on model of article in scholarly journal. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** 24 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
**GOVT 799: Political Science Thesis.** 1-6 credits.
Substantial and original research paper with guidance of faculty advisor. Thesis proposal must be approved in advance by advisor and two faculty members who comprise thesis committee. Completed research must be approved by committee and defended publicly in oral presentation. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree.

**Recommended Prerequisite:** 24 credits and approval of thesis proposal.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

**Students in a Non-Degree Undergraduate degree may not enroll.**

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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### 800 Level Courses

**GOVT 800: PhD Research Seminar.** 3 credits.
Provides an opportunity for PhD students in political science to present and refine independent research, and to further improve understanding of social scientific method as they prepare for conference presentations, qualifying exams, and subsequent dissertations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students in the LA-PHD-POS program.

Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 810: American Political Development.** 3 credits.
Advanced graduate-level seminar on historical roots of American politics. Examines political culture and historical development of U.S. institutions, and how laws and programs have been affected by historical and cultural development. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 510.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 811: Advanced Seminar in American Institutions.** 3 credits.
Advanced graduate-level seminar on specific topics of contemporary research and theory in American governmental institutions. Topics vary to include presidential politics, Congress, and politics of the judiciary. Readings include classic and contemporary literature. Seminar format with discussion, student presentations. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** GOVT 520.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 815: Advanced Seminar in Political Behavior.** 3 credits.
Advanced graduate-level seminar on specific topics of contemporary research and theory in American political behavior. Topic varies to include political parties, electoral politics, public opinion and voting behavior, interest groups, and lobbying. Readings include classic and contemporary literature. Seminar format with discussion, student presentations. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** GOVT 510.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 820: Advanced Topics in Political Thought.** 3 credits.
Advanced graduate-level seminar on topics of contemporary research and theory in political thought. Topics vary to include political ideologies, feminist theory, and political theory. Seminar format with discussion, student presentations. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** GOVT 520.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 831: Research Seminar in Regional Political Culture and Development.** 3 credits.
Advanced graduate-level seminar on theories of political culture and economic development applied to Middle East, Latin America, Asia, and Africa. Debates economic growth and development from broad and rigorous analytical base. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 540.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 841: Ethics and Human Rights in International Affairs.** 3 credits.
Seminar on ethical behavior in an international system in which consensus about ethical matters is absent. Overarching themes are distributive justice, human rights, and use of force. Students develop, apply, and justify their own perspective on an ethical problem using ethical theory and social science research. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 540.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 843: Diplomacy.** 3 credits.
Advanced graduate seminar on theory and practice of diplomacy; alliance construction and destruction; coercive and cooperative diplomacy; diplomacy of certain great powers such as America, Russia, China, France, and Japan, and small and revolutionary powers. Also examines diplomacy and the media, and day-to-day diplomacy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** GOVT 540.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 850: Advanced Seminar in Public Administration Research and Theory.** 3 credits.
Focuses on a topic of central concern in contemporary public administration research and theory. Content of the seminar varies but includes such topics as organizing for homeland security, managerial and political effects of e-government, or the application of principal-agent models in public management. Notes: May be repeated when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** GOVT 510, GOVT 650.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GOVT 851: Doctoral Seminar in Theories of Organization and Bureaucracy.** 3 credits.
Examines key issues in organization theory and behavior. Issues include organization design; interorganizational coordination, intelligence and decision making systems; leadership and motivation theories; and theories or organizations as agents of political and social change. Uses case studies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** Advancement to candidacy.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)
GOVT 999: Doctoral Dissertation Research. 1-12 credits.
Research on approved dissertation topic under direction of dissertation committee. Notes: May be repeated for up to 9 credits in a semester. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

GBUS 613: Financial Reporting and Decision Making. 3 credits.
Foundation course focusing on economics and analysis of business transactions and related financial reporting issues. Topics include introduction to accounting framework used in financial reporting; and analysis of financial statements, economic events and their impact on financial reports, and impact of accounting methods on financial reports. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Accounting or Business Administration.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

GBUS 623: Marketing Management. 3 credits.
Develops market-based knowledge and skills for effective marketing decision making, strategy design, implementation, and evaluation in wide variety of institutional and competitive situations. Addresses the importance of companies being market-driven and customer-focused. Emphasis on case studies, team work, and projects. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting or Business Administration.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

GBUS 643: Managerial Finance. 3 credits.
Introduces theory and practice of finance within corporations. Topics include intertemporal choice, valuation, capital budgeting and structure, working capital management, and risk and return analysis. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

**GBUS 653: Organizational Behavior. 3 credits.**
Emphasizes development of conceptual tools for understanding and analyzing individual and group behavior in organizations and organizational processes. Considerable focus on developing relevant skills for working in groups and teams. Lectures, discussions, case analyses, and class exercises. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**GBUS 696: Directed Studies in Graduate School of Business. 1-3 credits.**
Approval by faculty member and program director required prior to registration. Studies specialized topics in business not otherwise available in the curriculum. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GBUS 720: Marketing Analytics. 3 credits.**
Marketing analytics is a systemic approach to harnessing data/information to drive effective marketing decision making. The objective of this course is to equip you with the tools required to address fundamental marketing decision problems using a data-driven approach. It will train students to view the marketing processes and relationships systemically and analytically. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 720.

**Recommended Prerequisite:** Grade of B or higher in (STAT 515 or STAT 554), AND GBUS 738 or equivalent.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Business Analytics.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GBUS 721: Marketing Research. 3 credits.**
Develops skills to plan and implement effective marketing research studies. Topics include research design, data collection, statistical analysis, and use of database systems. Offers perspective on how managers can use market data to develop successful product or service strategies. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 721.

**Recommended Prerequisite:** Grade of B or higher in (STAT 515 or STAT 554).

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Business Analytics.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GBUS 738: Data Mining for Business Analytics. 3 credits.**
Examines how data warehouses and data mining are used to help businesses successfully gather, structure, analyze, understand and act on relevant data, both operational and contextual. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 738.

**Recommended Prerequisite:** B or higher in (STAT 515 or STAT 554).

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Business Data Analytics.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**GBUS 739: Advanced Data Mining for Business Analytics.** 3 credits.
This course covers business analytics using advanced data mining methods for the purposes of developing predictive models and forecasting. The course will develop the concept of feature selection to identify what dimensions to best use for constructing decision making models. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 739.

**Recommended Prerequisite:** Grade of B or higher in (STAT 515 or STAT 554); AND a B or higher in GBUS 738 or equivalent.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Business Analytics.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**GBUS 744: Fraud Examination.** 3 credits.
Introduces strategies and techniques for fraud prevention and detection. Focuses on financial fraud such as bribery, contract rigging and kickbacks, embezzlement, fraudulent financial reporting, payroll fraud, and misappropriation of inventory and other assets. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MBA 744.

**Recommended Prerequisite:** B or higher in (STAT 515 or STAT 554).

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Business Analytics.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**Health (HEAL)**

**100 Level Courses**

**HEAL 110: Personal Health.** 3 credits.
Focuses on individual health improvement by studying mental/emotional well-being, fitness, nutrition, drug abuse prevention, consumerism, safety and other topics. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**HEAL 200: School and Community Safety.** 1 credit.
Focuses on safety in home, school, road, work, and community settings. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HEAL 220: Dimensions of Mental Health.** 3 credits.
Focuses on integrating behavioral and sociocultural factors in studying mental health. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HEAL 230: Introduction to Health Behavior.** 3 credits.
Introduces health behavior in context of health psychology. Explores various theoretical models to understand health, illness and sick-role behaviors. Studies health and disease from a biopsychosocial perspective. Examines means of preventing and treating health problems. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences, Encore: Well-Being (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HEAL 250: Introduction to School Health.** 3 credits.
Presents an overview of school health programs. Focuses on the content of health education in K-12 schools and provides an introduction to health education instruction. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**Greek (GREE)**

**100 Level Courses**

**GREE 150: Classical Greek I.** 3 credits.
Addresses linguistic, semantic, and cultural aspects. Covers basic structure and vocabulary, its place among other world languages and its unique role in development of modern thought. Notes: Lectures, discussions supplemented by web-posted material. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**GREE 160: Classical Greek II.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 170: Classical Greek III.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 180: Classical Greek IV.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 190: Classical Greek V.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 200: Classical Greek VI.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 210: Classical Greek VII.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 220: Classical Greek VIII.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 230: Classical Greek IX.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 240: Classical Greek X.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 250: Classical Greek XI.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.

**GREE 260: Classical Greek XII.** 3 credits.
Expands proficiency, refines grasp of morphology and syntax, and fosters greater command of vocabulary. Introduces selected original passages from Greek classical authors. Notes: Lectures, discussions supplemented by Modern & Classical Languages (p. 424). Limited to three attempts.
**300 Level Courses**

**HEAL 310: Drugs and Health.** 3 credits. 
Analyzes drug use, with emphasis on positive aspects, and presents alternatives to drug misuse and abuse. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**HEAL 325: Health Aspects of Human Sexuality.** 3 credits. 

**HEAL 327: Women's Health.** 3 credits. 
Examines health issues unique to women, including health care, food and exercise, reproductive and gynecological issues, chronic diseases, and issues of violence. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**HEAL 331: Men's Health.** 3 credits. 
Examines socio-cultural influences on men's development and expression of health beliefs and practices. Explores health issues specific to men. Analyzes research literature on interventions to improve men's health. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**HEAL 350: Interventions for Populations and Communities at Risk.** 3 credits. 
Identifies culturally, physically, emotionally, mentally, and demographically diverse populations and communities at risk. Covers implications for developing innovative programs and role of HFRR interventions. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**HEAL 351: Relationship Health.** 3 credits. 

**400 Level Courses**

**HEAL 405: Teaching Methods in Health Education (K-12).** 3 credits. 
Covers content, methodology, and resource materials in teaching health education for physical education teaching majors. Notes: Field experience required. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**HEAL 480: Special Topics.** 1-3 credits. 
Presents selected health issues or problems. Focuses on applying information to education programs. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 3 credits.

**HEAL 499: Independent Study in Health Education.** 1-3 credits. 
Studies problem area in health education research, theory, or practice under faculty direction. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**HEAL 499: Independent Study in Health Education.** 1-3 credits. 
Recommended Prerequisite: Completion of 90 credits. 
Registration Restrictions: 
Enrollment is limited to students with a major in Health Education, Health, Fitness Rec Resrcs, Individualized Study, Nursing, Physical Education (Special), Physical Education or Parks, Rec, Leisure Studies.
500 Level Courses

HEAL 516: Program Development and Resources in Health Education. 3 credits.
Open to licensed and provisionally licensed health and physical education teachers in the commonwealth of Virginia and students in ASTL physical education program. Focuses on program development, health content, methodology, and resources for teaching preK-12 health education. Notes: Distance learning course. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: Licensed and provisionally licensed health and physical education teachers in the Commonwealth of Virginia, and students in the Physical Education masters program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Health Administration and Policy (HAP)

200 Level Courses

HAP 201: Health Professions Careers. 3 credits.
Acquaints students early in their college education with a variety of health professions careers. Provides overview of the health care system, and identifies the current supply and demand for health care professionals. Presents information about educational and licensing requirements as well as expected salaries. Defines professionalism and outlines the principal rights and responsibilities of being a health care professional. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 202: Medical Terminology. 3 credits.
Prepares students with a basic understanding of medical terminology needed to work in a wide variety of healthcare environments. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 290: Lifestyle Management. 3 credits.
In this introductory course on practical application of Bayesian causal modeling techniques and Statistical Process Control tools, students make resolutions and analyze their progress toward goal achievement. Each student maintains a diary and analyses it using Bayesian causal modeling techniques to understand the constraints and causes leading to their success and failures. Students analyze their pattern of success using Statistical Process Control tools and engage cyclical assessment of their self improvements. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

HAP 301: Health Care Delivery in the United States. 3 credits.
Introduces history and current structure and function of U.S. health care delivery. Explores components and subsystems of health care, and sociopolitical (public and private) context that shapes system and affects access to health care and delivery of health services. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 308: Public Health Informatics. 3 credits.
Provides students with a basic understanding of public health Informatics and its applications. Students will understand the basic technological tools and building blocks needed to utilize these tools in to improve their personal and professional productivity. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 301.

Recommended Prerequisite: HAP 301.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 309: Healthcare Accounting. 3 credits.
Introduces basic concepts, standards, practices and terminology underlying financial and managerial accounting as applied in health-care organizations. Key concepts include accounting principles and conventions; financial reporting; valuations of assets; analysis, interpretation, and communication of financial information; the management of costs and profitability; and the use of spreadsheets and other tools. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Recommended Prerequisite: HAP 301.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 310: Healthcare Ethics. 3 credits.
Introduces current ethical ideas and issues in healthcare and the healthcare system. Case studies require students to apply critical thinking in ethical decision making situations encountered by healthcare professionals. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Recommended Prerequisite: HAP 301.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
HAP 312: Healthcare Law. 3 credits. 
Introduces students to the legal environment in healthcare with emphasis on laws and regulations of routine importance to healthcare managers in the areas of labor, contracts, real estate, medical malpractice, general business, and intellectual property. Offered by Health Administration & Policy (p. 257). Limited to three attempts. 
Recommended Prerequisite: HAP 301. 
Schedule Type: Lecture 
Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84) 
HAP 318: Introduction to IT Methods for Healthcare. 3 credits. 
Reviews computer hardware and software with applications in healthcare. Covers basic features of operating systems (Windows and Linux), reviews use of basic office applications and introduces their advanced features. Introduces advanced tools to access and analyze healthcare data. Introduces basic programming concepts. Offered by Health Administration & Policy (p. 257). Limited to three attempts. 
Recommended Prerequisite: IT 103 or IT 104 or equivalent. 
Schedule Type: Laboratory, Lecture 
Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84) 
HAP 360: Introduction to Health Information Systems. 3 credits. 
An introduction to basic information management in health care service organizations. Provides an overview of health information systems for selected administrative functions and clinical care services, including electronic data interchange for billing and claims management, institutional approaches to ensuring data security and privacy, and information management and decision support for managers and clinicians. Offered by Health Administration & Policy (p. 257). Limited to three attempts. 
Schedule Type: Lecture 
Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84) 
HAP 361: Health Databases. 3 credits. 
Introduces students to the design and use of various health and healthcare databases, and provides hands-on experience with database design and use. Reviews database management systems. Examines the application of databases for both clinical and managerial purposes. Offered by Health Administration & Policy (p. 257). Limited to three attempts. 
Recommended Prerequisite: HAP 360 
Schedule Type: Lecture 
Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84) 
HAP 392: Human Resources Management in Healthcare. 3 credits. 
Introduces students to the major issues, laws, administrative processes, procedures, and psychological factors to be considered when developing a human resources management system in healthcare organizations. Offered by Health Administration & Policy (p. 257). Limited to three attempts. 
Recommended Prerequisite: HAP 301. 
Schedule Type: Lecture 
Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84) 
HAP 395: Health Care Finance. 3 credits. 
Introduces finance in health care organizations. Reviews issues in reimbursement structures, regulatory mechanisms, cost control, and related factors affecting financial management of health service organizations including financial decision support skills. Offered by Health Administration & Policy (p. 257). Limited to three attempts. 
Registration Restrictions: 
Required Prerequisite: HAP 309C. 
C Requires minimum grade of C. 
Schedule Type: Lecture 
Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84) 
HAP 396: Strategic Health Management and Planning. 3 credits. 
Introduces past and present interventions that affect supply and demand for health care at community, state, regional, and national levels. Presents health planning and regulatory entities, and discusses strategic and program planning in context of current economic and market conditions. Offered by Health Administration & Policy (p. 257). Limited to three attempts. 
Recommended Prerequisite: HAP 301 
Schedule Type: Lecture 
Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84) 
400 Level Courses 
HAP 403: Assisted Living/Senior Housing Management and Philosophy. 3 credits. 
Overview of growth of assisted living industry, its role in health care continuum, current or proposed regulatory environments, and differences between assisted living and other forms of senior health care and senior living services. Specific instruction provided in philosophy and day-to-day management of assisted-living communities, including resident care, operations, finance and budgeting, human resources and staffing, and successful marketing and community relations. Also examines industry future, including cutting-edge programs and technologies, and approaches to creating next generation of assisted-living services. 
Offered by Health Administration & Policy (p. 257). Limited to three attempts. 
Schedule Type: Lecture 
Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84) 
HAP 404: Senior Housing Sales and Marketing. 3 credits. 
Introduction and analysis of sales and marketing practices within senior housing environments, including but not limited to Active Adult (55+), assisted living, Alzheimer’s assisted living, and Continuing Care
Retirement Communities (CCRC’s). Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Recommended Prerequisite:** HAP 301.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 408: Societal and Health Related Needs of the Aging Population.** 3 credits.
Introduces students to the social, medical, emotional, and cognitive supports available to older adults in the United States. Provides an overview of societal and health related needs relating to aging. Exposes students to aging services available to older adults. Explores the physical and emotional needs of the elderly. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Recommended Prerequisite:** HAP 309.

**Registration Restrictions:**
**Required Prerequisite:** HAP 301 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 410: Introduction to Health/Medical Practice Management.** 3 credits.
An introductory course in the leadership and management of ambulatory health service practices and small provider organizations. Content covers a variety of health/medical practice management functions, including administrative systems, operations and strategies for effective management of quality, efficiency and business performance (contracts and marketing), and human resources. Trends in practice integration and affiliations with multiprovider groups and larger enterprises will be covered. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Recommended Prerequisite:** HAP 408.

**Registration Restrictions:**
**Required Prerequisite:** HAP 416 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 411: Introduction to Revenue Cycle Management.** 3 credits.
Introduces the revenue cycle process and its role within a clinical practice setting to support the overall financial health of the organization. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Recommended Prerequisite:** HAP 411.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 416: Leadership and Management of Health Systems I.** 3 credits.
Introduces theoretical concepts and their application to the leadership and management of effective health care organizations. Explores the structure and function of health-related organizations and selected administrative and operational issues in program development and service design, emphasizing strategies for effective performance management, decision making, and communication. Offered by Health Administration & Policy (p. 257). Limited to three attempts. Equivalent to NURS 436.

**Recommended Prerequisite:** Complete all 300-level course requirements.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 417: Leadership and Management of Health Systems II.** 3 credits.
Explores challenges to providing effective leadership and management of health care organizations and systems of care related to operational issues such as personnel management and labor relations, information management, conflict and goal alignment, financial management, accountability, and quality and safety improvement. Focuses on identification of management skills, technology, and strategy that influence optimal performance and communication between clinicians, administrative staff, and managers. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** HAP 416 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 425: Health Economics and Policy.** 3 credits.
An introduction to the role of economics in health care policy. Concepts used by economists to analyze health outcomes, health behaviors, health care markets, health insurance markets, and the role of government. Concepts are linked to current health policy debates, Relevance and limits of the health economics approach to analyzing health issues are discussed. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** HAP 301 C and ECON 103 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 430: Process Improvement in Healthcare Organizations.** 3 credits.
Introduction to the process of quality management in health care organizations. Principles of quality management and guidelines for implementing total quality in health care are discussed, and differentiation between quality assurance and quality management presented. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** HAP 301 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 436: Electronic Health Data in Process Improvement.** 3 credits.
Focuses on using electronic health records (EHRs) to improve health care processes. Compares means and rates of clinical & managerial processes. Uses EHRs in risk-adjusted statistical process control.
Uses Excel to analyze data on patient satisfaction, wait time, mortality/morbidity, and cost of care. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 440: Mobile Health.** 3 credits.
Introduces emerging technologies used in Mobile Health (mHealth). Students will examine the impact and potential of mobile devices on health. Students will conceptualize and design health apps that incorporate evidence-based guidelines and capitalize on the mobility, portability, and input and output capabilities of smartphones and tablets. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 442: Introduction to Health Care Politics and Policy.** 3 credits.
Reviews health care system issues and trends, and economic concepts, ways to understand the critical role of public health policy and the policy-making process in the United States. Identifies the major political institutions and policy processes that shape health policy. Examines the past and present health policy and its impact on changes in the ability of patients to access health services, the practice of health sciences professionals, and the quality and process of care. Explores the role of politics at both the federal and state government in health policy-making and critical aspects of the U.S. health system are compared to those of other countries. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** HAP 361.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 445: Introduction to Health Services Research.** 3 credits.
An introductory course for undergraduate students in understanding the basic methods of interdisciplinary health services research and program evaluation in health systems and policy. Emphasis is placed on understanding, assessing and using relevant findings from health services research. The course covers a variety of topics related to policy, management, and program evaluation in health delivery systems. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** HAP 301 C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 449: Health Data Standards and Interoperability.** 3 credits.
Introduction to prevailing and emerging data standards applicable in health information technology. Students will learn about standard-making organizations, such as HL7 and Healthcare Information Technology Standards Panel (HITSP), and their standardization processes. The structure of and relationship between standard terminologies applicable in healthcare, such as International Classification of Diseases (ICD-10-CM), Logical Observation Identifiers Names and Codes (LOINC) and Systematized Nomenclature of Medicine–Clinical Terms (SNOMED-CT), will be explained. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Recommended Prerequisite:** HAP 301 or permission of instructor.
HAP 361.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 460: Information Technology Project Management.** 3 credits.
Identifies methods and skills for managing health care information technology (IT) projects. Students learn tools such as critical path analysis, resource management, crashing projects, vendor selection, quality assessment, and risk analysis. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Recommended Prerequisite:** HAP 360.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 461: Internet and Web Technology Applications for Healthcare.** 3 credits.
Introduces students to the major applications of Internet and Web technology in healthcare. Two major applications are studied: online promotion/marketing for consumer-oriented health web sites, and online Personal Health Records (PHR). Students will learn about Search Engine marketing and the practical skill of creating an online health marketing/promotion campaign. They also will learn to create and manage PHR. The technological challenges such as reliability, privacy, security and organizational barriers to adoption are discussed. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Recommended Prerequisite:** HAP 360.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HAP 462: Privacy and Security in Health Informatics.** 3 credits.
Health information security and privacy issues in the current healthcare system. Evaluates methods to achieve privacy and security. Discusses the important role of sound security policies and procedures; looks into technical solutions and non-technical solutions for achieving privacy and security. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

**Recommended Prerequisite:** HAP 360.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
HAP 464: Electronic Health Record Configuration and Data Analysis. 3 credits.
Covers basic features and functionalities of an electronic health record (EHR). Introduces methods to access and analyze patient data from an EHR. Provides students with hands-on experience on EHR systems. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 465: Integration of Professional Skills and Issues. 3 credits.
Assists students in synthesizing the varied dimensions of their roles as health professionals in a global society. Provides opportunities to examine issues in health care through reflection on the natural and behavioral sciences, humanities and other prerequisite coursework. Selected topics examined through writing, presentation, reading and discussion. (Writing intensive course). Offered by Health Administration & Policy (p. 257). Limited to three attempts. Equivalent to NURS 465.

Mason Core: Synthesis (p. 142)

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: HAP 301 C and ENGH 302 C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major in Health Administration.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 467: Advanced Information Technology Project Management. 3 credits.
Teaches project management methods and techniques with focus on health IT projects. Covers knowledge, skills, and abilities associated with certification (Certified Associate in Project Management). Notes: Certification is not provided in this course. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Recommended Prerequisite: HAP 460 or HAP 417 or equivalent.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 489: Pre-Internship Seminar. 3 credits.
Provides students with guidance and preparation for engaging in the internship. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Mason Core: Capstone (p. 142)

Recommended Prerequisite: Senior standing.

Registration Restrictions:
Required Prerequisite: HAP 301 C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 494: Special Topics in Health Administration and Policy. 3 credits.
Selected topics analyzing specialized areas in health administration and policy. Notes: Content varies. Lecture, seminar, laboratory, and workshops. Offered by Health Administration & Policy (p. 257). May be repeated within the term for a maximum 12 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 498: Health Administration Internship. 4 credits.
Provides variety of applied management experiences in a health systems or related organization (field agency), under the direction of a HAP faculty member and a preceptor in the field. Students integrate and apply critical-thinking, project-planning, and management and communication skills in the internship experience and toward completion of an approved internship project. Notes: Taken in last semester of studies. Capstone course involves a two-hour weekly seminar and a 12-hour internship in a health-related organization. Offered by Health Administration & Policy (p. 257). Limited to three attempts.

Mason Core: Capstone (p. 142)

Registration Restrictions:
Required Prerequisite: HAP 489.

Enrollment limited to students with a class of Senior Plus or Senior.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HAP 499: Independent Study in Health Administration and Policy. 1-6 credits.
Provides individual study of a particular problem area in health administration and policy research, theory development, or education under the direction of faculty. Offered by Health Administration & Policy (p. 257). May be repeated within the term for a maximum 6 credits.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

HAP 594: Special Topics in Health Care. 3 credits.
Selected topics analyzing specialized areas in health care. Notes: Content varies. Lecture, seminar, laboratory, and workshops. Offered by Health Administration & Policy (p. 257). May be repeated within the degree for a maximum 6 credits. Equivalent to GCH 594.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
600 Level Courses

HAP 601: E-Commerce and On-line Marketing for Health Services. 3 credits.
Explores development of online health services; organization of online businesses; online marketing, financial, and clinical transactions; and venture capital and the IPO process. Explores creating and maintaining web pages and databases. Reviews literature on effect of computer services on patient care and health care organizations. Also reviews examples of both successful and bankrupt technology firms in health care. Student groups draft business plan and develop early version of service proposal. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 602: Statistics in Health Services Management. 3 credits.
Focuses on descriptive and inferential statistics with applications of various statistical techniques to health services management. Topics include sampling, measures of central tendency and dispersion, probability distributions, hypothesis testing, analysis of variance, correlation, linear regression, and chi-square analysis. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 609: Comparative International Health Systems. 3 credits.
Uses Roemer’s Model of Health Systems to examine resource allocation, management, and health outcomes in the United States and around the globe. The structure and functioning of national health systems based on geographic location and governance in developing and developed countries (democracies, monarchies, and communist nations). Resource allocation across the continuum of nations and relationship to national health needs, health status, and longevity are examined. Notes: An online course in comparative international health care systems. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
industry case studies applied to a group project. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 640: Current Issues in Health Policy.** 3 credits.
Introduces students to current health policy issues, the public policy process, and their influence on the organization and financing of health care. Attention is given to the 1) roles of key players in health policy formulation and implementation, and 2) public policy responses to major issues such as disparities and uninsured coverage, cost-containment, and quality of care. Differing perspectives on reforming health care are debated. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 645: Introduction to Health Services Research.** 3 credits.
An introductory course in the basic methods of interdisciplinary health services research and program evaluation in health systems and policy. The course covers topics related to policy, management, and program effect and evaluation within health delivery systems, including research design, existing data systems, measurement of quality and basic cost benefit, and effectiveness analysis. Offered by Health Administration & Policy (p. 257). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** HAP 678.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 647: Regulatory Requirements for Health Care Systems.** 3 credits.
Helps health care professionals understand link between infrastructures of organization and regulatory and accreditation processes for health care organizations. Covers major accrediting agencies and their roles, accreditation principles, and survey process. Focuses on hospitals with reference to ambulatory care, managed care organizations, rehabilitation centers, laboratories, and home health and long-term care facilities. Emphasizes requirements of Joint Commission on Accreditation of Health Care Organization and regulations mandated by Health Care Finance Administration. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 652: Essentials of Health Insurance and Managed Care.** 3 credits.
Focuses on the health insurance and managed care private sector. Topics include moral hazard; the history of private benefits plans; types of health plans; provider network management; provider payment; medical and quality management; health plan operations including marketing/sales, claims, member services, IT, finance; and relevant health policy, and federal and state laws and regulations affecting private health plans. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 661: Policy Development and Analysis for Community Health Programs.** 3 credits.
Prepares students to critically analyze issues and develop skills pertinent to effective policy development for community and family public health programs. Explores what constitutes a vulnerable population and examines current government programs and policies supporting these programs for such populations. Recent case examples ground students to effective policy development for community and family public health programs. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 670: Introduction to Health Informatics. 3 credits.
Examines applications of information technology in healthcare. Considers a wide range of technology applications – from enterprise application systems to EHR (Electronic Health Records), to current trends in information technology and related regulatory initiatives. Examines how these technologies enable the healthcare industry to manage information and knowledge resources most effectively and deliver superior services to its customers. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Recommended Corequisite: HAP 678 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 671: Health Care Databases. 3 credits.
Introduces students to design and query of health databases. Provides hands-on experience with design, maintain and make queries of databases. Explores uses of health record systems. Includes review and analysis of databases and database management systems. Examines application of databases to clinical and business transaction. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 672: Health Data: Vocabulary and Standards. 3 credits.
Explores the challenges and possible solutions to ensure the interoperability between health information systems, representation of health data using standardized vocabulary and standards of communication. Covers topics such as data standards and semantics, policy, and theory and practice of standardization. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Recommended Prerequisite: HAP 618 or HAP 671 or permission of instructor

Recommended Corequisite: HAP 678 or permission of instructor

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 675: Project in Health Data Analysis. 1-4 credits.
Focuses on analysis of data from electronic health records. Includes instruction on preparation of data including (a) removing inaccurate information, (b) organizing the timing of events/variables, (c) summarizing time-based variables. Students will work on real data obtained by them from a practicum through an employer or real data supplied by instructor. Students will complete a literature review, describe methods used, present results, and discuss findings. Offered by Health Administration & Policy (p. 257). May be repeated within the term for a maximum 4 credits.

Recommended Prerequisite: HAP 361 and HAP 602 or equivalent statistics and database courses.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 678: Introduction to the U.S. Health System. 3 credits.
Explores the U.S. healthcare system focusing on health system development, key influences, accessibility, financing, changing components and the effects of the system on patients, providers, financiers, government, insurers, and society. The role of population health management and public health is explored, including the impact of social, cultural, economic, and environmental factors on health care systems and practices. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 680: Applied Public Health Leadership and Management. 3 credits.
Survey course in leadership, management, and planning applied to public health systems. Students apply theoretical knowledge from a variety of disciplines relevant to development and implementation of public health policy, regulatory directives, public health program planning and management (including human resources and financial management), and the design and evaluation of public health services/functions.
Content includes strategies for ensuring access to essential public health services and use of evaluation and monitoring systems to ensure the safety, efficiency, and effectiveness of local public health programs/systems. Course emphasizes leadership, communication, systems thinking, data-driven decision making, and ethical practice in public health systems. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 686: Quality Improvement in Health Services. 3 credits.
Examines how quality in healthcare is measured and controlled in order to improve processes and outcomes. Demonstrates how interdisciplinary teams analyze quality by applying a variety of quantitative methods (such as statistical process control, histograms, and Pareto charts); and qualitative methods (such as root cause analysis, affinity diagrams, nominal group technique, and flow charts). Analyzes performance improvement techniques designed to improve processes. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 690: Independent Study. 1-3 credits.
In-depth studies of selected area of health science theory, research, or practice under direction of faculty. Offered by Health Administration & Policy (p. 257). May be repeated within the degree.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

HAP 700: Introduction to Health Informatics. 3 credits.
Examines applications of information technology in healthcare. Considers a wide range of technology applications – from enterprise application systems to EHR (Electronic Health Records), to current trends in information technology and related regulatory initiatives. Examines how these technologies enable the healthcare industry to manage information and knowledge resources most effectively and deliver superior services to its customers. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Recommended Corequisite: HAP 678 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 701: Health Data: Vocabulary and Standards. 3 credits.
Explores the challenges of representing health care data using standardized vocabulary in health information systems. Topics include data standards and semantics, policy, and theory and practice of standardization. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Recommended Corequisite: HAP 678, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 702: Managerial Accounting in Health Care. 3 credits.
Examines the controllership function of health care organizations and systems (for-profit and not-for-profit) with emphasis on policy formulation and evaluation of performance, including cost methods and systems, measurement criteria, and managerial planning, methods, and techniques. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Recommended Prerequisite: Graduate-level statistics course.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 703: Financial Management in Health Systems. 3 credits.
Examines tools and methods of financial management in healthcare organizations and systems with emphasis on allocation and use of funds. Analyzes costs and constraints of alternative source of funds,
and applies financial decision instruments and effect on operational management and market value of entity. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Recommended Prerequisite:** Graduate-level statistics course.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

HAP 704: *Contemporary Issues in Health Systems Management.* 3 credits.
Analyzes the challenges confronting healthcare leaders in a new era characterized by economic incentives and changing relationships between providers, payers and purchasers, new delivery models and payment mechanisms, and advances in clinical integration, information technology, and quality improvement. Explores leadership strategies required for achieving financial stability while delivering greater value. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

HAP 705: *Strategic Management and Marketing in Health Care.* 3 credits.
Explores the role of strategic planning in healthcare organizations and the process by which they formulate, implement, and evaluate strategic decisions. Reviews the contemporary issues and trends impacting the strategic imperatives for healthcare organizations, including ways in which organizations evaluate and address the health needs of the communities they serve. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Explores emerging structures for financing and delivery of comprehensive health services in integrated health systems. Covers successful development and management of alliances, provider hospital organizations, and managed care systems with emphasis on strategies for vertical integration, community partnering, contract negotiation, governance, and management of antitrust situations. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Examines how people are managed within health care organizations to achieve performance consistent with the organization's strategic objectives. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

HAP 708: *Quantitative Methods in Health Care Management.* 3 credits.
Presents a framework for decision making in health care management. Covers epidemiological, statistical and decision modeling tools commonly used in health care management. Includes measures of risk, forecasting, decision trees and statistical quality control. Students use Excel to analyze data sets related to the application of these techniques in assessing health care related problems. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: HAP 602B.

Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

HAP 709: *Health Care Databases.* 3 credits.
Introduces design and use of health and medical databases, providing hands-on experience. Explores uses of medical record systems. Includes review and analysis of databases and database management systems. Examines application of databases to clinical and managerial transaction. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

HAP 711: *Quality Improvement in Health Services.* 2 credits.
Examines how quality in healthcare is measured and controlled in order to improve processes and outcomes. Demonstrates how interdisciplinary
teams analyze quality by applying a variety of quantitative methods (such as statistical process control, histograms, and Pareto charts); and qualitative methods (such as root cause analysis, affinity diagrams, nominal group technique, and flow charts). Analyzes performance improvement techniques designed to improve processes. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 712: Topics in Public Policy. 3 credits.

Presents selected topics current in public policy related to health care and health care administration. Offered by Health Administration & Policy (p. 257). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 713: Project Management in Health Information Technology. 3 credits.

Applies body of knowledge in project management to the implementation of information technology and systems in healthcare organizations. Examines how tasks such as needs assessment, project planning, project cost analysis, risk management, and management of personnel are readily included in the use of health information systems. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 715: Health Economics. 3 credits.

Uses economic tools to illuminate the healthcare delivery and financing systems in the US. Explores the production of and demand for health, health care, and health insurance, and how incentives affect choices. Focuses on the US but also draws examples from other countries, since health economics principles apply everywhere, even though values, resources, priorities and constraints vary. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
HAP 720: Health Data Integration. 3 credits.
Students learn to manipulate large databases, create link table queries, write SQL application programs, understand sources of data conflicts, and identify methods of integrating ODBC databases with legacy data. Covers data warehousing, methods of analyzing large databases, including Bayesian belief networks and machine learning in healthcare context. Features semester long data integration group project. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 721: Project in Data Analysis. 1-4 credits.
Focuses on analysis of data from electronic health records. Includes instruction on preparation of data including (a) removing inaccurate information, (b) organizing the timing of events/variables, (c) summarizing time-based variables. Students work on real data obtained by them from a practicum through an employer or real data supplied by instructor. Students must complete a literature review, describe methods used, present results, and discuss findings. Offered by Health Administration & Policy (p. 257). May be repeated within the degree for a maximum 4 credits.

Recommended Prerequisite: HAP 361 and HAP 602 or equivalent statistics and database courses.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 725: Statistical Process Control in Healthcare. 3 credits.
Provides students with hands-on experience with data from electronic health records. Introduces students to causal analysis of observational data, including propensity scoring and stratification. Provides students with access to simulated data from electronic health records. Exposes students to trends that influence the quality management system and drivers for change, including measures used by CMS to strengthen value based payment. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 740: Management of Health Information Systems. 3 credits.
Introduces health and medical information systems with emphasis on systems analysis and design to support managerial and clinical communications and decision making. Explores trends and innovations in information technology and systems, focusing on managerial oversight of health and medical information systems. Explores contemporary management strategies for information systems personnel. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 742: Health Policy Development and Analysis. 3 credits.
Provides an overview of the core elements of a health policy analysis, including problem definition, background, policy options, and recommendations. Explores the policymaking process, key stakeholders, and types of analytic frameworks used in the development of U.S. healthcare policy. Students will apply key concepts and frameworks to analyze a health policy issue and clearly communicate information in written assignments and oral presentations. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 745: Health Care Security Policy. 3 credits.
Focuses on health security and privacy policy and compliance issues. Students will develop policies for the type of threats faced by facilities. The legal and business policies for facility, personnel, travel, information, and patient security will be discussed. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 746: Health Policy Leadership.** 3 credits.
Examines leadership strategies to influence health policy-making from a community stewardship and interest group advocacy perspective. Students will develop an understanding of how health and socio-economic issues affect the development, implementation and change of health policy, appreciate the complexity of engaging the public policy process, and selectively employ strategies to influence politics and the policy making process. Offered by Health Administration & Policy (p. 257). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 750: Legal Issues in Health Administration.** 3 credits.
Examines legal issues facing the healthcare industry. Prepares health professionals to understand legal principles, statutes, regulations, and case law related to managing health care organizations and health professionals’ practice. Students are provided with practical knowledge of health law and its application to actual work experience. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 752: Advanced Health Information Systems.** 3 credits.
Provides in-depth analyses of health information systems including Electronic Health Records, Personal Health Records, and Decision Support Systems. Analyzes architectural trends, workflow redesign, and implementation strategies. Describes new trends in computing technologies and infrastructure in health applications. Laboratory time provides learning experience and practical skills in various allied situations. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Recommended Prerequisite:** HAP 700 and HAP 709, or permission by the instructor or Program Coordinator.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 760: Philosophy of Science in Health Services Research.** 3 credits.
An introductory course on the theory and philosophy of science and humanism that relate to the design and conduct of health services research. The course examines selected theories on the nature of reality (ontology), the justification of knowledge claims (epistemology), and how knowledge is constructed (methodology) in design and analysis of health services research. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Recommended Prerequisite:** Admission to a doctoral program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 764: Health Policy and Government Payment Systems for Health Care Services.** 3 credits.
Examines the rationale for government intervention in provider payment and explores the current policy issues and politics of major government provider payment systems, including Medicare and Medicaid, and examines options for managing these programs more effectively. The course will "follow the money" as it flows through government and provider payment systems, model potential changes in such systems, and identify policies for improving the operation of these programs and payment systems. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 770: Medical Decision Making and Decision Support Systems.** 3 credits.
Introduces the complex subject of medical decision making. Examines systematic approaches to decision making. Explores principles governing the design, application, and maintenance of clinical decision support systems. Laboratory time provides learning experience in various applied situations. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Recommended Prerequisite:** HAP 701 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 777: Health Data Visualization.** 3 credits.
Introduces the principles and techniques of data visualization with special focus on applications in healthcare. Students will learn practical skills to make visually appealing graphics on web browsers to present their data using a publicly available JavaScript library D3 (Data-driven
This course is graded on the Graduate Regular scale. (p. 84)

HAP 793: Final Project in Applied Health Policy. 3 credits.
Provides students experience in executing an approved written research project related to a public health policy issue. Students will demonstrate skills learned in the MSHMP program. Projects require students to understand different positions related to a particular policy issue, to assess existing evidence and research related to the policy issue, and to formulate additional research questions. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 799: Master's Thesis. 1-6 credits.
Provides students with skills to develop their research proposal, conduct their research, and complete their thesis in a relevant field of study. Offered by Health Administration & Policy (p. 257). May be repeated within the degree.

Recommended Prerequisite: Admission to one of the master's programs in the department and permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

HAP 819: Advanced Statistics in Health Services Research II. 3 credits.
Covers principles and methods of advanced statistical data analysis and inference with applications in health services research. Emphasizes the use and application of various data analysis techniques, including multivariate statistics, regression and longitudinal data analysis. Use of statistical software STATA demonstrates the application of statistical techniques in analyzing health related data sets. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Recommended Prerequisite: HAP 719.

Registration Restrictions: HAP 719.
Schedule Type: Research
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HAP 823: Comparative Effectiveness Analysis using Observational Data. 3 credits.
Applies linear and logistic regression to analysis of comparative cost and effectiveness using massive data in electronic health records. Emphasizes (1) ridge regression and (2) propensity scores. Covers the following topics: (1) counterfactual framework and assumptions, (2) data preprocessing, classification and prediction (decision trees, attributional rules, Bayesian networks), constructive induction, cluster and association analysis, knowledge representation and visualization, and an overview of practical tools for discovering knowledge from medical data. These topics are illustrated by examples of practical applications in health care. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

Recommended Prerequisite: Graduate-level statistics course.
Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship
Grading:
balancing, (3) matching or weighting, and (4) sensitivity analysis. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Recommended Prerequisite:** HAP 719.

**Registration Restrictions:** Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 835: Causal Inference in Health Services Research.** 3 credits.
Discusses the nature of causation and alternative means of inferring causal relationships. Included are experimentation, matching, instrumental variables, conditioning, and mechanism in network models. Covers a broad range of methodological considerations that emerge in identifying causal effects. The focus is less on analysis of data and more on considerations of causal inference in non-randomized study design. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Registration Restrictions:** Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 868: Advanced Research Seminar in Health Policy Analysis.** 3 credits.
Seminar on advanced research methods that analyzes theoretical and analytic foundations to critique health services research and health policy analysis. Students synthesize, integrate, and apply theoretical knowledge and advanced skills relevant to health services research, policy analysis, and program evolution. Notes: Limited to doctoral students having completed core courses in statistics and research design, or permission of instructor. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Recommended Prerequisite:** HAP 703 or equivalent or permission of instructor.

**Registration Restrictions:** Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 880: Advanced Health Data Mining.** 3 credits.
Provides the knowledge and skills needed to analyze health data using modern tools. Describes analytics of administrative and clinical data. Covers concepts and tools for big data analytics and NoSQL data analytics. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Recommended Prerequisite:** HAP 719, HAP 780, or permission of instructor.

**Registration Restrictions:** Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**900 Level Courses**

**HAP 925: Advanced Methods in Qualitative Research for Health Care.** 3 credits.
Builds upon the foundation of qualitative research in health care. Designed to develop skills in data generation techniques; data analysis using NVivo and text analysis software, including narrative and intentions analysis; application of standards for qualitative research; and utilization of various styles for qualitative reports and research proposals. The course also reviews mixed methods designs for research studies. Offered by Health Administration & Policy (p. 257). May not be repeated for credit.

**Recommended Prerequisite:** NURS 920 or HAP 835

**Registration Restrictions:** Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HAP 998: Doctoral Dissertation Proposal.** 1-6 credits.
An independent study for HAP doctoral students resulting in the development of a doctoral dissertation proposal. Includes development of the research problem, study methods, data analysis and literature review. Notes: The course must be supervised by a HAP faculty member qualified to serve as a dissertation chair. Offered by Health Administration & Policy (p. 257). May be repeated within the degree for a maximum 36 credits.

**Recommended Prerequisite:** Advancement to candidacy.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**HAP 999: Doctoral Dissertation.** 1-9 credits.
Under faculty direction, develop dissertation proposal and complete the dissertation. Offered by Health Administration & Policy (p. 257). May be repeated within the degree for a maximum 25 credits.

**Recommended Prerequisite:** All courses in the PhD program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)
Health and Human Services (HHS)

400 Level Courses

HHS 432: Healthy Aging. 3 credits. Offers a broad perspective of normal aging in the older adult, and the impact of chronic disease and psychosocial and cultural factors on the aging process. Offered by Health and Human Services (p. 244). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HHS 480: Research Internship in Health and Human Services. 3 credits. The student works as a member of a team engaged in health and human services research and attends a bi-weekly research seminar. Under direction of the course seminar leader and the faculty research mentor, the student will acquire selected research skills and develop introductory research writing and presentation skills. Offered by Health and Human Services (p. 244). Limited to three attempts.

Recommended Prerequisite: Open only to CHHS majors or students who have completed CHSS minor or certificate courses.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HHS 491: Foundations of Clinical Research. 1 credit. Provides students with fundamental concepts and basic analytic methods pertaining to the design, analysis, and interpretation of clinical research. Outlines the research process by introducing the components of research - from beginning a literature search, to designing an experiment, to selecting appropriate outcome measures, and collecting data. Offered by Health and Human Services (p. 244). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HHS 492: RS: Internship in Clinical Research. 3 credits. Provides students with experiential learning in a research laboratory that focuses on clinical health research. Students are matched with a clinical research supervisor that provides both research and professional development mentorship. Through this opportunity, students enhance their research, critical thinking, problem-solving and presentation skills. An application must be submitted in the semester prior to enrollment in the course. During the semester prior to entry, students may be asked to acquire certain competencies/certifications in order to fully participate at their research site (e.g., human subjects research protections training, lab safety, certification, HIPAA training). Offered by Health and Human Services (p. 244). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: Course is open to honors college students only.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

HHS 597: Approaches to Quantitative Data Analysis in Health Care Research. 3 credits. Examine univariate and bivariate statistical procedures appropriate for analyzing quantitative health care research data. Includes selecting, applying, and interpreting data analysis procedures. Offered by Health and Human Services (p. 244). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

HHS 646: Social Gerontology. 3 credits. Examines physical, psychological, sociological, cultural, spiritual, and economic aspects of aging and explores the challenges of service delivery to older persons. Considers the impact of aging populations on the social structure, economy, demography, and social policy of society and identifies social and cultural forces that influence older persons and their families, with special regard to caregiving, institutionalization, and social roles in retirement. Offered by Health and Human Services (p. 244). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HHS 648: Aging and Health. 3 credits. Provides an overview of normal aging and explores factors that affect health and well being in older adults; demonstrates strategies for maintaining health and managing chronic illness in older adults; examines common misconceptions about aging and healthcare issues; and explores the process of normal aging and the presentation of common health conditions in older adults. Offered by Health and Human Services (p. 244). May not be repeated for credit. Equivalent to NURS 648.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 700 Level Courses

**HHS 702: Health Promotion and Disease Prevention.** 3 credits.
Prepares students to address health needs of individuals or groups through health promotion and disease prevention. Emphasis is placed on research evidence and motivational interviewing to improve healthy lifestyle, prevent disease and manage chronic conditions. Offered by Health and Human Services (p. 244). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 800 Level Courses

**HHS 810: Systematic Reviews of Healthcare Research.** 3 credits.
Applies systematic methods for evaluating current research in order to develop empirically-based decisions about the next major research questions that need to be addressed in the students' selected area of inquiry. Offered by Health and Human Services (p. 244). May not be repeated for credit.

**Recommended Prerequisite:** Master's degree in nursing, social work or health-related discipline.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HEBR 101: Elementary Hebrew I.** 3 credits.
Designed for students with no knowledge of Hebrew. Introduction including grammar, vocabulary, oral skills, listening comprehension, and reading. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HEBR 102: Elementary Hebrew II.** 3 credits.
Continuation of HEBR 101. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** HEBR 101 or equivalent.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HEBR 150: Introduction to Biblical Hebrew.** 3 credits.
Introduces basic vocabulary, grammar, and development of reading skills with introduction to religion and culture of ancient Israel that produced the Hebrew Bible/Old Testament. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HEBR 160: Readings in Biblical Hebrew.** 3 credits.
Continuation of HEBR 150 to increase students' proficiency in vocabulary and understanding of morphology and syntax. Selected passages from Hebrew Bible read; students introduced to text formation and analysis. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** HEBR 150 or equivalent.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HEBR 201: Intermediate Hebrew I.** 3 credits.
Further development of skills acquired in HEBR 101 and 102, including grammar, oral expression, listening comprehension, reading, and writing.
Notes: Lab work required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** HEBR 102 or equivalent.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HEBR 202:** Intermediate Hebrew II. 3 credits.
Continuation of HEBR 201. Notes: Lab work required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** HEBR 201 or equivalent.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

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**Higher Education (HE)**

**600 Level Courses**

**HE 601:** The Community College. 3 credits.
Studies institutional character of the community college, including history, purpose, clientele, organization, finance, and social function. Studies issues currently faced by community colleges. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HE 602:** College Teaching. 3 credits.
Describes issues that affect teaching and learning and provides basic tools to use in college classroom. Teaches how to plan course, develop syllabus, promote learning among diverse students, and implement classroom assessment techniques. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HE 605:** Learning Assessment. 3 credits.
Focuses on classroom and program-level learning assessment, and describes the political and historical context for assessment. Offers hands-on practice of assessment for instructors and student affairs professionals. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in College Teaching, Education (Community College), Education, Higher Ed Administration or Interdisciplinary Studies.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HE 606:** Diversity in Higher Education. 3 credits.
Explores instructional interactions and communication strategies for diverse learner populations. Includes discussion of sociological, behavioral, and cognitive theory on culture. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HE 606:** Research Designs in Higher Education. 3 credits.
Provides an introduction to higher education research methodologies, analysis, and decision-making through introduction of basics of research design including problem identification, literature review, method selection, data collection and analysis, application, writing, and ethics. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
HE 621: Higher Education in the United States. 3 credits.
History of higher education from colonial period to the present. Examines
philosophic, political, social, and economic forces that have influenced
development. Reviews today's issues and challenges. Offered by Higher
Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 624: Finance and Fiscal Management in Higher Education. 3 credits.
Overview of higher education finance and fiscal management. Offered by
Higher Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 641: Introduction to Helping Skills. 3 credits.
Focuses on helping skills that assist others in reflecting on concerns,
considers possible causes of problems, and contemplates options and
strategies for problem solving. Introduces students to and practices
basic helping skills. Explores ethical issues surrounding helping skills and
determining when to refer students to professional counselors. Offered
by Higher Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 643: Multicultural Helping Skills. 3 credits.
Sensitizes students to and promotes an understanding of multiple
cultures and encourages students to examine their own attitudes toward
various groups, explore their own identities, and to acquire expertise
in the use of helping skills with various populations. Emphasizes the
learning of approaches and the application of techniques that facilitate
effective multicultural communication in higher education. Offered by
Higher Education Program (p. 539). May not be repeated for credit.

Recommended Prerequisite: CTCH 641 or HE 641.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 644: Management and Administration of Student Services in Higher
Education. 3 credits.
Focuses on development and organization of student personnel
programs and services in institutions of higher learning. Covers
philosophy, methods, and techniques. Offered by Higher Education
Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 645: The Contemporary College Student. 3 credits.
Analyzes changing demographics, barriers, and developmental issues
facing college students. Studies impact of college environment on
student development, and interaction between students of varying
subcultures and the environment. Examines technology issues and
their impact. Offered by Higher Education Program (p. 539). May not be
repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 646: Student Development Theory. 3 credits.
Addresses developmental issues facing credits, including adult
students; factors that affect development; and the need to work with
individuals, groups, and organizations within the campus community to
establish conducive learning environments. Application of psychosocial,
cognitive development, identity, and person-environment interaction theories are considered in depth. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 685: Practicum. 3 credits.
Experiential learning that could include supervised on-the-job experience, academic service learning, community outreach, or research field work in approved college or university setting or public agency involved in higher education. Develops skills applicable to higher education. Approval of practicum coordinator needed one semester before registration. Notes: Minimum 150 hours of work and participation in internship seminar. Offered by Higher Education Program (p. 539). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission to certificate or MAIS/Higher Education program; approval of advisor and practicum coordinator; 9 credits of core requirements.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

HE 701: Higher Education Law. 3 credits.
Introduces students to laws and legal issues that impact higher education and establishes a general familiarity with higher education law. Uses a case study approach to teach students to recognize when a legal issue presents itself in situations involving students, faculty, or administration. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 702: Contemporary and Critical Theories in Higher Education. 3 credits.
Uses the philosophical and sociological grounding of higher education research to provide guidance on decision-making in ambiguous and complex higher education organizations. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 703: Higher Education in the Digital Age. 3 credits.
Higher education is undergoing rapid transformation in the 21st century, due in large part to emerging digital technologies. This course explores the changing landscape, including face-to-face and online teaching and learning, student affairs, infrastructure, and administration. Combining reading, writing, viewing, and hands-on learning, students examine issues through the content and lens appropriate for their discipline and learning goals. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 704: The Scholarship of Teaching and Learning. 3 credits.
Overview of scholarship on teaching and learning in higher education. Focuses on ways students learn, how learning can be improved, and different methods of conducting research into teaching and learning. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 705: Access and Social Justice. 3 credits.
Examines the inequitable structural systems that produce unequal access to higher education. Explores the meaning of social justice in higher education, and emphasizes policy, administrative processes, and educational practices. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:  
This course is graded on the Graduate Regular scale. (p. 84)

**HE 710: Leadership in Higher Education.** 3 credits.  
Focusing on the leadership of higher education and the role leaders play in institutional transformation, this course explores the complex social and political environments and the current and future trends of higher education. This focus occurs through the foundational grounding of leadership theory and research. Students will be challenged to employ multiple perspectives of leadership in higher education. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**HE 711: Policy Analysis in Higher Education.** 3 credits.  
Intended as a toolkit for the understanding and creation of evidence-based analysis of public policy issues at all levels of governance, this course examines examples of policy research and analysis prompted from discussion around higher education policy issues. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**  
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**HE 712: Advanced Institutional and Program Assessment in Higher Education.** 3 credits.  
Examines educational assessment and evaluation practices and methods. Students critique and design an evaluation study and an evaluation report. Reviews ethical issues and impact of assessment and evaluation for students, employees, and programs. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**  
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**HE 713: The Internationalization of Higher Education.** 3 credits.  
Explores the internationalization of higher education through various lenses including administration, student services, curriculum integration, study abroad, and branch campus development. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**  
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**HE 722: Organization and Administration in Higher Education.** 3 credits.  
Provides concepts of organization and administration in contemporary institutions from macro to micro perspectives. Studies theory and practices of the organization as it relates to governance, structure, and management of the institution. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Registration Restrictions:**  
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**HE 785: Research Apprentice.** 3 credits.  
Participation in research or assessment study under the supervision of a faculty member. Written report required. Offered by Higher Education Program (p. 539). May not be repeated for credit.

**Recommended Prerequisite:** HE 610.

**Registration Restrictions:**  
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**HE 792: Special Topics in Higher Education.** 1-3 credits.  
Covers current topics in higher education. Notes: May be repeated when topic is different. Offered by Higher Education Program (p. 539). May be repeated within the degree.

**Recommended Prerequisite:** Admission to doctoral program or permission of instructor.

**Registration Restrictions:**  
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**HE 797: Higher Education Portfolio.** 3 credits.  
This capstone course guides students in the creation of a learning and professional practice portfolio. The portfolio is a compilation of academic work and other forms of educational evidence assembled for the purpose of (1) evaluating coursework quality, learning progress, and academic achievement; and (2) determining whether students have met learning standards or other academic requirements for courses and the program. Students gain permission to enroll in the HE 797 Portfolio course their last semester, and the instructor of the course guides and evaluates the portfolio. Offered by Higher Education Program (p. 539). May be repeated within the degree for a maximum 6 credits.
Recommended Prerequisite: Students must be in the last semester of their course work.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 798: Higher Education Project. 1-3 credits.
Under the supervision of a faculty advisor and project evaluation committee, students create a project from existing literature. Project must be a deliverable with a practical application related to student development and higher education. Offered by Higher Education Program (p. 539). May be repeated within the degree. Equivalent to MAIS 798.

Recommended Prerequisite: HE 610.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Original research related to student development or higher education. Offered by Higher Education Program (p. 539). May be repeated within the degree. Equivalent to MAIS 799.

Recommended Prerequisite: HE 610, HE 785.

Registration Restrictions:
Enrollment is limited to students with a major in Education (Community College). Enrollment is limited to Graduate level students.

800 Level Courses

HE 805: Research Methodologies in Higher Education. 3 credits.
Provides a review of sophisticated research methodologies commonly used in higher education including collection and analysis procedures, ethics, and decision-making. Alignment of research questions, method selection, data collection and analysis procedures, implications, and writing are examined. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Recommended Prerequisite: HE 805.

Registration Restrictions:
Enrollment is limited to students with a major in Education (Community College). Enrollment is limited to students in a Doctor of Arts or Doctor of Philosophy degrees.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 806: Qualitative Methods in Higher Education Research. 3 credits.
Examines the philosophical and epistemological foundations that guide qualitative inquiry. Trustworthy data collection methods and means of analysis are stressed and practiced. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Recommended Prerequisite: HE 805.

Registration Restrictions:
Enrollment is limited to students with a major in Education (Community College). Enrollment is limited to Graduate level students.

HE 807: Quantitative Methods in Higher Education Research. 3 credits.
Develops ability to conduct applications of quantitative methods in higher education research. Reinforces skills acquired in previous research courses. Learning occurs through reading assignments, hands-on experience in using a computer program for data analysis, and application activities. Students will identify and report on quantitative methods used in published research, analyze data, and provide written results. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Recommended Prerequisite: HE 805.

Registration Restrictions:
Enrollment is limited to students with a major in Education (Community College). Enrollment is limited to students in a Doctor of Arts or Doctor of Philosophy degrees.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HE 821: History of Higher Education in the United States. 3 credits.
Key issues and moments in the history of higher education are examined as a way to understand current structures, cultures, policies, and purposes. Historical perspective will also be used to consider the near future of higher education. Students will examine current trends and possible futures for a specific topic by doing historical research on the issue. Offered by Higher Education Program (p. 539). May not be repeated for credit.

Recommended Prerequisite: HE 821.

Registration Restrictions:
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HE 885:** *Doctoral Internship in College Teaching and Administration.* 3 credits.
Supervised internship at a community college, four-year college or university, or nonteaching higher-education setting such as a government agency or administrative office. Develops skills applicable to college teaching or higher education administration or policy. Students must complete a minimum of 180 hours of work and participate in internship seminar. Notes: Students must contact the program at least one semester before enrolling. Offered by Higher Education Program (p. 539). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Admission to doctoral program; approval of advisor and internship coordinator, 18 credits of graduate course work.

**Registration Restrictions:**
Enrollment is limited to students with a major in College Teaching, Education (Community College) or Education.

Enrollment is limited to Graduate level students.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**HE 897:** *Directed Reading in Higher Education.* 1-6 credits.
Independent reading on topic agreed on by student and instructor. Offered by Higher Education Program (p. 539). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to the doctoral program and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Education (Community College) or Education.

Enrollment is limited to Graduate level students.

Enrollment limited to students with a concentration in Community College Teaching or Higher Education.

Enrollment is limited to students in a Doctor of Arts, Doctor of Philosophy or Master of Interdisciplinary Studies degrees.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**HE 998:** *Doctoral Dissertation Proposal.* 1-3 credits.
Contact program for permission to register. Work on research proposal that forms basis for doctoral dissertation. Offered by Higher Education Program (p. 539). May be repeated within the degree.

**Recommended Prerequisite:** Completion of all course work and qualifying exams.

**Registration Restrictions:**
Enrollment is limited to students with a major in Education (Community College).

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Arts degree.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**HE 999:** *Doctoral Dissertation.* 1-12 credits.
Doctoral dissertation research and writing under direction of dissertation committee. Offered by Higher Education Program (p. 539). May be repeated within the degree.

**Recommended Prerequisite:** HE 998 and appointed dissertation committee.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to students with a major in Education (Community College).

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Arts degree.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**History (HIST)**

**100 Level Courses**

**HIST 100:** *History of Western Civilization.* 3 credits.
History of Western civilization from ancient Mediterranean origins through medieval and modern development of Europe to contemporary world. Notes: Students who take HIST 100 may not receive credit for HIST 101 or HIST 102. Offered by History & Art History (p. 392). Limited to three attempts. Equivalent to HIST 101, HIST 102.

**Mason Core:** Western Civilization (p. 142)

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 101:** *Foundations of Western Civilization.* 3 credits.
Evolution of Western culture from ancient Mediterranean world to formation of modern Europe in 17th century. Notes: Students may not receive credit for HIST 101 if they have taken HIST 100. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 102:** *Development of Western Civilization.* 3 credits.
History of Western institutions and ideas from 17th century to the present. Notes: Students may not receive credit for HIST 102 if they have
taken HIST 100. Offered by History & Art History (p. 392). Limited to three attempts. Equivalent to HIST 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 121: Formation of the American Republic. 3 credits.
Social, political, economic, and intellectual growth of American institutions from colonization through Reconstruction. Notes: Students may not receive credit for HIST 121 if they have taken HIST 120. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 122: Development of Modern America. 3 credits.
History of the United States since 1877. Notes: Students may not receive credit for HIST 122 if they have taken HIST 120. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 125: Introduction to World History. 3 credits.
Analytical approach to world history overview that surveys major features of principal existing civilizations of world, as originally formed and as altered by key global processes including forces of modernity. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Western Civilization (p. 142)

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

HIST 202: Freshman/Sophomore Seminar in Global History. 3 credits.

Recommended Prerequisite: Freshman or sophomore standing.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 251: Survey of East Asian History. 3 credits.
Surveys history of China and Japan from prehistoric times to ca. 1600. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 252: Survey of East Asian History. 3 credits.
Surveys history of China and Japan from early modern times (ca. 1600) to present. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 261: Survey of African History. 3 credits.
Focuses on the sub-Saharan region and examines evolving systems of kinship power, spirituality, and slavery. Explores the interactions between Africans and global influences from the religions of the book and colonialism to the politics of development and continuities and changes in production. HIST 261 surveys African history from the earliest times to 1800. HIST 262 surveys African history from 1800 to the present. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 262: Survey of African History. 3 credits.
Focuses on the sub-Saharan region and examines evolving systems of kinship power, spirituality, and slavery. Explores the interactions between Africans and global influences from the religions of the book and colonialism to the politics of development and continuities and changes in production. HIST 261 surveys African history from the earliest times to 1800. HIST 262 surveys African history from 1800 to the present. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 271: Survey of Latin American History. 3 credits.
Surveys colonial era to 1825. Emphasizes interactions of United States, Latin America. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 272: Survey of Latin American History.** 3 credits.
Surveys development of independent Latin America since 1825. Emphasizes interactions of United States, Latin America. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 281: Survey of Middle Eastern Civilization.** 3 credits.
Survey of Middle Eastern history from rise of Islam to present, emphasizing processes that led to emergence of economic, cultural, social, and political institutions that characterize region today. Surveys period from rise of Islam in 570 to medieval period (ca. 1258) Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 282: Survey of Middle Eastern Civilization.** 3 credits.
Survey of Middle Eastern history from rise of Islam to present, emphasizing processes that led to emergence of economic, cultural, social, and political institutions that characterize region today. Surveys medieval period to present. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**HIST 300: Introduction to Historical Method.** 3 credits.
Introduces research skills and methods, as well as historical interpretation, culminating in written and oral presentations. Notes: Topics vary according to instructor. History majors strongly urged to take HIST 300 as soon as possible after reaching 30 credits. Grade of C or better is required to graduate with BA in history. Students may repeat HIST 300 only with permission from the Department of History and Art History and repetitions are limited. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Synthesis (p. 142)

**Specialized Designation:** Scholarly Inquiry, Writing Intensive in Major

**Recommended Prerequisite:** History majors with 30 credits or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in History.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 301: Classical Greece.** 3 credits.
Political, social, economic, and cultural history of classical Greece from development of the city-state through 5th century. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 302: Classical Rome.** 3 credits.
Political, social, economic, and cultural history of classical Rome from founding of the city through fall of Roman republic. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 304: Western Europe in the Middle Ages.** 3 credits.
Survey of development of European society from collapse of Roman rule in 5th century to advent of Black Death in 14th century. Emphasizes political, social, cultural, and intellectual growth of society that developed from Roman, Catholic, and Germanic roots. Offered by History & Art History (p. 392). Limited to three attempts.

**Recommended Prerequisite:** 6 hours of history or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 305: The Renaissance.** 3 credits.
Survey considering Renaissance as phenomenon rather than chronological period. Emphasizes growth of humanism in Italy in 14th and 15th centuries, development of new political concepts, and laicization of society. Includes transmission of these developments to transalpine Europe in late 15th and 16th centuries. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 306: The Reformation.** 3 credits.
Late medieval ecclesiastical conditions and reform movements, late scholasticism, Protestant Reformation, Catholic Reformation, dynastic rivalries, and religious wars. Concludes with Peace of Westphalia. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
HIST 307: *Old Regime and Revolutionary Europe*. 3 credits.
Political, social, economic, and cultural history of Europe from 1648 to 1815. Crisis of authority, consolidation of the state, absolutism, colonial expansion, the Scientific Revolution and the Enlightenment, and the French Revolution and Napoleon. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 308: *Nineteenth-Century Europe*. 3 credits.
History of Europe from Congress of Vienna to outbreak of World War I. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Two world wars, the Great Depression, and political and cultural revolutions transformed Europe as never before. Explores causes and consequences of these tumultuous events, and concludes with consideration of reconstruction that caps period. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 310: *Rise of Russia*. 3 credits.
Political, social, cultural development of Russia from early times to the end of the 19th century. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 312: *Nationalism in Eastern Europe*. 3 credits.
Examines history of modern Eastern Europe from mid-19th century through collapse of communist regimes in 1989, and includes focus on Yugoslavia wars of 1990s. Nationalism provides organizing theme; topic approached through literature, political, social, cultural, and new media sources. Class sessions emphasize discussion of central issues and sources. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 313: *History of Germany*. 3 credits.
Political, diplomatic, economic, social, and cultural development of Germany from dissolution of Holy Roman Empire to present. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 314: *History of Germany*. 3 credits.
History of Britain from mid-18th century to present. Focuses on social, political, and economic transformations of industrialization; culture of 19th-century industrial society; problems of late 19th-century economic competition and imperialism; creation of welfare state; and experience of post-World War II political, social, and economic realignments. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Recommended Prerequisite:** 6 hours of history or permission of instructor.

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 325: *Stalinism*. 3 credits.
Examines Joseph Stalin and Stalinism as a political, economic, social, and cultural system, with a focus on the period from Lenin's death in 1924 through Stalin's death in 1953. Explores the history of rapid industrialization, collectivization of agriculture, famine, terror, war, Cold War, and human suffering in the Soviet Union and Eastern Europe. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 326: *Modern Russia and the Soviet Union*. 3 credits.
Russia and the Soviet Union from the early 20th century to the present. Focuses on the Russian Revolution and the political, social, cultural, and economic developments of the Soviet and post-Soviet eras. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 327: *The Soviet Union and Russia Since World War II*. 3 credits.
Analyzes the Soviet Union, the Cold War "enemy" of the United States, from victory in World War II under Joseph Stalin through collapse in 1991. Studies the fifteen independent countries that emerged from the Soviet collapse, including Russia, the Baltic States, Ukraine, Belarus, Moldova, Central Asia, and the Caucasus, which continue to influence world politics and culture today. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 328: *Russia and the Soviet Union*. 3 credits.
Examines the fifteen independent countries that emerged from the Soviet collapse, including Russia, the Baltic States, Ukraine, Belarus, Moldova, Central Asia, and the Caucasus, which continue to influence world politics and culture today. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 334: American Scriptures. 3 credits.
In this course, students will analyze texts that Americans have treated as “scripture.” Students will read texts that present themselves as scripture, such as selections from the Book of Mormon and a Holy Sacred and Divine Roll and Book (a Shaker text). They will also read texts that have attained a sort of canonicity within American culture, such as the Declaration of Independence and Martin Luther King Jr.’s “Letter from Birmingham Jail.” Students will thus gain more than a valuable familiarity with a variety of American religious traditions. They will also reflect on the way that, even in a digital age, texts continue to shape American identity. Offered by History & Art History (p. 392). Limited to three attempts. Equivalent to RELI 334.

Mason Core: Literature (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 335: The African American Experience in the United States: African Background to 1885. 3 credits.
History of African American experience in United States including African origins; trans-Atlantic slave trade; development of slavery in colonial, revolutionary, and ante-bellum periods; abolitionist movements; and African American participation in Civil War and during Reconstruction. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 336: The African American Experience in the United States: Reconstruction to the Present. 3 credits.
History of African American life in post-slavery America, and rise and consequences of racial segregation in 19th and 20th centuries. Examines African American response to continued racial inequality and repression. Covers great migration, urbanization, black nationalism, and civil rights era, as well as contemporary debates about race. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 337: Race and Gender in American Sports. 3 credits.
Examines how ideas about race and gender have affected sports in America from late 19th century to the 1980s. Will also consider how athletes and sporting activities have shaped American racial and gender paradigms. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 338: History of College Athletics. 3 credits.
Examines America’s unique blend of higher education and sports from 1870s to modern collaborations between college athletic programs and America’s media outlets. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 339: History of Baseball. 3 credits.
Examines development of baseball in U.S. context of labor, intellectual, economic and political events including racial segregation. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 340: Basketball and the American Experience. 3 credits.
Explores history of basketball in the United States since the late 1800s. Examines how basketball reflects and informs attitudes toward race, ethnicity, gender, and national identity. Possible topics include YMCA movement, Jews in basketball, racial segregation, growth of college basketball, international politics, evolution of black aesthetic, ABA-NBA merger, women’s basketball, Magic Johnson-Larry Bird rivalry, Michael Jordan, and basketball’s professionalization, commercialization, and globalization. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 341: History of Sport in the United States. 3 credits.
Examines the roots of American sport in colonial play and recreation, the emergence of organized and national sports, issues of gender and race in the sporting world, and the intersection of U.S. sport with events such as the Civil Rights Movement and the Cold War. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 342: History of the Olympics and the United States. 3 credits.
Traces history of American participation in the Olympics from 1896 to the present. Topics may include American leadership in the Olympic Movement, the historical legacy of American Olympic host cities, American Imperialism, Nazism, issues of race, gender and ethnicity in the Olympics, the Cold War and Olympic boycotts, and commercialization of sport. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 350: U.S. Women’s History. 3 credits.
History of women and their changing status and gender roles in American society from colonial period through ”second wave” of feminism in 1970s. Explores images and lives of women of different class, ethnic, and regional origins. Also focuses on women’s political, economic, and
legal conditions, and changes in them. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 351:** History of the Old South. 3 credits.
History of South to outbreak of Civil War, with particular emphasis on rise of sectionalism. Focuses on development of distinct Southern culture through emergence of economic, political, social, agricultural, and intellectual institutions. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 352:** The South since 1865. 3 credits.
History of South during Reconstruction, Redeemer era, and New South, with particular emphasis on race relations. Covers political, economic, cultural, and intellectual development from aftermath of war. Offered by History & Art History (p. 392). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 353:** History of Traditional China. 3 credits.
China from earliest times to period of modern Western intrusion. Development of traditional Chinese culture, society, and government. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 354:** Modern China. 3 credits.
China from 1644 to the People's Republic of China. Emphasizes coming of West and various stages of Chinese reaction. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 355:** Modern Japan. 3 credits.
Japan from Meiji Restoration to World War II. Emphasizes Japan's modernization in face of challenge. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 356:** Postwar Japan. 3 credits.
History of Japan from World War II to present. Examines Japanese experience of several key moments: Japan's defeat in Pacific War, reconstruction during U.S. occupation, rise to economic prominence during 1960s and 1970s, and cultural and international identity crisis during 1980s and 1990s. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 357:** Post-1949 China. 3 credits.
Puts People's Republic of CHINA (PRC) into historical context by assessing legacies of China's socialist revolution (1949-1976) and post-socialist reforms (1978-present). Explores revolutionary heritage of the Chinese Communist Party, goals and agendas of China's socialist state, ideologies and policies shaping urban and rural development, individual agency and responses to revolutionary mass mobilization and market reforms. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 358:** Modern Iraq. 3 credits.
Examines the politics of Iraq under the British mandate, as an independent state under the monarchy, and as a republic after the revolution of 1958, emphasizing the social composition of Iraq's people and its ruling elites. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 359:** Modern Africa. 3 credits.
Explores the historical processes that led to the rise of African kingdoms, colonialism, industrialization, resistance movements, and legalized segregation. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
HIST 364: Revolution and Radical Politics in Latin America. 3 credits.
During 20th century, Latin America has witnessed both peaceful political
movements and violent revolutions aimed at achieving social justice.
Consider several of these movements in comparative perspective:
Mexican Revolution, Arbenz government in Guatemala, Allende regime
in Chile, Cuban and Nicaraguan revolutions, and Brazilian Worker's Party.
Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)
Specialized Designation: Non-Western Culture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 365: Conquest and Colonization in Latin America. 3 credits.
Examines forms of conquest and colonization practiced by Aztec, Inca,
Spanish, and Portuguese in what is now Latin America. Includes role
of ideology and religion in imperial rule, use of warfare to create empires and
colonies, and implementation of political and economic systems to rule
subject people. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)
Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 366: Comparative Slavery. 3 credits.
Examines systems of slavery from ancient world to modern world, with
special emphasis on Atlantic slave trade and slave societies in Latin
America and Anglo America. Considers impact of slaves and slavery on
cultural, economic, and political systems in Africa and Americas from
16th to 19th centuries. Offered by History & Art History (p. 392). Limited to three attempts.

Specialized Designation: Non-Western Culture
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 367: History, Fiction, and Film in Latin America. 3 credits.
Explores modern Latin American history through different types of
texts: scholarly histories, historical novels, fictional films, documentary
films, and oral history. Explores ways these texts produce knowledge
about the past. What motivates different approaches? What counts as
evidence? How do we know what really happened? How do we decide
what mattered and what did not? Also introduces several important
episodes in 20th century Latin American history. Offered by History & Art
History (p. 392). Limited to three attempts.

Specialized Designation: Non-Western Culture
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 370: War and American Society. 3 credits.
Examines war and American society from the colonial period to the post-
Cold War era, including how military institutions, war, and the preparation
for war have affected American society, and how Americans have thought
about military service, experience war, and made peace through their
history. Special emphasis on civil-military relations and the role of war
and militarism in American culture. Offered by History & Art History
(p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 373: The Civil War and Reconstruction. 3 credits.
Analyzes the history of the American Civil War from its origins in the late
18th century to the withdrawal of federal troops from the south in 1877.
Examines the political, social, and economic issues that led to war; the
home fronts, war leadership, diplomacy, combat motivation, and grand
strategy; problems associated with reconstituting the nation's political
institutions; and the integration of millions of newly freed slaves. Offered
by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 377: The Vietnam War. 3 credits.
Covers the causes, major events, and legacies of America's Vietnam War,
including an introduction to Vietnamese history and culture, American
decisions for war, strategy and major military engagements, diplomacy
and peace talks, and the aftermath of the conflict in Vietnam and
United States. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 378: History of Aviation. 3 credits.
Examines history of aviation from origins to the present in the context of
culture, economics, politics, society, technology and war. Addresses such
topics as the emergence of aerospace engineering as a profession, the
evolution of aerospace technology and growth of the industry; military
aviation, the Space Race, and aviation art, literature, music and film.
Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 380: Uncovering the U.S. Past Through Film. 3 credits.
Examines Hollywood films as historical sources that reveal the social,
political, cultural and economic landscapes of their historical moment.
Explores the ways films participate in pressing national debates over
gender, race and ethnicity, and national security. Offered by History & Art
History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
HIST 384: Global History of Christianity. 3 credits.
Explores the history of Christianity around the world in the context of political and social structures as well as religious beliefs and practices. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 385: Humanities College to Career. 1 credit.
Focuses on career choices and effective self-presentation for soon-to-be graduating students with majors in the humanities. Explores how skills typically learned in humanities majors can be leveraged for a successful transition to post-graduation employment. Offered by History & Art History (p. 392). Limited to three attempts. Equivalent to ENGH 303, FRLN 309, PHIL 393, UNIV 420.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 386: Topics in History. 1-6 credits.
Study of historical topics of special interest. Notes: Topics announced in advance. May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 387: Topics in Global History. 3-6 credits.
Study of historical topics or periods of special interest in global, Latin American, African, Asian, or Middle Eastern history. Notes: Topics announced in advance. May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 388: Topics in European History. 3 credits.
Study of historical topics or periods of special interest. Notes: Topics announced in advance. May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 389: Topics in U.S. History. 3 credits.
Study of historical topics or periods of special interest. Notes: Topics announced in advance. May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 390: The Digital Past. 3 credits.
Teaches the fundamentals of information technology within the context of a history course. Students learn fundamentals and skills as well as how our society became so enamored of and dependent on these knowledge and information tools. Understanding a new technology requires understanding how new technologies transform the societies that embrace them. Emphasizes the use of free and open-source software whenever possible. Offered by History & Art History (p. 392). Limited to three attempts.

Mason Core: Info Tech (complete) (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 391: History of Virginia to 1800. 3 credits.
Discovery and settlement of Virginia. Colonial period with emphasis on development of representative government and race relations, Golden Age of Virginia dynasty, and coming of Civil War. Offered by History & Art History (p. 392). Limited to three attempts.

Recommended Prerequisite: 6 hours of history or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 392: History of Virginia Since 1800. 3 credits.
Decision to secede, Civil War and Reconstruction, Readjustors and Populism, disfranchisement and Constitution of 1902, and rise of Senator Harry F. Byrd. Recent developments. Offered by History & Art History (p. 392). Limited to three attempts.

Recommended Prerequisite: 6 hours of history or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 393: Topics in Film and History. 3 credits.
Study of historical periods or topics from perspective of feature films and documentaries. Notes: Topics available in advance from the department. May be repeated when topic is different. A maximum of 6 credits may be applied to the BA in history. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 6 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 394: Globalization and History. 3 credits.
Explores major events in the making of the modern world from a global perspective, with emphasis on interconnections and the historical development of power, authority, and governance. Offered by History & Art History (p. 392). Limited to three attempts.
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 395: Topics in Digital History. 3 credits.
Introduces students to issues and methods in digital history through study of a particular topic. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 15 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 396: Introduction to Public History. 3 credits.
Explores the role of historical memory in shaping public perceptions of the past, with emphasis on museums, monuments, and other public and popular culture expressions of historical information and themes. Offered by History & Art History (p. 392). Limited to three attempts.

Recommended Prerequisite: 6 hours of HIST or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 397: Topics in Public History. 3 credits.
Introduces students to issues and methods in preserving history and presenting historical information to a variety of audiences through museum exhibits, websites, public commemorations, and other means. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 9 credits.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 398: Historical Study Abroad. 1-6 credits.
Intended for participation in formally organized course offered by Center for Global Education during intersession or spring break. Notes: May be repeated with permission of department. Offered by History & Art History (p. 392). Limited to three attempts.

Recommended Prerequisite: 6 hours of history or permission of instructor.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 399: Internship. 1-9 credits.
Approved work-study programs in cooperation with specific organizations including area museums, archives, historic sites, and local, state, and federal agencies. Notes: Credit determined by department. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment is limited to students with a major in History.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

HIST 401: Colonial America. 3 credits.
Intensive study of colonial American history from European origins through Revolutionary War. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 403: Revolutionary Era in American History, 1763-1812. 3 credits.
Study of formative years of new republic from Treaty of Paris of 1783 to election of 1820. Offered by History & Art History (p. 392). Limited to three attempts.

Recommended Prerequisite: 6 hours of HIST or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 404: Jacksonian America, 1812-1854. 3 credits.
Study of age of Andrew Jackson. Emphasizes democratic institutions that emerged as dominant influences in American society. Offered by History & Art History (p. 392). Limited to three attempts.

Recommended Prerequisite: 6 hours of history or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 426: The Russian Revolution. 3 credits.
Era of revolutionary activity from 19th century to end of 1920s, with emphasis on Russian Revolutions of 1917. Explores why revolutionary situation developed; political, social, and cultural issues at stake; why it took various forms; and revolution's contribution to nature of Soviet state and post-Soviet problems. Offered by History & Art History (p. 392). Limited to three attempts.

Specialized Designation: Non-Western Culture

Recommended Prerequisite: 45 credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 436: European Society and Culture: 19th and 20th Centuries. 3 credits.
Examines major cultural trends in Europe since French Revolution. Major themes include romanticism; socialism; Marxism; and social effect of modernization, science, and societies. Offered by History & Art History (p. 392). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HIST 460: Modern Iran. 3 credits.
Modern Iran, from 1800 to present, in context of several broad themes: institutional structure of state; role of great powers in Iran and Iranian
response to economic, military, technological, and ideological challenge posed by West; interaction of religion and other ideologies and politics; economic development and impact on politics and society; and ways historians have sought to understand and interpret modern Iranian history. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 461: Arab-Israeli Conflict.** 3 credits.
Overview of history of Arab-Israeli conflict. Examines conflict from various perspectives: over land and between competing nationalisms and identities; in terms of national interests of various states, including Israelis and Palestinians as well as other Arab governments and great powers; and in terms of peace making and conflict resolution. Some knowledge of history of Middle East since World War I strongly advised. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 462: Women in Islamic Society.** 3 credits.
Surveys history of women in Islamic society from rise of Islam to present day. Examines historical processes that affected role and status of women in society, and specific topics around which issues of gender status and identity coalesced, especially in modern period. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Specialized Designation:** Non-Western Culture

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 465: The Middle East in the 20th Century.** 3 credits.
Political, social, and cultural history of Middle East since World War I. Emergence of Israel, Arab nationalism, and political and economic influence of Middle East in world affairs. Offered by History & Art History (p. 392). Limited to three attempts.

**Specialized Designation:** Non-Western Culture

**Recommended Prerequisite:** 6 hours of HIST or permission of Instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 490: Honors Directed Readings.** 3 credits.
Students must have completed at least one course in the field, or with the professor, chosen for these honors courses. Notes: The 3 reading credits should be taken before 3 research credits, though they may be taken concurrently. Either may be taken concurrently with HIST 499. Linked, individualized courses, usually given by same instructor. Involves directed readings. Offered by History & Art History (p. 392). Limited to three attempts.

**Recommended Prerequisite:** Acceptance into the departmental honors program and permission of instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 491: Honors Directed Research.** 3 credits.
Students must have completed at least one course in the field, or with the professor, chosen for these honors courses. Notes: The 3 reading credits should be taken before 3 research credits, though they may be taken concurrently. Either may be taken concurrently with HIST 499. Linked, individualized courses, usually given by same instructor. Involves in research paper related to subject of readings. Offered by History & Art History (p. 392). Limited to three attempts.

**Recommended Prerequisite:** Acceptance into the departmental honors program and permission of instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 498: Directed Readings/Research in History.** 1-3 credits.
Readings, research conducted on individual basis in consultation with instructor. Notes: Only 3 credits may be applied to credits for degree. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** History majors with 90 credits and Permission of Instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HIST 499: RS: Senior Seminar in History.** 3 credits.
Research on specialized historical topic culminating in seminar paper and oral presentation. Synthesis course; students expected to integrate knowledge and skills acquired in Mason Core courses. Notes: Subject determined by instructor. Student may present no more than 3 credits for graduation credit. Must receive passing grade to graduate with BA in history. Offered by History & Art History (p. 392). Limited to three attempts.

**Mason Core:** Synthesis (p. 142)

**Specialized Designation:** Research/Scholarship Intensive, Writing Intensive in Major

**Recommended Prerequisite:** History majors with 90 credits

**Registration Restrictions:**
**Required Prerequisites:** (HIST 300C) and (ENGL 302C, ENGL 302C, HNRS 110C or 210C).
C Requires minimum grade of C.
Enrollment is limited to students with a major in History.
Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

HIST 510: Approaches to Modern World History. 3 credits.
Introduces historical study of world beyond Europe and United States. Students read major theoretical works and case studies of particular regions. Examines imperialism, national identity, and various forms of popular resistance; familiarizes students with range of scholarly approaches, including world systems theory and subaltern studies. Offered by History & Art History (p. 392). May not be repeated for credit.

Recommended Prerequisite: Admission to graduate program in history.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 525: Problems in Latin American History. 3 credits.
Analysis of selected problems. Emphasizes reading and discussion of historical interpretations, and development of bibliography. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 535: Problems in Comparative World History. 3 credits.
Investigates selected problems in global and comparative history, covering multiple countries or world regions. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 555: Problems in Asian History. 3 credits.
Discussion of readings and historical interpretations and compilation of a comprehensive bibliography on given theme. Notes: Topics announced by instructor. May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 565: Problems in African History. 3 credits.
Analysis of selected problems in African history. Emphasis on reading and discussion of historical interpretations and development of bibliography. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 575: Approaches to Middle East and Islamic History. 3 credits.
Introduces students to the central issues and debates surrounding the study of the Middle East, Islam, and Muslim societies. Covers key methodological issues including the role of area studies vis-a-vis disciplinary approaches and debates on the politics of knowledge production and historiography. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
HIST 576: The Crusades. 3 credits.
Explores the interaction between the Christian East, the Muslim World and the Christian West. Examines primary sources (in translation) and secondary sources that render a wide spectrum of ideologies and scholarship on the crusading movement. Emphasizes cultural interaction and transmission, warfare and coexistence between competing societies from Western Europe, Byzantium, and the Middle East. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 585: Problems in Middle Eastern History. 3 credits.
Analyzes selected problem. Emphasizes reading and discussion of historical interpretations, and development of bibliography. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 598: Historical Study Abroad. 1-3 credits.
Intended for participation in formally organized course offered by the Center for Global Education. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

HIST 601: Themes in U.S. History I. 3 credits.
Survey of U.S. History prior to 1877. Designed for individuals entering the graduate program who need to strengthen preparation in area, or who seek to enhance knowledge of latest interpretations in field. Stresses factual knowledge and its interpretation. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 602: Themes in U.S. History II. 3 credits.
Continuation of HIST 601. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 605: Themes in European History I. 3 credits.
Survey of European history from 1500 to 1815. Designed for individuals entering graduate program who need to strengthen preparation in this area, or who seek to enhance knowledge of latest interpretations in field. Stresses factual knowledge and its interpretation. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 606: Themes in European History II. 3 credits.
Survey of European history from 1815 to present. Designed for individuals entering graduate program who need to strengthen preparation in this area, or who seek to enhance knowledge of latest interpretations in field. Stresses factual knowledge and its interpretation. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 610: The Study and Writing of History. 3 credits.
Methodology of the historian including techniques of research, use of documentation and other sources, development of bibliography, and synthesis of material. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 613: The Colonial Origins of American Society. 3 credits.
Examines European colonization in North America from a variety of perspectives, including cultural interaction, exchange, and conflict among Native, European, and African peoples, the political, social, economic, and cultural development of European colonies, and historical interpretations of the colonial era within national, continental, Atlantic, and world-historical frameworks. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 615: Problems in American History. 1-6 credits.
Readings and discussion of bibliographies, interpretations, and research trends in topics selected by instructor. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Specialized Designation: Green Leaf Related Course

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 616: U.S. Westward Movement. 3 credits.
Investigates continuity and change in American West. Topics include economic development, ethnicity, rural and urban life, and role of federal government. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 617: Topics in the American Civil War Era. 3 credits.
Joint project of instructor and students into various aspects of common topic in Civil War era, with emphasis on historiography and historical method. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 618: The Age of Jackson, 1815-1854. 3 credits.
Survey of social, cultural, intellectual, economic, and political changes in United States during period of rapid growth and expansion. Topics include second-party system; growth of sectionalism, nationalism, and expansionism; industrialization and spread of market economy; rise of romantic reform and evangelical religion; and growth of abolitionist and proslavery movements. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 620:** Development of the Early Republic, 1783-1815. 3 credits.
Investigates breakdown of Confederation, Constitutional Convention, and role of revolutionary ideology of republicanism. Discusses leadership and policies of republic in hostile international context. Students read extensively in monographic literature and prepare research paper. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 622:** U.S. South Since 1865. 3 credits.
Provides a graduate level survey of the major themes and trends in the historical literature on the U.S. South since 1865. Topics covered include Jim Crow, the New Deal, the long Civil Rights movement, the rise of the Sunbelt, and the changing role of the South in national politics. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 623:** Recent U.S. History, 1945 to Present. 3 credits.
Selected political, social, economic, diplomatic, and cultural forces that shaped the post-World War II American experience. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 626:** Approaches to American Culture. 3 credits.
Focuses on various approaches historians have taken to history of American culture: questions they asked, assumptions they made, disciplinary tools they used, and types of materials they analyzed. Concentrates on patterns of culture, and what they say about American past and present. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 627:** Disasters in U.S. History. 3 credits.
Examines disasters as lived experiences and cultural constructions from the seventeenth century to the industrial era. Presents so-called natural disasters as partly the result of human agency. Shows how that storms, fires, and other unfortunate events become “disasters” only when they intersect with human lives. Uses case studies of disasters to explore their larger cultural and social contexts. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 629:** The Gilded Age and Progressive Era. 3 credits.
Examines history of United States from 1877 to 1918, with attention to history of reform movements and politics, and social history of the period. Familiarizes with major issues and historical literature of the period. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
HIST 630: U.S. Women's History. 3 credits.
Wide-ranging survey of burgeoning field of women's history, emphasizing critical evaluation of sources and interpretation. Readings represent variety of approaches, which may include material culture studies, medical history, history of sexuality, political history, and social and cultural history. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 631: Era of the American Revolution. 3 credits.
Examines history and historiography of revolutionary era, with special emphasis on social and ideological interpretations of period. Includes events leading to War for Independence, war itself, and social and political effects of war on American society. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 632: Reconstruction. 3 credits.
Examines panoply of political, social, economic, and constitutional concerns from 1863 to 1880, as North and South struggled over outcome of Civil War. Addresses political institutions and power in postwar North and South, and place of former slaves in society, politics, and economy. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 633: Great Britain: Empire to Commonwealth, 1870-1970. 3 credits.
Examines rise of "new imperialism" in Great Britain from 1870 to end of empire, and gradual formation of Commonwealth of Nations. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 634: Interwar America: 1918-1939. 3 credits.
Considers issues of United States between the two world wars. Explores various ways issues complemented and contradicted each other in rich and complex historical era. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 635: Problems in European History. 3 credits.
Examines selected problems. Readings, discussions, development of bibliographies. Primary sources used where possible. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 636: Political Culture in Twentieth-Century Germany and Austria: Continuities and Discontinuities. 3 credits.
Recent interpretations of key political events of 20th century. Asks if there were fundamental continuities in structure of German and Austrian society that can be observed throughout the period under review. Offered by History & Art History (p. 392). May not be repeated for credit.

Recommended Prerequisite: Baccalaureate degree in history or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 637: Interwar America: 1918-1939. 3 credits.
Considers issues of United States between the two world wars. Explores various ways issues complemented and contradicted each other in rich and complex historical era. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 639: Society and Politics in Western Europe, 1750-1914. 3 credits.
Focuses on changes in social conditions and ramifications in political life. Attention to urbanization of workers, changes in peasantry, growth of middle classes, decline of nobility, and major political developments and expansion of liberal reforms. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 640: Metropolitan Cities of Europe in the Nineteenth and Twentieth Centuries. 3 credits.
Studies individual cities, and investigates particular cities in depth. Considers economic, social, cultural, and political features of urban life. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 642: Humanism and the Renaissance. 3 credits.
The Renaissance as a unique period in European cultural history from ca. 1350 to 1520. Concentrates on Italian situation as standard, with consideration given to manifestations of Renaissance in northern Europe, especially Germany, until Reformation. Focuses on recent studies of political, social, intellectual, and religious changes. Students write class reports and a larger bibliographic paper. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 643: Religion and Society in the Reformation Era. 3 credits.
The Reformation, ca. 1500 to 1650, was a time of major religious, intellectual, social, and political upheaval in European history. Investigates reasons for changes, and effects on European society. First half focuses on Germany, but major events throughout Europe are studied. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 644: Society and Culture in Early Modern Europe. 3 credits.
Overview of most recent historical work on social and cultural history of premodern West, ca. 1400 to 1800. Uses theoretical approaches and empirical methodologies of other disciplines, especially social anthropology, sociology, and literary theory, to shed new light on popular culture, class, manners, taste, rituals, religion, language, gender, and the state. Formulates new topics of research and poses new questions, and suggests new approach to more traditional topics such as politics, religion, and ideas. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 646: Stalinism. 3 credits.
Explores differing interpretations of the history of Stalinism. Topics include Soviet ideology, terror, Stalinist culture and society, the politicization of everyday life, industrialization and urbanization, family and gender politics, nationalities policies, and foreign policy—all of which combined to create the strange new culture that has been called Stalinism. Offered by History & Art History (p. 392). May not be repeated for credit.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 661: Religion in North America to 1870. 3 credits.
Dimensions of religion and religious experience in early America, from the beginnings of European settlement into the mid-to-late nineteenth century. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 662: U.S. Religion since 1870. 3 credits.
Dimensions of religion and religious experience in the United States, from the mid-to-late nineteenth century through recent decades. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 663: Topics in U.S. Religious History. 3 credits.
Readings and discussion of bibliographies, interpretations, and research trends in U.S. religious history. Topics selected by the instructor. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 667: Problems in Military History. 3 credits.
Readings and discussion of bibliographies, interpretations, and research trends in military history topics selected by the instructor. Notes: May be repeated when topic is different. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 677: The Vietnam War. 3 credits.
Considers the causes, major events, and historiographic debates of America’s Vietnam War including the war’s antecedents in Vietnamese history, American decisions for war, strategy and major military engagements, the American antiwar movement, and diplomacy and peace talks. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 679: War and Remembrance. 3 credits.
Considers various approaches to the study of public or collective memory as it pertains to war, in particular how people around the world have constructed memories of war and how those memories have been expressed in literature, popular culture, memorials, and commemorative activities. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
**HIST 680: Introduction to Digital Humanities.** 3 credits.
Introduces students to key concepts, tools, and practices of digital humanities. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 685: Topics in Applied History.** 3 credits.
 Addresses specific topics in applied history selected by the instructor, with emphasis on combining theoretical analysis and readings with attention to practices and skills of applied history. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 688: Topics in History and New Media.** 3 credits.
 Covers specific topics in history and new media selected by the instructor, with an emphasis on combining theoretical analysis and readings with hands-on projects and problem-solving. Notes: May be repeated for credit when topic is different. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 689: Teaching and Learning History in the Digital Age.** 3 credits.
 Examines what happens when instructors integrate new media technology into history classroom. Includes consideration of learning theory, new media theory, and an in-depth examination of state-of-the-art in practice. In the final third of semester, students produce practicum that is either working history teaching web site or concept paper for site, depending on student's degree of technical sophistication. No prior facility with information technology required. Course appropriate for graduate students working as teachers or planning career in teaching. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 690: The Administration of Archives and Manuscripts.** 3 credits.
 Introduces principles and practices of managing records and administering archival and manuscript collections, public and private. Designed for graduate students with special interest in historical sources as well as for those specializing in applied history. Offered by History & Art History (p. 392). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 691: Museum Studies.** 3 credits.
 General introduction to museums of history and museum studies in the United States, intended for interested citizen as well as for assistance to students in course and career choices. Explores development, present state, and future possibilities of U.S. Museums, with some reference to international developments. Offered by History & Art History (p. 392). May not be repeated for credit.

**Recommended Prerequisite:** 6 hours of U.S. HIST or permission of department.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
HIST 692: Historical Editing. 3 credits.
Introduces fundamentals of historical editing of documents, including microform, word processing, and computer techniques. Designed for those seeking introduction to various areas of applied history, and those intending to edit historical documents for publication. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 693: Historic Preservation. 3 credits.
General introduction to historic preservation in the United States, intended for interested citizen and to assist students in course and career choices. Explores development, present state, and future possibilities of historic preservation in the United States, with some reference to international aspects of preservation. Offered by History & Art History (p. 392). May not be repeated for credit.

Recommended Prerequisite: 6 credits of U.S. history or permission of department.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 694: Digital Public History. 3 credits.
Introduces students to the theories and methods central to doing digital public history, and develops the skills necessary for students to plan and execute their own projects. Topics include digital strategy development, developing effective digital exhibits, describing and publishing digital collections, mobile computing and curating the landscape, creating participatory history projects, and effective methods for evaluating digital public history work. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 695: History Symposium. 1-3 credits.
Subject of academic and community interest pursued through discussions and lectures by distinguished guest instructors. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 696: Clio Wired: An Introduction to History and New Media. 3 credits.
Students with limited computer competency should consult department before enrolling. Introduces changes that new media and technologies are bringing to how we research, write, present, and teach about the past. Students explore theoretical and historical issues as well as learn hands-on skills in digital history. Notes: Students with limited computer competency should consult with department before enrolling. Offered by History & Art History (p. 392). May not be repeated for credit.

Recommended Prerequisite: HIST 696 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 697: Creating History in New Media. 3 credits.
Seminar; students create original historical projects in digital media. Offered by History & Art History (p. 392). May not be repeated for credit.

Recommended Prerequisite: HIST 696 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
HIST 698: Programming in History and New Media. 3 credits. Provides students with advanced conceptual and technical skills to enhance historical practice and research in the digital arena. Focuses on in-depth analysis of theoretical frameworks and on developing proficiency in a variety of programming languages and tools for humanistic and historical research. Offered by History & Art History (p. 392). May not be repeated for credit.

Recommended Prerequisite: HIST 696, 697, or literacy in new media.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

HIST 711: Research Seminar in U.S. History. 3 credits. Research in specialized topics using primary sources. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 6 credits. Equivalent to HIST 797.

Recommended Prerequisite: HIST 610 or permission of department.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies, Education (Community College) or History.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 731: Research Seminar in European History. 3 credits. Research in specialized topics using primary sources. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 6 credits. Equivalent to HIST 797.

Recommended Prerequisite: HIST 610 or permission of department.

Registration Restrictions:
Enrollment is limited to students with a major in Cultural Studies, Education (Community College) or History.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 751: Research Seminar in Comparative World History. 3 credits. Research seminar requiring comparative research and analysis. Organized around significant topic or theme in field of world history. Notes: Topics vary from year to year. Offered by History & Art History (p. 392). May not be repeated for credit. Equivalent to HIST 797.

Recommended Prerequisite: HIST 610 or permission of department.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 790: Comprehensive Readings in U.S. History. 3 credits. Integrates past work in major field and fills gaps before comprehensive exam. After a review of graduate course work, student and instructor design reading list to round out preparation for exam. Notes: To be taken in final semester of program. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 791: Comprehensive Readings in Comparative World History. 3 credits. Integrates past work in major field and fills gaps before comprehensive exam. After a review of graduate course work, student and instructor design reading list to round out preparation for exam. Notes: To be taken in final semester of program. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

HIST 792: Comprehensive Readings in European History Since 1500. 3 credits. Integrates past work in major field and fills gaps before comprehensive exam. After review of graduate experience, student and instructor design reading list to round out preparation for exam. Notes: To be taken in final semester of program. Offered by History & Art History (p. 392). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 794:** *Internship in Applied History.* 1-6 credits.
All internship placements must be approved by the department to ensure suitability to student’s program. Introduces applied history through work and study at historical museum, site, library archive, editing project, or other approved agency. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Admission to graduate program in history and 3 hours of applied history.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

**HIST 795:** *Practicum in Digital History.* 3 credits.
Exposes students to various projects in digital history through work and study at the Center for History and New Media. All placements must be approved by CHNM to ensure the suitability of students and projects. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in History.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

**HIST 796:** *Directed Readings.* 1-6 credits.
Independent reading on topic agreed to by student and faculty member. Offered by History & Art History (p. 392). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 797:** *Research Seminar in History.* 3 credits.
Research in specialized topics using primary sources. May be repeated for credit when topic is different, or with same topic with permission of the department. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 6 credits. Equivalent to HIST 711, HIST 731, HIST 751.

**Recommended Prerequisite:** HIST 610 or permission of department.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Cultural Studies, Education (Community College) or History.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 798:** *Directed Research and Writing in History.* 3 credits.
Intended for students in department’s predoctoral track who are not writing master’s thesis. Goal is to produce substantial and original contribution to historical knowledge on model of article in scholarly journal. Offered by History & Art History (p. 392). May not be repeated for credit.

**Recommended Prerequisite:** Admission to MA program, HIST 610, and research seminar.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

Grading:
This course is graded on the Graduate Special scale. (p. 84)

**HIST 799:** *Thesis.* 1-6 credits.
Master’s thesis research and writing under direction of faculty committee. Offered by History & Art History (p. 392). May be repeated within the degree.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**HIST 801:** *New Developments in History.* 3 credits.
Survey of current developments in historical analysis and methodology. Offered by History & Art History (p. 392). May not be repeated for credit.

**Recommended Prerequisite:** Admission to doctoral program.

**Registration Restrictions:**
Enrollment limited to Graduate level students.

**Schedule Type:** Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 803:** *Doctoral Readings for Major Field.* 3 credits.
Independent readings for PhD students on topic agreed on by student and instructor, taken in preparation for completing major field exam.
Should be broadly comprehensive of field, and cover major historical themes and historiographical debates. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 20 credits.

**Recommended Prerequisite:** Admission to doctoral program.

**Registration Restrictions:**
Enrollment is limited to students with a major in History.

Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 804:** Doctoral Readings for Minor Field. 3 credits.
Independent readings for PhD students on topic agreed on by student and instructor, taken in preparation for completing minor field statement. Designed to help student master literature of subfield that is subject of field statement. Offered by History & Art History (p. 392). May be repeated within the term for a maximum 20 credits.

**Recommended Prerequisite:** Doctoral standing.

**Registration Restrictions:**
Enrollment is limited to students with a major in History.

Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**HIST 810:** History Doctoral Colloquium. 1 credit.
Introduces array of scholars and scholarship through discussions of innovative historical events, important theories, and significant methodological breakthroughs in history. Offered by History & Art History (p. 392). May not be repeated for credit.

**Recommended Prerequisite:** Doctoral standing.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**HIST 998:** Doctoral Dissertation Proposal. 1-6 credits.
Work on research proposal that forms basis for doctoral dissertation. Offered by History & Art History (p. 392). May be repeated within the degree.

**Recommended Prerequisite:** Advancement to candidacy.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**HIST 999:** Doctoral Dissertation Research. 1-12 credits.
Doctoral dissertation research and writing under direction of student’s dissertation committee. Offered by History & Art History (p. 392). May be repeated within the degree.

**Recommended Prerequisite:** Completion of HIST 998.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Honors College (HNRS)**

**100 Level Courses**

**HNRS 110:** Principles of Research and Inquiry. 4 credits.
Introduces students to a wide range of disciplinary research practices. Students learn how to pose and pursue a focused research question, identify and evaluate the multiple perspectives and approaches involved, analyze pertinent evidence, and write and speak clearly by participating in scholarly conversation. Offered by Honors College. Limited to three attempts. Equivalent to HNRS 109.

**Specialized Designation:** Scholarly Inquiry.

**Registration Restrictions:**
Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College. attributes.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HNRS 122:** Reading the Arts (Topic Varies). 3 credits.
Course topic varies by semester and section. Students will pursue focused questions or investigate specific topics in the arts by considering selected works of art and/or literature in historical, social, and formal contexts. Inquiry may be complemented by attendance and/or participation in creative activities. Offered by Honors College. Limited to three attempts.

**Registration Restrictions:**
Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College attributes.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HNRS 130: Identity, Community, and Difference (Topics Vary). 3 credits.
Course topic varies by semester and section. Students will pursue focused questions about how different conceptions of the self are understood in specific historical, social, scientific, and/or philosophical contexts. Students will understand how questions about individuality and subjectivity are asked in the humanities, arts, and/or social sciences. Offered by Honors College. Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (HNRS 110C, 302C or 108C).
C Requires minimum grade of C.

Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College attributes.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HNRS 131: Contemporary Social Issues (Topic Varies). 3 credits.
Course topic varies by semester and section. Students will pursue a focused question about contemporary social issues. Students consider and apply theories, methods and evidence from the social sciences and humanities. Topics range in focus from global to local issues involving how power and inequality shape social and institutional structures. Offered by Honors College. Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (HNRS 110C, 302C or 108C).
C Requires minimum grade of C.

Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College attributes.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

HNRS 240: Reading the Past (Topic Varies). 3 credits.
Course topic varies by semester and section. Students will pursue focused questions about a historical problem or situate a contemporary social issue in historical context. Students assess what is at stake in specific historiographic debates, consider how historical narratives are constructed and contested, and/or apply historical perspectives to analyze pressing social issues. Offered by Honors College. Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (HNRS 110C, 302C or 109C).
C Requires minimum grade of C.

Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College attributes.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HNRS 260: Society and Community Engagement Topics (Topics Vary). 3 credits.
Course topic varies by semester and section. Students pursue focused questions about a problem facing a community, society, or government. Students assess what is at stake in specific debates, consider how narratives are constructed and contested and/or apply multiple perspectives to analyze pressing social issues. Offered by Honors College. May be repeated within the degree for a maximum 6 credits. Equivalent to HNRS 230.

Recommended Prerequisite: Completion of 30 credits

Registration Restrictions:
Required Prerequisites: HNRS 109C, 110C or 302C.
C Requires minimum grade of C.

Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College attributes.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HNRS 261: Community Connection Practicum (Topics Vary). 3 credits.
Course topic varies by semester. Students will identify and address a challenge or question in response to the needs of the community. All students will contribute to and benefit from rigorous discussion among a cohort of students representing multiple disciplines. Where relevant, the conversation also includes stakeholders from the community. Students learn to account for their own and for other points of view, and adapt communication practices to reach those who do not share their backgrounds or expectations. As a result, they integrate new directions & approaches as well as alternate, divergent or contradictory perspectives or ideas. Offered by Honors College. May be repeated within the degree for a maximum 6 credits. Equivalent to HNRS 230.

Recommended Prerequisite: Completion of 30 credits

Registration Restrictions:
Required Prerequisites: HNRS 109C, 110C or 302C.
C Requires minimum grade of C.

Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College attributes.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

HNRS 300: Advanced Study Abroad. 0-6 credits.
Offers students in the Honors College the opportunity to take advanced study abroad courses that focus on in-depth research or engaged learning. Offered by Honors College. May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Grade of C or better in HNRS 109, HNRS 110, HNRS 210, or HNRS 302.
Students with a class of Freshman may not enroll.

Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College. attributes.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

HNRS 490: Undergraduate Apprenticeship. 1-3 credits.
Independent work with a faculty mentor on an inquiry-based project involving research, creative activities, or teaching and mentoring. Notes: This course is open only to undergraduates who have been accepted to the Undergraduate Apprenticeship Program. Offered by Honors College. Limited to three attempts.

Recommended Prerequisite: 45 credits and acceptance into the Undergraduate Apprenticeship Program.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Honors College (Science/Math) (HNRT)

100 Level Courses

HNRT 125: Applied Quantitative Reasoning. 3 credits.
The course will emphasize statistical reasoning and develop statistical thinking using real-life examples. The following topics will be covered: descriptive statistics, probability, probability distributions, estimation, and single sample hypothesis testing. Offered by Honors College. Limited to three attempts.

Mason Core: Quantitative Reasoning (p. 142)

Registration Restrictions:
Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College. attributes.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

HNRT 225: Applied Calculus. 3 credits.
Theory and applications of calculus for non-STEM students. Assumes a previous introductory course in calculus. Topics include exponential models in the life sciences and business, theory of integration and approaches as well as alternate, divergent or contradictory perspectives or ideas. Course deliverables include strengthened and transformed proposals, reports, and/or prototypes. Offered by Honors College. May be repeated within the degree for a maximum 6 credits. Equivalent to HNRS 353.

Registration Restrictions:
Required Prerequisites: HNRS 109\textsuperscript{C}, 110\textsuperscript{C}, 210\textsuperscript{C} or 302\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College. attributes.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
may include improper integrals, infinite series, differential equations, or probability. Offered by Honors College. Limited to three attempts.

**Registration Restrictions:**
Enrollment limited to students with the Honors College (Business), Honors College (STEM), or Honors College attributes.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

## Human Development and Family Science (HDFS)

### 200 Level Courses

**HDFS 200: Individual and Family Development.** 3 credits.
Examines how individuals and families function and develop over the lifespan. Uses a multidisciplinary approach to integrate theories of family science and human development emphasizing the role of contextual factors in contemporary families’ lives. Explores the impact of gender, socioeconomics, race/ethnicity, culture, and immigrant status on human development and family relationships. Introduces a basic model of scientific inquiry and theorizing. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HDFS 250: Family Financial Literacy and Resource Management.** 3 credits.
Introduces personal and family financial planning and resource management throughout the lifespan. Integrates theories of family finance and resource management using a multidisciplinary approach. Emphasizes role of contextual factors in contemporary families’ financial lives. Explores impact of gender, socioeconomic, race, ethnicity, and culture on family finance and resource management. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 300 Level Courses

**HDFS 300: Individual and Family Services Delivery.** 3 credits.
Overview of human services delivery with a focus on families. Explores the historical and social contexts as well as the theoretical orientations of systems that shape delivery of services to families. Examines: 1) economic and cultural barriers that prevent families from gaining access to services; 2) social policy surrounding services for families; 3) ethical and legal issues in family services. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Recommended Prerequisite:** HDFS 200.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Human Devl and Family Science.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HDFS 301: The Hospitalized Child and Family.** 3 credits.
Examines the philosophy, purposes, and concepts of Child Life Specialists. Explores developmental and psychological needs of hospitalized children, their families, and those who provide services to children. Examines the impact of illness and illness-related stressors on the dynamics of the family and strategies for coping. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Recommended Prerequisite:** HDFS 200 or permission from instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**HDFS 400: Advanced Family Processes.** 3 credits.
Examines family system dynamics and processes, with an emphasis on cultural and contextual factors that influence family functioning and well-being over the lifespan. Examines both healthy and dysfunctional family processes (including abuse, neglect, and family violence). Explores evidence-based practices and interventions that promote family health, resilience, and well-being. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Mason Core:** Synthesis (p. 142)

**Recommended Prerequisite:** HDFS 200 or permission from instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HDFS 401: Family Law and Public Policy.** 3 credits.
Examines contemporary family life and the impact of government laws, policies, and programs on families over time and across contexts and cultures. Explores the intended and unintended consequences of policies for diverse families across a variety of policy matters, from anti-poverty and social welfare policies to health and environmental policies. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** HDFS 200 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**HDFS 498: Internship and Analysis in Human Development and Family Science.** 1-6 credits.
Enables students to discuss work-related experiences within the context of developmental and family theories and research. Fosters and promotes professional development through class and small group discussions, activities, lectures, guest speakers, and practical assignments. This is the first course in a two-course series that supports students in their internship and in transitioning from student to
professional. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**

**Required Prerequisite:** HDFS 300\(^C\).  
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Human Devl and Family Science.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**HDFS 499:** Advanced Internship and Analysis in Human Development and Family Science. 1-3 credits.  
Supports students in the development and implementation of a program for staff and/or clients at internship site. Examines internship-related experiences within the context of developmental and family theories and empirical research. Contemplates and prepares for the transition to professional. This course is the second required internship experience. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**

**Required Prerequisite:** HDFS 498\(^C\).  
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Human Devl and Family Science.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Information Security Assurance (ISA)**

**500 Level Courses**

**ISA 562:** Information Security Theory and Practice. 3 credits.  
A technical introduction to the theory and practice of information security, which serves as the first security course for the MS-ISA degree, is required as a prerequisite for all subsequent ISA courses (at the 600 and 700 levels) and subsumes most topics covered by the CISSP examination. Also serves as an entry-level course available to non-ISA students, including MS-CS, MS-IS, and MS-SWE students. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** INFS 501, 515, 519, and SWE 510, or permission of instructor.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ISA 564:** Security Laboratory. 3 credits.  
Provides hands-on experience in configuring and experimenting with commodity-networked systems and security software in a live laboratory environment, with the purpose of understanding real-world security threats. Takes both offensive and defensive approaches and exposes students to a variety of real-world attacks, including viruses, worms, rootkits, and botnets. Possible mitigation and defending mechanisms, such as firewalls and intrusion detection software, also covered. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** ISA 562 and CS 531 or equivalent.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**600 Level Courses**

**ISA 650:** Security Policy. 3 credits.  
Focuses on security policy and its management for information systems having national and international connectivity. Issues include legal, international, cultural, and local factors. Students are expected to participate regularly in presenting material, in discussion of recent security issues, and by writing short papers on major current issues. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**

**Required Prerequisite:** ISA 562\(^B\).  
\(^B\) Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ISA 652:** Security Audit and Compliance Testing. 3 credits.  
Presents the fundamental concepts of the IT-security audit and control process that is being conducted in a plethora of environments, including government, the financial industry, and the healthcare industry. The goal of this course is to enable the students to structure and perform
audits based on the specifications of Sarbanes-Oxley, HIPAA, and FISMA audit programs. Covers all the CISA certification requirements in depth. Students completing the course are encouraged to attempt the certification exam on their own. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**

**Required Prerequisite:** ISA 562<sup>B-</sup>.  
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ISA 656:** Network Security. 3 credits.

An in-depth introduction to the theory and practice of network security. It assumes basic knowledge of cryptography and its applications in modern network protocols. Studies firewalls architectures and virtual private networks and provides deep coverage of widely used network security protocols such as SSL, TLS, SSH, Kerberos, IPSec, IKE, and LDAP. It covers countermeasures to distributed denial of service attacks, security of routing protocols and the Domain Name System, e-mail security and spam countermeasures, wireless security, multicast security, and trust negotiation. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**

**Required Prerequisites:** (ISA 562<sup>B-</sup> and INFS 612<sup>B-</sup>) or CS 555<sup>B-</sup>.  
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ISA 674:** Intrusion Detection. 3 credits.

Studies methodologies, techniques, and tools for monitoring events in computer system or network, with the objective of preventing and detecting unwanted process activity and recovering from malicious behavior. Topics include types of threats, host-based and network-based information sources, vulnerability analysis, denial of service, deploying and managing intrusion detection systems, passive versus active responses, and designing recovery solutions. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**

**Required Prerequisites:** ISA 564<sup>B-</sup> and 656<sup>B-</sup>.  
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**ISA 681:** Secure Software Design and Programming. 3 credits.

Theory and practice of software security, focusing in particular on some common software security risks, including buffer overflows, race conditions and random number generation, and the identification of potential threats and vulnerabilities early in the design cycle. Emphasis is on methodologies and tools for identifying and eliminating security vulnerabilities, techniques to prove the absence of vulnerabilities, and ways to avoid security holes in new software and on essential guidelines for building secure software. Explores how to design software with security in mind from the ground up and integrate analysis and risk management throughout the software life cycle. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** SWE 619.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to graduate, non-degree or undergraduate level students.

Students in a non-degree undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering College.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ISA 697: Topics in Information Security. 1-6 credits.

Special topics in information security and assurance not occurring in regular ISA sequence. Notes: May be repeated for credit when distinct offerings of course differ in subject. Offered by Computer Science (p. 1049). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to graduate, non-degree or undergraduate level students.

Students in a non-degree undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering College.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses
ISA 763: Security Protocol Analysis. 3 credits.

Teaches how to design, understand, verify, and test communication protocols so they meet their objectives of recognizing the basic components of a communication protocol, specifying security properties accurately, modeling actors and mal-actors against which a protocol ought to be secure; discussing verification and testing methods and their limitations by ensuring that the specified protocol satisfies stated security objectives in the presence of specified mal-actions; designing a medium-size protocol that satisfies a specification of requirement; using existing tools to verify and test security protocols; and testing protocols for satisfying their security objectives. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: ISA 656B.

B- Requires minimum grade of B-.

Enrollment is limited to graduate or non-degree level students.

Students in a non-degree undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering College.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ISA 764: Security Experimentation. 3 credits.

Teaches how to conduct security experimentations and empirically demonstrate, validate, and evaluate security vulnerabilities, exploits, and defense mechanisms. By the end of the course, students will gain a deeper understanding and first-hand experience on capturing packets of interests from both wired and wireless networks, and replying interested network flows and how shellcode various buffer overflows attacks, worms, spyware, rootkits, botnets, anonymous communication and traceback mechanisms work. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: ISA 564B and 656B.

B- Requires minimum grade of B-.

Enrollment is limited to graduate or non-degree level students.

Students in a non-degree undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering College.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ISA 785: Research in Digital Forensics. 3 credits.

Focuses on research-related aspects of digital forensics including open problems in digital forensics, countermeasures against digital forensics, and fundamental and practical limitations of current digital forensics techniques. Also covers currently established techniques and tools for digital forensics as well as common legal and ethical issues. Offered by Computer Science (p. 1049). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (ISA 562B and INFS 612B) or CS 555B.

B- Requires minimum grade of B-.

Enrollment is limited to graduate or non-degree level students.

Students in a non-degree undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering College.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ISA 796: Directed Readings in Information Security. 3 credits.

Research and analysis of contemporary problem in information security. Notes: Prior approval required by faculty sponsor who supervises student’s work. To register, students must complete independent study form available in department office. It must be initialed by faculty sponsor and approved by department chair. Written report also required. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Graduate standing in information security and assurance, with at least 12 prior credits in MS.
Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Research

Grading:
This course is graded on the Graduate Special scale. (p. 84)

ISA 797: Advanced Topics in Information Security. 3 credits.
Special advanced topics not occurring in regular ISA sequence. Notes: May be repeated for credit when distinct offerings of course differ in subject. Offered by Computer Science (p. 1049). May be repeated within the term for a maximum 9 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ISA 798: Research Project. 3 credits.
Research project chosen under guidance of full-time graduate faculty member, resulting in written technical report. Notes: Prior approval required by faculty sponsor who supervises student’s work. To register, students must complete independent study form available in department office. It must be initialed by faculty sponsor and approved by department chair. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: 18 credits applicable toward MS.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ISA 862: Models for Computer Security. 3 credits.
This class will be focused on current research in Security with emphasis in Network and Software Security. Notes: May be repeated with change in topic. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisite: ISA 562^B.
B: Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ISA 863: Advanced Topics in Computer Security. 3 credits.
Current topics of advanced research. Content varies depending on faculty interests, research developments, and student demand. Requires substantial student participation. May include formal models for computer security, multilevel data models, multilevel database management system architectures, secure concurrency control protocols, distributed secure system architectures, integrity models and mechanisms, security policy, and requirements analysis. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisite: ISA 562^B.
B: Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Information Systems (INFS)

500 Level Courses

INFS 501: Discrete and Logical Structures for Information Systems. 3 credits.
Study of discrete and logical structures for information systems analysis and design including basic set theory and proof techniques, propositional and predicate logic, trees and graphs, finite state machines, formal languages and their relation to automata, computability and computational complexity, formal semantics-operational, axiomatic and denotational approaches. Notes: Credit cannot be applied to a graduate degree in the Volgenau School or the BS degree in computer science. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: Completion of 6 hrs of undergraduate mathematics.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 515: Computer Organization Course and Operating Systems. 3 credits.
Computer hardware architecture concepts including number systems, machine representation of numbers, instruction set formats, addressing techniques, memory organization, internal processor structure and operation. Symbolic assembly language fundamental operating systems concepts; process synchronization and scheduling, interprocess communication, memory management, virtual memory, deadlocks, file I/O and disk management, and LINUX operating system case studies. Notes: Credit cannot be applied to a graduate degree in the Volgenau School or the BS degree in computer science. Offered by Computer Science (p. 1049). May not be repeated for credit. Equivalent to ECE 445.

Recommended Prerequisite: Undergraduate courses or equivalent knowledge in structured programming in a high-level language.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 519: Program Design and Data Structures. 3 credits.
Study of the fundamentals of data structures and algorithms applied in programming solutions to application problems. The course stresses programming in a modern high-level language. Laboratory required. Notes: Credit cannot be applied to a graduate degree in the Volgenau School or the BS degree in computer science. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: Undergraduate courses or equivalent knowledge in structured programming in a high-level language.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

600 Level Courses

INFS 612: Principles and Practices of Communication Networks. 3 credits.
Introduces principles of computer networks and applications to Internet. Discusses details of layering, protocols, performance, resource allocation, management, security and other contemporary issues related to networks. Examples of course material are protocols such as HTTP(S), DNS, TCP/IP, RSVP, SNMP; algorithms such as Dijkstra's link state routing; and security measures such as firewalls and encryption, the principles behind them and analysis of performance. Notes: No substitutions can be made for this class. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: INFS 501, 515, 519, and SWE 510, or equivalent

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 622: Information Systems Analysis and Design. 3 credits.
Integration of computing technologies, systems analysis, system design practices, and management criteria in the design of large-scale information management and decision-support systems. Includes cases, computing lab. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: INFS 501, 515, and 519, or equivalent

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 623: Web Search Engines and Recommender Systems. 3 credits.
Study of Web search engines and recommender systems. Topics to include classical information retrieval methods, Boolean retrieval systems, ranked retrieval, performance metrics, Web crawling, link analysis, overall search engine architecture, fundamentals and classification of recommender systems, learning user interests and object properties, and case studies. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: INFS 501, 515, 519, and SWE 510.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 697: Topics in Information Systems. 1-6 credits.
Presents special topics in information systems not occurring in regular INFS sequence. Notes: May be repeated for credit when distinct offerings of course differ in subject. Offered by Computer Science (p. 1049). May be repeated within the degree.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

Information systems accessible through web and Internet are becoming prevalent. Course focuses on technologies and industry standards for accessing and manipulating persistent data that are suitable for web applications. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: INFS 614.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 760: Advanced Database Management. 3 credits.
Study of advanced database models and languages, database design theory, transaction processing, recovery, concurrency, distributed database, and security and integrity. Discusses recent developments and research directions. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: INFS 614.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.
INFS 770: Knowledge Management for E-Business. 3 credits.
Addresses knowledge management (KM) from managerial, technical viewpoints in context of large organizations doing business over web and Internet. Topics include KM life cycle for knowledge creation, aggregation, dissemination, and sharing; ontology modeling, design, and engineering; role of standards such as XML, RDF, web services, and semantic web for e-business; business rules and reasoning engines; and digital rights management for e-business. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: INFS 622 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 772: Intelligent Agents and the Semantic Web. 3 credits.
Course covers the role of intelligent agents in cooperating to access, harvest, sift and winnow information and knowledge from the semantic web. Topics include agent architectures, practical reasoning and deductive agents, beliefs-desires-intentions (BDI) framework for agent reasoning, commitments and actions; Semantic Web ontology languages, description logics, reasoning and rule languages; and agent communication languages, protocols and standards. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: INFS 614

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 774: Enterprise Architecture. 3 credits.
This course presents the basic concepts and methodologies for the discipline known as Enterprise IT Architecting within a framework, structure, and methodology. Enterprise IT Architecting is a necessary step for designing and developing a system of information systems. It includes the definition of the business, work, functional, information and technical perspectives. As such, it is the enabling approach for the system development process that builds complex information systems. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: INFS 622 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 796: Directed Readings in Information Systems. 3 credits.
Research and analysis of contemporary problem in information system development. Notes: To register, students must complete independent study form available in department office. It must be initialed by faculty sponsor and approved by department chair. Prior approval required by faculty sponsor who supervises student’s work. Written report required. Offered by Computer Science (p. 1049). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: Graduate standing in information systems, with at least 12 prior credits in MS.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Research
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 797: Advanced Topics in Information Systems. 1-6 credits.
Special advanced topics not occurring in regular INFS sequence. Notes: May be repeated for credit when distinct offerings of course differ in subject. Offered by Computer Science (p. 1049). May be repeated within the degree.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INFS 798: Research Project. 3 credits.
Research project chosen under guidance of full-time graduate faculty member, resulting in written technical report. Notes: To register, students must complete independent study form available in department office. It must be initialed by faculty sponsor and approved by department chair. Prior approval required by faculty sponsor who supervises student’s work. Offered by Computer Science (p. 1049). May not be repeated for credit.
Recommended Prerequisite: 18 credits applicable toward MS.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Thesis

Grading:
This course is graded on the Graduate Special scale. (p. 84)

INF 799: Thesis. 1-6 credits.
Original or compilatory work evaluated by a committee of three faculty members. Notes: To register, students must complete independent study form available in department office. It must be initialed by faculty sponsor and approved by department chair. Offered by Computer Science (p. 1049). May be repeated within the degree.

Recommended Prerequisite: 18 credits applicable toward MS.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Information Technology (IT)

100 Level Courses

IT 102: Discrete Structures. 3 credits.
Introduces ideas of high-level program design and discrete structures. This course focuses on problem-solving and includes an introduction to programming, Boolean algebra, symbolic logic, digital circuits, set theory, combinatorics, discrete probability, mathematical induction, recursion and a basic introduction to trigonometry. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MATH 108* or 113*)
May be taken concurrently.
Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 104: Introduction to Computing. 3 credits.
This course, using both lecture and laboratory practice, introduces students to basic computer concepts in hardware, software, networking, computer security, programming, database, e-commerce, decision support systems, and current developments in 3-D printing, virtualization, and Siri-like systems. Additional lectures examine social, legal, ethical issues including privacy, intellectual property, health concerns, green computing, and accessibility. Students learn techniques to search, evaluate, validate, and cite information found online. Hands-on lab includes spreadsheets, databases, presentation, HTML 5, CSS, cybersecurity, blogs, wiki, and mobile app development. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Mason Core: Info Tech (complete) (p. 142)

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 105: IT Architecture Fundamentals. 3 credits.
Introduces students to fundamental hardware and software concepts of information technology (IT) to understand the basics of modern computing environments. Students acquire a comprehensive understanding of a computer system’s essential components, component interdependence, and binary functions, factoring in performance, data communication models, telecommunication basics, and information security. Recent trends and advancements in mobile computing, telecommunications, and IT infrastructures are discussed. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 106: Introduction to IT Problem Solving Using Computer Programming. 3 credits.
Introduces techniques for developing solutions to business problems using procedural programming as an IT resource/tool. Students apply problem solving concepts by analyzing problems and constructing, testing, and implementing algorithms using pseudocode, desk checking, and procedural programming. Topics include: program flow, control structures, programming fundamentals, and integrating program modules into a cohesive solution. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 103*, 103T, 103X, 104* or 104T) and (MATH 112*, 125* or IT 102*).
May be taken concurrently.
Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 109: Introduction to Computer Programming. 3 credits.
This foundation course is designed to teach students problem-solving skills using procedural programming that is required for the Information Technology degree program. The course accomplishes the goals through hands-on experience in the lecture class as well as through computer laboratory work. Topics to be discussed include, but are not limited to: variables, conditionals, functions, strings, iteration, testing, storage types
and files. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 103C, 103T, 103X, 104C or 104T) and (MATH 112C, 125C or IT 102 C). "May be taken concurrently. C Requires minimum grade of C."

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 191: Review of Computing Fundamentals. 1 credit.
Provides an extensive understanding of computing fundamentals. Topics include: hardware, software, networking, computer security, programming, database, e-commerce, decision support systems, and other emerging technologies. Open only to students with transfer credit comparable to IT 103 or IT 104 who have not attempted IT 191 or IT 104. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 193: Review of Multimedia and Web Design. 1 credit.
Provides an extensive understanding of concepts and techniques for designing and developing attractive and accessible websites with multimedia components. Introduces and discusses technological, aesthetic, and human factors. Open only to students with transfer credit comparable to IT 213 who have not attempted IT 193 or IT 213. Offered by Info Sciences & Technology (p. 1117). Limited to three attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 194: Review of Database Fundamentals. 1 credit.
Provides an extensive understanding of database fundamentals. Topics include: database classifications, data models with extensive coverage of the relational model, entity-relationship and extended entity relationship models, normalization, advanced data modeling, and Structured Query Language (SQL) programming. Open only to students with transfer credit comparable to IT 214 who have not attempted IT 194 or IT 214. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 196: Review of IT Problem Solving Using Computer Programming. 1 credit.
Provides an extensive understanding of techniques for developing solutions to business problems through an iterative design and implementation approach. Open only to students with transfer credit comparable to IT 106 who have not attempted IT 106 or IT 196. (MATH 112 prior completion or co-registration is strongly recommended.) Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

IT 206: Object Oriented Techniques for IT Problem Solving. 3 credits.
Introduces techniques for developing solutions to business problems using object-oriented programming as an IT resource/tool. Students apply problem solving concepts by analyzing problems and constructing, testing, and implementing object-oriented solutions using object-oriented analysis and design, data modeling, and object-oriented programming fundamentals. Topics include: Unified Modeling Language (UML), classes, inheritance, polymorphism, and exception handling. Notes: Students cannot receive credit for both IT 108 and IT 206. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 106C or 196C) and (IT 102C, MATH 112D or 125C). C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 207: Applied IT Programming. 3 credits.
Building on fundamentals of problem solving, logic and algorithm development, and procedural programming, this course further develops these skills while covering server side scripting languages and relational database connectivity. Students will use open source software tools to develop database-enabled web applications. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 106C, 109C, 196C or CS 112C) and (IT 102C, MATH 112D or 125C) and (IT 214C or 194C).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 209: Introduction to Object Oriented Programming. 3 credits.
Introduction to Object Oriented Programming (OOP) is intended for students who want to advance their basic programming skill to the next level by learning the OO programming paradigm. This course is designed to teach the benefits of OOP, including faster development,
code reusability and less code maintenance. The course accomplishes the goals through hands-on experience with a number of coding assignments. Topics include, but are not limited to: OOP design, objects, class, methods, inheritance, testing, debugging, graphical user interfaces (GUIs). Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** IT 109\(^c\) and (IT 102\(^c\), MATH 112\(^c\) or 125\(^c\)).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 213: Multimedia and Web Design.** 3 credits.

Through lecture, class demonstration, class discussion, and hands-on lab experience, introduces multimedia and web computer graphics. Focuses on development of web-enabled multimedia applications from practical business perspective. Introduces and discusses technological, aesthetic, and human factors. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 103\(^c\), 103T, 103X, 104\(^c\) or 104T).
\(^c\) Requires minimum grade of C.

Students cannot enroll who have a major in Civil and Infrastructure Engr, Computer Engineering, Computer Science, Electrical Engineering or Systems Engineering.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 214: Database Fundamentals.** 3 credits.

Covers fundamentals of relational database management systems and their use in business environments. Topics include: database classifications, data models with extensive coverage of the relational model, entity-relationship and extended entity-relationship models, normalization, advanced data modeling, and Structured Query Language (SQL) programming. Students design and implement a real-world relational database and create complex SQL queries to retrieve data from the database. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 103\(^c\), 103T, 103X, 104\(^c\) or 104T) and (IT 101\(^c\) or 105\(^c\)).
\(^c\) Requires minimum grade of C.

Students cannot enroll who have a major in Civil and Infrastructure Engr, Computer Engineering or Computer Science.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 216: Systems Analysis and Design.** 3 credits.

Students survey and apply techniques in analyzing and modeling information systems. Requirements are derived in various domains and abstracted at conceptual, logical, and physical levels. Process, data, and state modeling are applied through a project that follows a systems development lifecycle. Object modeling is explored and contrasted with data and process modeling. Individual and group modeling assignments are required. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** IT 102\(^c\) and (IT 106\(^c\), 109\(^c\), 196\(^c\) or CS 112\(^c\)) and (IT 206\(^c\), 209\(^c\) or CS 211\(^c\)) and (IT 194\(^c\) or 214\(^c\)).
\(^c\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 223: Information Security Fundamentals.** 3 credits.

Introduces concept of information security. Discusses need for organizational policy to define required services such as confidentiality, authentication, integrity, nonrepudiation, access control, and availability, and mechanisms to implement those services. Covers different types of security including physical security, computer security, and network security; common threats to and attacks against information systems, including accidental damage, identity theft, malicious software, and "spam"; and defensive measures. Notes: Students cannot receive credit for both IT 221 and IT 223. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 103\(^c\), 103T, 103X, 104\(^c\) or 104T) and (IT 101\(^c\) or 105\(^c\)).
\(^c\) Requires minimum grade of C.

Students cannot enroll who have a major in Civil and Infrastructure Engr, Computer Engineering or Computer Science.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 293: Applied IT: Junior Transition.** 1 credit.

Focuses on transition issues for sophomores and transfer students in Information Sciences and Technology programs. Assists sophomores and transfer students with choice of concentration, course selection, and career readiness. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
Students with a class of Freshman may **not** enroll.

Enrollment is limited to students with a major in Information Technology.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 309: Data Structures and Algorithms in Python. 3 credits.
Fundamentals of data structures and analysis of algorithms. Large programs written in a modern, high-level programming language. Stresses abstraction, modular design, code reuse, and correctness. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 102C or 125) and (IT 102C, MATH 112C or 125C).
C Requires minimum grade of B.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 314: Database Programming. 3 credits.
The course introduces students to the Oracle Developer application development utilities and tools and describes how to create and manipulate databases in Oracle database management system. The course provides an extensive overview of SQL and introduction to PL/SQL. Topics include data definition and manipulation languages, stored procedures, triggers, indexing techniques, and elementary query optimization. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 106C, 109C, 196C or CS 112C) and (IT 214B or 194C).
C Requires minimum grade of B.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 315: Mobile Development. 3 credits.
Studies business-oriented applications for popular mobile platforms including Blackberry, Android and Apple. Provides overview of mobile platforms and devices including evaluation, uses, design and development of applications. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 206C, 209C or CS 211C) and (IT 213B or 193B).
C Requires minimum grade of C.
B Requires minimum grade of B.
Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 322: Health Data Challenges. 3 credits.
Covers methodology and tools used to work with health data structures supporting organizations’ needs for reliable data that are captured, stored, processed, integrated, and prepared for further querying, decision making, data mining and knowledge discovery for a variety of clinical and organizational purposes. Data security and privacy, data standards, data interoperability, health information exchange, and big data analytics are discussed. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts. Equivalent to BENG 322.

Registration Restrictions:
Required Prerequisites: (IT 214B or 194B) and (STAT 250C or 344D).
B Requires minimum grade of B.
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 324: Health Information Technology Fundamentals. 3 credits.
Explores challenges in the development and implementation of information systems and informatics tools in healthcare environment. Discusses the importance and benefits of electronic health records (EHRs). Students learn about EHRs’ creation, management, and evolution, and their use for clinical decision support. In addition health information security, privacy, federal laws, regulations and standards, and their impact on healthcare delivery are discussed. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: IT 214B or 194B.
B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology or Information Technology.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 328: Health Information Emerging Technologies. 3 credits.
Provides an introduction to networking in the healthcare environment and covers a wide range of topics on emerging health information technologies. Discusses internet protocols, safety procedures, and data privacy considerations in healthcare environments, and processes required to design, secure, and troubleshoot a network to support healthcare organizations. Mobile computing, patient portals, personal health records, telehealth, health information exchange are discussed. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: (IT 341C).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 331: Web I: Web Development. 3 credits.
Introduces the principles and techniques necessary for successful client-side web development. Topics such as HTML5, Cascading Style Sheets, JavaScript, DOM, XML, AJAX, and jQuery are presented. Students will learn to develop attractive and interactive web pages and applications and use client-side web-scripting languages to solve problems both with a text editor and more powerful WYSIWYG HTML editors. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 106C, 109C, CS 112C or IT 196C) and (IT 213B or 193B).
C Requires minimum grade of C.
B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 332: Web Server Administration. 3 credits.
Covers the installation, configuration, and administration of Web servers, FTP servers, and DNS servers. Additional topics include security setups, administration, and associated performance issues. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (IT 213B or 193B).
B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 335: Web Development using Content Management Systems. 3 credits.
Through lectures and hands-on lab experience, presents web development techniques using content management systems (e.g.
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 341: Data Communications and Network Principles.** 3 credits.
Focuses on primary aspects of data communications and networking. Open Systems Interconnection (OSI) and Internet models; Layer 1 interfaces and cabling configurations; IP network addressing, network design, router and port configurations; security protocols; static routing, RIPv2, and OSPF configurations; TCP, UDP, data reliability, and error correction methods; Telnet, FTP, TFTP, HTTP, SMTP, POP, and DNS protocols. Notes: This course is 50 percent lab work of configuration of routers and network design, implementation, and testing. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (**IT 101**<sup>B</sup> and **IT 212**<sup>C</sup>) or (**IT 105**<sup>C</sup> and **IT 106**<sup>C</sup>).

Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 342: Operating Systems Fundamentals.** 3 credits.
 Practices and procedures for installing and configuring modern operating systems, including user accounts, file, print, and terminal servers, mobile computing, and disaster recovery. Through practical lab sessions, students receive real-world experiences with multiple operating systems. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (**IT 101**<sup>C</sup> and **IT 212**<sup>C</sup>) or (**IT 105**<sup>C</sup> and **IT 106**<sup>C</sup>).

Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 343: Information Defense Technologies.** 3 credits.
This course will examine and assess the role of information technology in national security, cybersecurity, and information warfare: cyberterrorism, espionage, psyops, reconnaissance and surveillance, space assets, and applications of GPS and cryptographic technology.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 345: Information Defense Administration of Linux Systems.** 3 credits.
Provides essential strategies and procedures for planning, organizing, staffing, monitoring, and controlling design, development, and production of system to meet stated IT-related need in effective and efficient manner. Fulfills writing-intensive requirement for BS in information technology. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (**IT 223**<sup>B</sup>) and (**IT 101**<sup>C</sup> and **IT 105**<sup>C</sup>) or (**IT 106**<sup>C</sup>, **IT 109**<sup>C</sup>, **IT 196**<sup>C</sup> or **IT 112**<sup>C</sup>) and (**IT 342**<sup>C</sup> or **IT 300**<sup>C</sup>).

Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology or Information Technology.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 352: Security Administration of Linux Systems.** 3 credits.
Provides theoretical foundation and practical experience installing, configuring, and maintaining Linux systems with an emphasis on best practices for security. Students develop a heterogeneous suite of clients and servers with firewalls and other networking components. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (**IT 223**<sup>B</sup>) and (**IT 101**<sup>C</sup> and **IT 105**<sup>C</sup>) or (**IT 106**<sup>C</sup>, **IT 109**<sup>C</sup>, **IT 196**<sup>C</sup> or **IT 112**<sup>C</sup>) and (**IT 342**<sup>C</sup> or **IT 300**<sup>C</sup>).

Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology or Information Technology.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 353: Information Defense Technologies.** 3 credits.
This course will examine and assess the role of information technology as a tool of warfare and civil defense. Topics will be discussed from both defensive and offensive perspectives and will include asset tracking, asymmetric warfare, network centric warfare, physical attacks, cyberterrorism, espionage, psyops, reconnaissance and surveillance, space assets, and applications of GPS and cryptographic technology.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
Students will research and write about the social, ethical, and political effects of such technology. Notes: For INFT and AIT majors, minors and certificates, and BAS cybersecurity concentration only. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 101C or 105C) and (IT 223B).
- C Requires minimum grade of C.
- B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 357:** *Computer Crime, Forensics, and Auditing.* 3 credits.
Covers computer crime, relevant laws, agencies, and standards. Presents auditing, logging, forensics, and related software. Explores legal principles such as chain of evidence, electronic document discovery, eavesdropping, and entrapment. Students get hands-on experience with forensics tools. Notes: For INFT and AIT majors, minors and certificates, and BAS cybersecurity concentration only. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts. Equivalent to CRIM 304.

**Registration Restrictions:**

**Required Prerequisites:** (IT 103X, 103C, 103T, 104C or 104T) and (IT 223B).
- C Requires minimum grade of C.
- B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 366:** *Network Security.* 3 credits.
Examines information security services and mechanisms in network context. Topics include symmetric and asymmetric cryptography; message authentication codes, hash functions and digital signatures; digital certificates and public key infrastructure; access control including hardware and biometrics; intrusion detection; and securing network-enabled applications including e-mail and web browsing. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 206C, 209C or CS 211C) and IT 223B.
- C Requires minimum grade of C.
- B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 369:** *Data and Application Security.* 3 credits.
Introduces concept of data and application security. Discuss challenges of database, and application and industrial control system security. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 207C and 223B).
- May be taken concurrently.
- C Requires minimum grade of C.
- B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 390:** *Rapid Development of Scalable Cloud Applications.* 3 credits.
Presents software engineering, programming techniques, platforms and tools necessary for rapid development of scalable applications including: cloud platforms; scalable data storage solutions; web applications development environments. The course will provide a general overview of such techniques but will concentrate on selected ones in each term. The students will work in small teams and must develop scalable prototypes during the course. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 206B, 209B or CS 211B) and (IT 213C or 193C) and (IT 214C or 194C).
- B Requires minimum grade of B.
- C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**IT 409:** *Python Web Programming.* 3 credits.
This course covers layers of the n-tier architecture. It teaches students how to use Python and Django framework for building web sites. It starts with developing a web application with Python and adding additional features to that application. These features include, persisting data to an RDBMS systems such as Postgres SQL, securing the developed applications including user authentication, logging and debugging, and testing. Finally, we will explore developing RESTful web services with
Python/Django and integrating them with a Python web application. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** IT 209\(^B\) or CS 211\(^B\).
\(^B\) Requires minimum grade of B.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 410:** *Web Programming.* 3 credits.
This course covers layers of the n-tier architecture. Students will build web applications using available frameworks at each tier, such as Java Server Faces and Servlets for the UI tier, Web Services for the business tier and Java Database Connectivity for the persistence tier. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** IT 206\(^B\) or CS 211\(^B\).
\(^B\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 413:** *Digital Media Editing.* 3 credits.
Examines three areas of digital media editing- tools for editing, content and logic decision process, and information technology used by major corporations for development and distribution-through video examples from entertainment industry and corporate productions as well as hands-on editing experience. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 213\(^C\) or 193\(^C\)).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 414:** *Database Administration.* 3 credits.
Explores advanced concepts of database administration using enterprise-level database management system. Topics include: backup, recovery, corruption, automatic management, resource management, job scheduling, space management, memory management, storage management, diagnosis and corresponding tools. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 314\(^C\)) and (IT 214\(^B\) or 194\(^B\)).
\(^C\) Requires minimum grade of C.
\(^B\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 415:** *Information Visualization.* 3 credits.
Provides an overview of information visualization applications in intelligence analysis, decision support systems, and network monitoring. Covers human factors, human interface with information, and current and future trends in information visualization. Students also learn to develop a rudimentary visualization application. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 213\(^B\) or 193\(^B\)).
\(^B\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 429:** *Security Accreditation of Information Systems.* 3 credits.
This course explains basic principles of performing FISMA certification and accreditation (C&A) of an IT System. The course covers methodology for completing C&A, explains the role of the Certifier and the Information System Security Officer (ISSO), and gives students real world experience with IT Systems in the Federal Government. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 105\(^C\) or 212\(^C\)) and (IT 223\(^B\)).
\(^C\) Requires minimum grade of C.
\(^B\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 431:** *Web II: Advanced Web Development.* 3 credits.
Focuses on database-driven web application development and web presentation using server-side coding and advanced techniques. Additional topics include AJAX, web server configuration and web...
services. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 331\(\textsuperscript{C}\)) and (IT 213\(\textsuperscript{B}\) or IT 193\(\textsuperscript{B}\)).

- \(\textsuperscript{C}\) Requires minimum grade of C.
- \(\textsuperscript{B}\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Info Sciences & Technology.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 441:** *Network Servers and Infrastructures.* 3 credits.

Covers IP networking concepts and practices for IPv6 addressing, DHCP and DNS in IPv6 networks, secure communication over VPNs, VoIP architecture, Virtual Computing, Cloud Computing, MPLS, traffic monitoring and network connectivity between operating systems.

Students learn the latest technologies of IP networks and understand application-level services used in the Internet. Lab sessions focus on installation of applications on virtual servers. Notes: Term project.

Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 341\(\textsuperscript{B}\) or L341) and (IT 102\(\textsuperscript{C}\), MATH 112\(\textsuperscript{C}\) or 125\(\textsuperscript{B}\)).

- \(\textsuperscript{B}\) Requires minimum grade of B.
- \(\textsuperscript{C}\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Info Sciences & Technology.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 455:** *Wireless Communications and Networking.* 3 credits.

Covers fundamental principles underlying wireless data communications. Topics include wireless transmission basics, radio propagation issues, antennas, digital modulation, spread spectrum techniques and their applications, and popular standards: WiFi, WiMAX and Bluetooth. Also presents practical knowledge to enable the design, testing, deployment, debugging and commissioning of WiFi, WiMAX networks and point-to-point microwave systems. Discussions on cellular network technologies are also included. Offered by Info Sciences & Technology (p. 1117).

Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 101\(\textsuperscript{C}\) or 105\(\textsuperscript{C}\)) and (IT 102\(\textsuperscript{C}\), MATH 112\(\textsuperscript{C}\) or 125\(\textsuperscript{B}\)) and (IT 341\(\textsuperscript{B}\) or L341).

- \(\textsuperscript{C}\) Requires minimum grade of C.
- \(\textsuperscript{B}\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Info Sciences & Technology.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 462:** *Applied Cyber Threat Analysis.* 3 credits.

Studies security policies, models, and mechanisms for secrecy, integrity, availability, and usage controls. Topics include models and mechanisms for mandatory, discretionary, and role-based access controls; authentication technologies; control and prevention of viruses and other rogue programs; common system vulnerabilities and countermeasures; privacy and security policies and risk analysis; intellectual property protection; and legal and social issues. Notes: For INFT and AIT majors, minors and certificates, and BAS cybersecurity concentration only. Offered by Info Sciences & Technology (p. 1117).

Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 105\(\textsuperscript{C}\) or 212\(\textsuperscript{C}\)) and (IT 223\(\textsuperscript{B}\) and IT 369\(\textsuperscript{C}\)).

- \(\textsuperscript{*}\) May be taken concurrently.

- \(\textsuperscript{C}\) Requires minimum grade of C.
- \(\textsuperscript{B}\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Info Sciences & Technology.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)
**IT 465: Peer-to-Peer Systems and Overlay Networks.** 3 credits.
Peer-to-Peer (P2P) systems and overlay networks have become popular over the years because they are a cost-effective and scalable content sharing solution. Fundamentals of P2P systems and overlay networks are introduced to validate it as a better option than the traditional client server architecture. Students learn the classifications of P2P systems and architectures; overlay network categories, and their benefits and disadvantages. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** IT 341\(^B\) and (IT 106\(^C\), 109\(^C\), 196\(^C\) or CS 112\(^C\)).
\(^B\) Requires minimum grade of B.
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 466: Foundations of Cryptography and Security.** 3 credits.
Detailed study of certain symmetric and asymmetric cryptographic schemes; analysis of network data (including “packet sniffing”); security at different network layers (including IPSec, SSL/TLS and Kerberos); and secure e-commerce. Teaches principles of designing and testing secure networks, including use of network partitioning, firewalls, intrusion detection systems, and vulnerability assessment tools. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 223\(^B\)) and (IT 341\(^C\)) and (IT 206\(^C\), 209\(^C\) or CS 211\(^D\)) and (IT 102\(^C\), MATH 112\(^C\) or 125\(^C\)).
\(^B\) Requires minimum grade of B.
\(^C\) Requires minimum grade of C.
\(^D\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 467: Network Defense.** 3 credits.
Practices and procedures for defending business-class, heterogeneous networks against threats (including system failure, environmental events, human error) and attacks (including intrusion, malicious software, denial of service). Through practical lab sessions, students receive real-world experience designing networks, installing and configuring system components, detecting and recovering from problems and attacks, and gathering data to support prosecution of offenders and refinement of countermeasures. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** IT 366\(^C\) and 223\(^B\).

**IT 479: Digital Media and Web Design Capstone.** 3 credits.
Student team-based experience gained in the work of the preceding courses in the digital media and web design minor. Each individual student will produce a portfolio of digital media and web-design related products and features that demonstrate core competencies in coding, design, content, and accessibility. Students will work in cross-disciplinary teams to carry out a client-based web design project, the process and outcomes of which will also be represented in the individual portfolio. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts. Equivalent to ENGH 479.

**Recommended Prerequisite:** Before enrolling in the Capstone seminar, students need to have completed all required courses for the Digital Media and Web Design Minor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 484: Voice Communications Technologies.** 3 credits.
Examines current and emerging technologies for transmission of voice signals over telecommunications systems. Highlights significant differences between the requirements for voice and other forms of data. Topics provide a balance between traditional voice technologies and those that use data networks. Real-world implementations are analyzed to determine reliability, quality, and cost effectiveness. Includes lab experiments with analog and digital technologies. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (IT 300\(^C\)) and (IT 341\(^B\) or L341).
\(^C\) Requires minimum grade of C.
\(^B\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 488: Fundamentals of Satellite Communications.** 3 credits.
Provides a comprehensive overview of the principles of satellite communications systems. Major topics include satellite orbits and constellations, the space segment, antennas, modulation, coding, satellite access methods and link analysis. Also covers satellite applications, with emphasis on recent developments in the satellite
communications field. Hands-on design experience is gained through the use of readily available vendor software systems. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** (IT 300\(^C\)) and (IT 341\(^B\)) and (MATH 108\(^C\) or 113\(^C\)).

\(^C\) Requires minimum grade of C.

\(^B\) Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 491:** *Introduction to Applied Natural Language Processing.* 3 credits.

This is an introductory course on natural language processing. It will focus on studies of textual data using rule-based and statistical methods. Our goal will be to create computer programs that analyze, interpret, and even generate human language. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** IT 209\(^B\) and STAT 250\(^C\).

\(^B\) Requires minimum grade of B.

\(^C\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 492:** *Senior Design Project I.* 3 credits.

Students use information technology as a tool to redesign business processes so the enterprise can achieve its objectives. Student teams analyze the business processes of real organizations, they identify and prioritize the negative impact caused by current process challenges, then develop and present a compelling Business Case for Change. Students develop skills critical for preparing and delivering effective verbal briefings and presentations. Notes: Restricted to AIT/INFT majors. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Mason Core:** Capstone (p. 142)

**Registration Restrictions:**

**Recommended Prerequisite:** Mason Core Information Technology and Computing Course (minimum grade of C)

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 493:** *Senior Design Project II.* 4 credits.

Students, in teams, complete projects demonstrating preparedness as an IT professional. This work includes ethical challenges, status reports and engineering notebooks evaluated during class. Teams members develop detailed designs, build solutions up to Beta, present final written reports and final verbal presentations before review panels of business leaders. Students must register for the section that continues their IT 492 section. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Mason Core:** Capstone (p. 142)

**Registration Restrictions:**

**Required Prerequisite:** IT 492\(^C\).

\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Applied Information Technology or Information Technology.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 495:** *Turning Ideas into Successful Companies.* 3 credits.

This is a practical course in entrepreneurship. Each class session will focus on specific topics associated with building a business: team creation, business planning, market research, product development, financial planning, funding, people and organizations, competitive strategies, operations, growth and exit strategies, and more. Students will have reading assignments and will participate in competitive team assignments. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Recommended Prerequisite:** Mason Core Information Technology and Computing Course (minimum grade of C)

**Registration Restrictions:**

Enrollment limited to students with a class of Senior Plus or Senior.

**Mason Core:** Capstone (p. 142)

**Registration Restrictions:**

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**IT 496:** *Decision Making in IT Ventures.* 3 credits.

Introduces students to the decision making processes involved in leading IT companies. Topics include: the role of major IT applications in strategic, tactical, and operational decisions; assessment and justification of IT ideas and investments; methodologies to predict decision outcomes; how to measure IT investments performance; strategies to inspire, influence and organize the workforce to accomplish key business goals. Notes: Students develop skills through assessment and role-playing activities, discussions, cases, and hands-on applications. Offered by Info Sciences & Technology (p. 1117). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (IT 106B, 109B, 196B or CS 112B).

B Requires minimum grade of B.

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 498: Independent Study in Information Technology. 1-3 credits.
Directed self-study of special topics of current interest in IT. Notes: Topics must be arranged with instructor and approved by department chair before registering. Offered by Info Sciences & Technology (p. 1117). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: 60 credits.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 499: Special Topics in Information Technology. 3 credits.
Topics of special interest to undergraduates. Notes: May be repeated if topics are substantially different. Offered by Info Sciences & Technology (p. 1117). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: 60 credits.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Washington Consortium level students may not enroll.

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

700 Level Courses

IT 796: Directed Reading and Research. 1-6 credits.
Reading and research on specific topic in information technology under direction of faculty member. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit.

Recommended Prerequisite: Completion of all coursework for the PhD in Information Technology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

800 Level Courses

IT 896: Directed Readings and Research in IT. 1-6 credits.
Students pursue research on a specific topic under direction of faculty. Offered by Info Sciences & Technology (p. 1117). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Completion of all coursework for the PhD in Information Technology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students in the Volgenau School of Engineering college.

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

900 Level Courses

IT 990: Dissertation Topic Presentation. 1 credit.
Students put together a professional presentation of a research proposal and present it for critique to fellow students and interested faculty. Notes: This course is only offered once per year in the Spring semester. Offered by Info Sciences & Technology (p. 1117). May not be repeated for credit. Equivalent to CEIE 990, CS 990, ME 990, STAT 990.

Recommended Prerequisite: Completion of all coursework for the PhD in Information Technology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)
IT 991: **Engineer Project Presentation.** 1 credit.
Opportunity for engineer degree students to present project proposal for critique to interested faculty and students. Covers presentation of project topic for engineer degree in information technology, and is required of all engineer degree students. Students complete project proposal. Notes: May be repeated with change in topic, but degree credit is only given once. Offered by Info Sciences & Technology (p. 1117). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of all course requirements for the Engineer degree in Information Technology or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

IT 996: **Engineer Project Proposal.** 1-6 credits.
Work on project proposal that forms basis for dissertation for engineer degree. Notes: No more than 12 credits of IT 996 and 997 may be applied to engineer degree requirements. Offered by Info Sciences & Technology (p. 1117). May be repeated within the degree.

**Recommended Prerequisite:** Completion of all course requirements for the Engineer degree in Information Technology and permission of Project Director.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Engineer degree.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

IT 998: **Doctoral Dissertation Proposal.** 1-12 credits.
Work on research proposal that forms basis for doctoral dissertation. Notes: No more than 24 credits of IT 998 and 999 may be applied to doctoral degree requirements. Offered by Info Sciences & Technology (p. 1117). May be repeated within the degree.

**Recommended Prerequisite:** Admission to Doctoral candidacy; students must submit the Doctoral proposal and have it approved prior to registering for this course.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**Integrative Studies (INTS)**

**100 Level Courses**

INTS 101: **Narratives of Identity.** 6 credits.
Explores the concept of identity through the study of literature and oral communication. Introduces aesthetic, cultural, and historical aspects of these forms of communication as well as their psychological, political, and practical significance, with special emphasis on the role of communication in a free society. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Literature, Oral Communication (p. 142)

**Specialized Designation:** Discovery of Scholarship.

**Registration Restrictions:**
Enrollment limited to students with a class of Freshman.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
INTS 102: Global Networks and Communities. 6 credits.
Prepares students for participation in a global society by investigating global and local issues in a historical context. Considers critical topics of western civilization, globalization, (neo)colonialism, imperialism, and hegemony. Students gain an in-depth perspective of the intricate relationships between people and cultures at various moments in our history. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Global Understanding, Western Civilization (p. 142)

Specialized Designation: Green Leaf Related Course, Discovery of Scholarship.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 103: Human Creativity: Science and Art. 6 credits.
Investigates the vital role played by human creativity in fine arts and natural sciences. Fosters an understanding of the aesthetic and intellectual components of the arts while exploring the scientific method, the relation of theory and experiment, and the development and elaboration of major ideas in science. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Arts, Natural Science Overview (p. 142)

Specialized Designation: Green Leaf Related Course, Discovery of Scholarship.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 195: Field-Based Work. 1-6 credits.
Directed field studies in topic not otherwise available to students. Notes: Topics vary, but entire course or significant component is located off campus. In addition to fieldwork, course may also include reading assignments, tutorials, lectures, papers, presentations, portfolios, journals, and exams. Students bear costs of required field trips and should consult the Center for Social Action and Integrative Learning for more information. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 24 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

INTS 202: Public Speaking and Critical Thinking Skills. 4 credits.
Combines process of learning to speak in front of audiences with analysis of arguments and persuasive appeals. Students learn how to create and present effective speeches, adapt messages to specific audiences, and evaluate and critique messages produced for others. One credit of experiential learning enables students to examine public speeches, news stories, political campaigns, and advertising, among others, to make meaningful connections between public speaking theory and practice. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Oral Communication (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 203: Inquiry for Action: Facilitating Change. 6 credits.
Examines the relationships between academic research, individual acts and society’s social and political structures. Students design a community-based research project, explore a rich array of qualitative and quantitative approaches, apply information and communication technologies to all aspects of the research process, and learn from individuals and organizations outside the classroom. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Info Tech (without Ethics), Social/Behavioral Sciences (p. 142)

Specialized Designation: Discovery of Scholarship.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 204: Leadership Theory and Practice. 4 credits.
Examines historical and contemporary leadership theories and invites students to be reflective of their own leadership experiences through the lenses of those theories. Students develop critical lenses through which to evaluate their own self-awareness, effectiveness in groups, and ability to navigate structures and systems. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 210: Sustainable World. 4 credits.
Covers basic issues in the natural and social sciences that underlie current environmental problems. Considers ethical matters such as equity as they pertain to global resource consumption, pollution, and climate change. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Specialized Designation: Green Leaf Focused Course, Discovery of Scholarship., Scholarly Inquiry.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 211: Introduction to Conservation Studies. 3-6 credits.
Provides foundation for the integrative study of environmental conservation. Formal and informal writing assignments and oral presentations designed to strengthen critical thinking and communication skills important to students who pursue conservation-related professions. Instructors encourage students to use course assignments and off-campus work to identify suitable educational and career paths within the conservation world. Offered by School of Integrative Studies (p. 574). Limited to three attempts.
Mason Core: Natural Science Overview (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 244: Beats, Rhyme, and Culture. 4 credits.
Examines the history of hip-hop and the effect it has had on our society. The primary focus is to consider hip-hop as a medium of communication that impacts, represents, and misrepresents the life experiences of youth in the United States. Students are exposed to historical, socioeconomic, and musical/aesthetic contexts of this genre through in-class activities and by attending related cultural events. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 245: Visual Culture and Society. 4 credits.
Explores the role of visual culture in contemporary society including an examination of photography, the visual and performing arts, film and video, and electronic media. Readings focus on the historical foundations of visuality as well as theories of visual culture and aesthetics. Students investigate the ways that forms of visual culture function in society and how these are linked to race, class, and gender as well as politics and economics. Students will gain hands-on experience working with contemporary visual media tools such as computer graphics and digital video editing. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Arts (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 249: Digital Literacy. 4 credits.
Investigates information literacy, the mobile web, and interactive and immersive media, including gaming, social networking, blogging and micro-blogging, intellectual, political and civic collaborations, digital aesthetics and emerging digital cultures and art forms. Explores major theories of digital literacy and culture and introduce diverse social, artistic, theoretical and cultural practices that characterize today's digital domains and virtual environments. Notes: One experiential credit is required in this class. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Info Tech (without Ethics) (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 275: Special Topics. 1-18 credits.
Studies topics of special interest to undergraduates. Notes: May be repeated for credit when topic is different. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 18 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 291: Living-Learning Community. 4 credits.
Integrates students' academic interests with their residence hall living experience. Students with common interests live together in the same residence hall and develop personal and academic relationships with other students and faculty from their chosen Living Learning Community focus. Offered by School of Integrative Studies (p. 574). May be repeated within the degree for a maximum 8 credits.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 292: Leadership for Sustainability. 1 credit.
For students living in the Sustainability Living Learning Community and/ or students participating in the Greenleaf ENCORE Series. Develop your understanding of sustainability in both theory and practice. Learn how change happens at Mason and identify contributions you can make to Mason's continuing pursuit of campus sustainability. Offered by School of Integrative Studies (p. 574). May be repeated within the degree for a maximum 8 credits.

Specialized Designation: Green Leaf Focused Course

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Service-learning courses offer students, faculty, and community partners an opportunity to work together to integrate and apply knowledge to address community needs. Learning goals, action strategies, and assignments developed collaboratively. Students demonstrate progress through critical reflection that illustrates growth in acquiring and comprehending values, skills, and knowledge content. Critical reflection may take the form of papers, presentations, portfolios, journals, and exams. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 15 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 295: Field-Based Work. 1-18 credits.
Directed field studies in topic not otherwise available to students. Notes: Topics vary, but entire course or significant component is located off campus. In addition to fieldwork, course may also include reading assignments, tutorials, lectures, papers, presentations, portfolios, journals, and exams. Students bear costs of required field trips and should consult the Center for Social Action and Integrative Learning for more information. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 24 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
INTS 298: Field-Based Work. 1-15 credits.
Experiential-based individualized studies, mentored by instructor. Notes: Topics decided by student and instructor, and approved by executive director. Requirements must be detailed in individualized course contract signed by student, instructor, and executive director. May include reading assignments, papers, journals, and portfolios. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 15 credits.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses
INTS 300: Law and Justice. 3 credits.
Combines various teaching methods including lectures, the Socratic method, case studies, discussion of readings and films, debates, and active inquiry-based learning to investigate the major institutions in the American legal system. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 301: Science in the News. 3 credits.
Examination and discussion of the current trends in science as reported in the popular media. Students learn how to evaluate the science that is reported so they may become informed consumers; discuss how scientific advancement might shape society by looking at how science and society have changed together over time; and use examples from the past to discuss future trends. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Natural Science Overview (p. 142)
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 303: Introduction to International Studies. 3 credits.
Explores a multi-disciplinary approach to addressing world issues. Combines lectures, field trips, discussion of readings, films, case studies, projects, and active inquiry-based learning to examine the natural environment, infectious disease and globalization, media and technologies, and war and violent conflict, with an attempt to deepen community members' understanding of an increasingly interdependent world. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Global Understanding (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 304: Social Movements and Community Activism. 4 credits.
Examines how citizens, individually and collectively, accomplish social change in society through case study analysis. Considers advantages and limits of social change strategies from communication and social movement theory perspectives. Surveys topics including how leaders maintain momentum in face of opposition; how movements and organizations use slogans, symbols and music to inspire followers; and how participants construct persuasive media campaigns and political arguments to facilitate policy change. Notes: One credit of experiential learning enables students to explore their role as social advocates and effective citizens in context of community. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 305: Conflict Resolution and Transformation. 6 credits.
Examines the nature and dynamics of conflict and ways to resolve and transform conflict. Experiential learning is used as the vehicle through which students explore the assumptions about communication and develop their skills for resolving interpersonal conflicts. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 308: American Landscapes in Fiction, Film, and History. 6 credits.
Waterways and roadways have always had practical, spiritual significance for Americans. Course looks at American literary works and films in historical context to better understand the roles roads, rivers play in shaping physical, cultural landscape of United States. Students explore course themes outside classroom on weekend field trips, and conduct self-directed road trip as a main learning events. Notes: Satisfies requirements for ENGH 302. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Synthesis (p. 142)
Specialized Designation: Writing Intensive in Major
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 310: Violence and Gender. 3-6 credits.
Using nonfiction, research documentaries, oral histories, case studies, literature, feature films, music, dance, and visual arts, examines the dynamics of violence through different cultural lenses. Students work in university and community settings to integrate their academic experiences with practice. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 311: The Mysteries of Migration: Consequences for Conservation. 6 credits.
Investigates the biology of migration and its implications for science policy. Students consider the phenomenon of migration in the context of natural history, conservation, and cultural issues. The course includes
several weekend trips for field study. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Natural Science with Lab (p. 142)

**Specialized Designation:** Green Leaf Related Course, Writing Intensive in Major

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 312:** *Images and Experiences of Childhood: Social Construct, Literature, and Film.* 3-6 credits.
Immerses students in the images of childhood through the media of literature, video, and poetry, with a strong emphasis on historical perspectives of childhood. The class is interactive, requires some work in groups, and requires classroom participation. Offered by School of Integrative Studies (p. 574). Limited to three attempts. Equivalent to HIST 386, HIST 498.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 314:** *Conflict, Trauma and Healing.* 6 credits.
Develops in students an appreciation of human resilience and helps them acquire better coping mechanisms. Imparts knowledge of the nature and dynamics of trauma and healing. Investigates the difficulties people face in responding to settings of conflict such as war, school shootings, abuse, domestic violence, including natural disaster. Examines case studies from a variety of personal, national, and international settings. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 315:** *Spirituality and Conflict Transformation.* 6 credits.
Examines dimensions of spirituality, including peacemaking efforts in large-scale conflicts, conflicts within faith communities, and interpersonal disputes. Experiential learning explores spiritually informed resolution. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 316:** *Introduction to Childhood Studies.* 4 credits.
Focuses on the study of childhood from birth to adolescence from the perspective of several disciplines. Covers childhood theory, research, and policy and their applications to decisions regarding children and youth. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 317:** *Issues in Family Relationships.* 4 credits.
Dynamics of family systems and issues that shape relationships among family members. How families evolve as members grow, leave, and create related family systems; family roles and forms; and communication patterns, decision-making, conflict, stress, and power. Content draws from family communication, family relations, psychology, and counseling. Lecture, discussion, observation, analysis, research, and role-playing.
Notes: One credit counts for experiential learning; students complete 45 credits of course-related work outside classroom. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Recommended Prerequisite:** Minimum of 55 hours completed.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 318:** *Exploring Virginia’s Watersheds.* 4 credits
Comprehensive overview of history, geography, economics, and management of water resources in Virginia; and how rapidly growing population has measurably degraded resource. Includes one weekend field trip. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Specialized Designation:** Green Leaf Focused Course, Writing Intensive in Major

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 319:** *Contemporary Youth Studies.* 3 credits.
Examines the history of positive youth development, how scholars study youth, and the theories they use to guide their research. Evaluates the policies and programs aimed at empowering youth. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 320:** *Construction of Differences: Race, Class, and Gender.* 6 credits.
Investigates race, sex, sexual orientation, and social class in contemporary American society. Examines commonalities in the construction of these categories and experiences of those who occupy them. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
INTS 321: *Parent-Child Relations.* 3 credits.
Introduces students to concepts and challenges in parenting, along with family diversity and risk factors. Considers interactions between parents and children from birth to adolescence as well as cross-cultural, historical, and societal influences. Explores efforts that have been successful in changing detrimental parenting actions. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 322: *Teacher: A Historical Perspective.* 3 credits.
Examines the rich heritage of the teaching profession in Western society. Traces the history of educational philosophy and teaching, beginning with the ancient Greeks and culminating in the 21st century United States. Using the exploration of the various philosophies of education as a foundation, examines contemporary images of teachers in literature and film. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 331: *The Nonprofit Sector.* 4 credits.
Readings, classroom discussions and activities, and practical experience reveal historical, legal, and socioeconomic forces that define and influence the American nonprofit sector. Explores structures, issues that affect nonprofit management, governing, and financial systems. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Recommended Prerequisite:** Sophomore standing.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 334: *Environmental Justice.* 4 credits.
Examines historical and contemporary sociopolitical and socioeconomic conditions that have given rise to the environmental justice movement. Analyzes how individuals contribute to environmental justice or injustice through everyday decisions. Considers how environmental justice movement responds to these issues. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Specialized Designation:** Green Leaf Focused Course, Writing Intensive in Major

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 336: *Poverty, Wealth and Inequality in the US.* 3 credits.
Explores the social, cultural, political, and spiritual implications of poverty, wealth, and inequality in the United States. Examines the ways in which class identity informs one's views of the world and its politics; how socioeconomic status affects one's access to education and other social goods; and how dominant discourses and stereotypes related to poverty influence mass perception regarding a range of social issues, from educational policy to welfare. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 337: *Social Justice Consciousness and Personal Transformation.* 3 credits.
Explores the many spaces at which the quest to strengthen social justice consciousness interacts with processes and commitments for personal transformation. Analyzes through the lens of the activist and in the spirit of bringing mindfulness to activism, how we come to see and experience the world. Examines how socialization informs consciousness. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 338: *Animal Rights and Humane Education.* 3 credits.
Explores a combination of critical theories, experiential learning, and dialogical practices to examine the ways in which non-human animals are exploited for human profit. Examines the ramifications of this exploitation ecologically, as a question of sustainability, and spiritually, as a question of the impact of animal abuse on the human spirit. Discusses the use of animals in entertainment, factory farming, animal testing, and sport or trophy hunting; and how individuals and organizations are fighting these practices. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Specialized Designation:** Green Leaf Related Course, Writing Intensive in Major

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 345: *Introduction to Multimedia.* 5 credits.
Technological, aesthetic, and educational issues of using interactive multimedia. Topics include theoretical underpinnings of some technological issues involved in multimedia computing as well as techniques for authoring interactive multimedia projects using a variety of digital media tools. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Info Tech (complete) (p. 142)

**Specialized Designation:** Writing Intensive in Major

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
INTS 346: *Art as Social Action*. 4 credits.
This learning community explores historical records to understand different ways art has been produced, distributed, and consumed. Examines ways artists have affected change in their worlds. Through interdisciplinary studies, teaches major social movements and artists and theories used in socially engaged art. Students engage in experiential learning outside classroom as course requirement. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Arts (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 347: *Gender Representation in Popular Culture*. 3-6 credits.
Explores the way in which masculinity and femininity have been represented across the decades in television, movies, music videos, pop art, and print media. Provides a review of the scholarship on the historical and contemporary roles of women and men in society, and examines the contradictions and expectations associated with gender roles. Incorporates active group learning through creative, insight-oriented exercises, critical thinking and discussions, and group presentations and media research activities. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 348: *Digital Futures*. 3.6 credits.
Investigates important contemporary issues such as surveillance-privacy, censorship, piracy, gender and ethnicity, digital labor and play, mobile media and globalization, and the commercialization and political potential of the digital public spheres. Introduces students to the latest technological, philosophical and creative thinking about the future of human society in a digital age. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Recommended Prerequisite:** NCLC 249 or INTS 249

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Explores the science of well-being, including theories and practices linked to various domains of well-being such as mindfulness, resilience, life-satisfaction, happiness, mind-body wellness, and meaning and purpose. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Focusing on the individual in context, examines the growing research, science, and literature on well-being and resilience. Considers the many ways in which resilience can be learned and developed on individual, community, and organizational levels. Explores how resilience promotes growth and restores efficacy and agency, leading to higher levels of flourishing. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 360: *The Built Environment*. 6 credits.
Examines, records, and interprets objects, structures, and landscapes that compose our built environment. Draws on the fields of historical archaeology, architectural history, and urban geography, and employs photography, cartography, and evocative writing to represent the material world we inhabit. Builds on study of one neighborhood in Arlington, Virginia, and expands to entire metropolitan area. Offered by School of Integrative Studies (p. 574). Limited to three attempts. Equivalent to ANTH 315, ANTH 399.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 361: *Neighborhood, Community, and Identity*. 3-6 credits.
Examines processes of neighborhood formation and transformation in the context of urbanism, suburbanism, immigration, and transmigration. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Considers the philosophical foundations of social justice and human rights. Explores the interpretive difficulties related to identifying what constitutes human rights abuses, and evaluates regional perspectives on human rights. Analyzes institutions that strive to promote and enforce social justice and human rights standards including the United Nations system, regional human rights bodies, and domestic courts. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Individualized section form required. Study of a topic not otherwise available to the student. May involve any combination of reading assignments, tutorials, lectures, papers, presentations, or field/laboratory study (determined in consultation with instructor) Students are encouraged to work as a team on a particular topic. Notes: Maximum 12 credits can be used to fulfill graduation requirements. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 12 credits.

**Schedule Type:** Independent Study
INTS 370: Sustainable Food Systems. 6 credits.
Examines the evolution of US food systems with particular emphasis on the national capital region. Students place conventional agriculture and food systems in historical context; examine changing representations of food systems in film, literature, and other media; and research alternative systems that emphasize sustainability. Through a combination of classroom work and experiential learning, this course asks students to contemplate how capitalism, industrialization, and environmental ethics shape our land, culture, and society. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 371: Food Systems and Policy. 3 credits.
Examines the roles of individuals, corporations, and government in creating and communicating food policy. Students explore the rationale and rhetorics of US agriculture, food production and the environment, food and beverage processing, food safety and labeling, food sales and marketing, dietary guidance, and federal food assistance programs. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 375: Special Topics. 1-18 credits.
Studies topics of special interest to undergraduates. Notes: May be repeated for credit when topic is different. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 18 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 378: Medicine, Justice, and Public Policy. 3 credits.
Explores formation of public policy relating to several key issues in medicine. Students examine basic theories of justice and public policy formation and apply these to contemporary issues in the field of medicine. The goal is to examine how current policy on these issues was established and to give examples of major stakeholders in the debate. This course involves some traditional lecture and discussion classes and also features participative learning through group work and web-based discussions. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 390: International Internship. 1-6 credits.
Internship credit may be applied to 12 credits required in experiential learning. Notes: Students may take no more than 6 credits in any one semester, unless approved by director of experiential learning or executive director. Structured and supervised professional experience, within an approved agency, for which the student earns academic credit. The primary purpose of an internship is to connect the student's academic course work to experiences and challenges outside the university classroom. The faculty also expects that students will enhance their competencies and skills and explore career options. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 24 credits.

Recommended Prerequisite: Sophomore standing and permission of instructor.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

INTS 391: Understanding Integrative Studies. 3 credits.
Familiarizes students with the theory and practice of integrative learning. Challenges students not only to learn but also to think deeply about what, why, how, and for what purposes you learn. Focuses on exploration of identities and civic engagement as a global citizen. Emphasizes lifelong learning and preparation for academics and careers. Develops oral and written communication skills, critical thinking, and research skills. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Service-learning courses offer students, faculty, and community partners an opportunity to work together to integrate and apply knowledge to address community needs. Learning goals, action strategies, and assignments developed collaboratively. Students demonstrate progress through critical reflection that illustrates growth in acquiring and comprehending values, skills, and knowledge content. Critical reflection may take the form of papers, presentations, portfolios, journals, and exams. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 15 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 395: Field-Based Work. 1-18 credits.
Directed field studies in topic not otherwise available to students. Notes: Topics vary, but entire course or significant component is located off campus. In addition to field work, course may also include reading assignments, tutorials, lectures, papers, presentations, portfolios, journals, and exams. Students bear costs of required field trips and should consult the Center for Social Action and Integrative Learning for more information. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 24 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 396: Teaching Assistant Experience. 1-6 credits.
Teaching assistantship and peer-mentoring duties carried out through existing university programs, such as Technology Assistants, Writing Tutors, and Residence Advisors. Also includes teaching assistantship arrangements for specific courses detailed in individualized course contract signed by instructor and student. In addition to peer mentoring/advising, course work may include logistical support, reading assignments, papers, presentations, and portfolios. Offered by School of Integrative Studies (p. 574). May be repeated within the degree for a maximum 15 credits.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 397: Add-On Experiential Learning. 1-3 credits.
For students who wish to add one or more experiential learning credit to existing experiential learning course or learning community. Notes: May also be used by students who wish to add an experiential learning component to course that provides no experiential learning credit (with permission of instructor). Unless experiential learning add-on requirements are spelled out in course syllabus, requirements for add-on experiential learning credit must be detailed in individualized course contract signed by instructor and student. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 4 credits.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 398: Field-Based Work. 1-15 credits.
Experiential-based individualized studies, mentored by instructor. Notes: Topics decided by student and instructor and approved by executive director. Requirements must be detailed in individualized course contract signed by student, instructor, and executive director. May include reading assignments, papers, journals, and portfolios. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 15 credits.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 399: Study Abroad. 1-6 credits.
Intended for participation in formally organized course offered by Center for Global Education. A maximum of 15 credits may apply toward INTS degree requirements. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 32 credits.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 400: Temptress: Constructs of Sex and Power. 3 credits.
Examines the portrayal of powerful and/or sexual women throughout history, identifying famous historical "temptresses" and investigating the facts known about them. Explores representations and perceptions of contemporary female sexuality, considering possible future concepts and images of female power and sexuality. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 401: Conservation Biology. 6 credits.
Provides students with a working knowledge of conservation biology. Integrates the study of social, economic, and political factors with biodiversity, population modeling, habitat degradation, and management issues. Students confront the leading edge of this exciting field by developing real species conservation plans. The experiential learning component of the course will include trips to the Smithsonian Institution's Conservation and Research Center in Front Royal, Virginia, to study with nationally known experts. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)
Specialized Designation: Green Leaf Related Course
Recommended Prerequisite: Junior standing or permission of instructor.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 402: Plants and People - Sustenance, Ceremony, and Sustainability. 6 credits.
Examines the direct relationships between people and plants by integrating perspectives from both ethnobotany and economic botany. Provides students with an appreciation of the fundamental role of plants and plant-derived products in all aspects of human life in both industrialized and non-industrialized societies. Explores how plants and their uses have shaped both past and present cultures around the world. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 403: Conservation Behavior. 6 credits.
Introduces students to conservation behavior, a field that seeks to apply theories of animal behavior towards solving biological conservation and wildlife management problems. Consists of interactive lectures, readings (including a text and primary literature) and discussion, and hands-on, inquiry-based experiential learning while working in groups at the National Zoo to design and conduct independent behavioral-based research on endangered species. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)
Specialized Designation: Green Leaf Related Course
Schedule Type: Seminar
**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 404: Ethics and Leadership.** 4 credits.
Uses an interdisciplinary approach to deepen and broaden student’s learning about theories, models, and constructs related to the study and practice of ethics and leadership. Teaches students to develop ethical decision making strategies, communicate effectively in diverse group settings, value civic engagement and actively apply ethical leadership skills. Includes experiential learning activities and discussions that connect formal knowledge with real world experiences and includes one credit of experiential learning. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 405: Women and Leadership.** 4 credits.
Examines leadership within the context of the theoretical principles of women's studies through discussion of course texts, interactive exercises, field trips, documentary films, guest speakers, and reflection. Investigates the role that gender plays in the various forms of leadership and leadership styles. Explores the historical record of women in leadership roles, identifying the barriers as well as the opportunities. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 406: Global Leadership.** 3 credits.
Develops a concept of global leadership, emphasizing the critical importance of ethical decision-making, social responsibility, and cultural awareness. Students formulate the construction process of a global mindset and begin to develop a personal philosophy of global leadership. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 410: Contemporary Health Issues.** 3-18 credits.
Looks at a variety of health and health care issues. Examines several of the major health concerns of women and, to a lesser degree, men. Also explores the biology and medical implications of these diseases and how our society deals with potential life-altering information. Examines who is making the decisions on the allocation of research funds and prevention of diseases. Offered by School of Integrative Studies (p. 574). Limited to three attempts. Equivalent to WMST 300.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 416: Refugee and Internal Displacement.** 3 credits.
Provides students with a deeper understanding of refugee and internal displacement. Explores causes of displacement and its impact on people and societies. Studies the role played by governments, non-governmental organizations (NGOs) and the international community in addressing problems faced by refugees in internally displaced persons in terms of relief assistance and humanitarian services. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 417: Human Trafficking and the International Community.** 3.6 credits.
Explores the complexity of human trafficking, one of the fastest growing criminal enterprises in the world. Examines forms of human trafficking and the countries that serve as source, transit or destinations of trafficked individuals and groups. Studies the role of the international community in addressing trafficking, including regional and national authorities and non-governmental agencies. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 420: Work Effectiveness Skills.** 3 credits.
Develops a variety of work-readiness skills needed to become successful in both local and global marketplaces. Topics and skills covered include communication, problem solving in the business setting, workplace ethics, listening skills, how to influence others, building team project rapport, and meeting effectiveness skills. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 422: An Experiential Approach to American Foreign Policy.** 3-6 credits.
Takes an experiential approach to the study of American foreign policy. Through case studies, discussions, group projects, and directed research, students learn how foreign policy is made and executed and how they as citizens, activists, or officials can influence national decisions. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 431: Principles of Fund Raising.** 4 credits.
Examines history of philanthropy and public policy, and the economic and legal frameworks that shape it. Combining theory and practice, students study human behavior, communications, and management systems that are hallmarks of successful fund raising, and begin to develop skills to generate donations, foundation grants, and other unearned revenue for a nonprofit organization. Notes: Includes 1 experiential learning credit. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Recommended Prerequisite:** INTS 331.

**Schedule Type:** Seminar
**INTS 434: Research for Social Change.** 3 credits.
Introduces interdisciplinary research methods for social change. Explores students' epistemological assumptions, and use tools of inquiry and discovery to explore transformative approaches to scholarship. Examines multiple critical approaches to inquiry including auto-ethnography and ethnography, feminist and indigenous research methods, participatory action research, critical quantitative analysis, and more. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**Recommended Prerequisite:** 60 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 435: Leadership in a Changing Environment.** 4 credits.
Examines diverse definitions and processes of change across multiple complex contexts. Focuses on identifying innovative, collaborative solutions to seemingly intractable social problems. Explores topics such as social change and globalization, creative conflict resolution, the nature of power, oppression and influence, and systemic leadership. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**Recommended Prerequisite:** NCLC or INTS 345, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 436: Social Justice Education.** 4 credits.
Examines educational policy, practice, and materials using a variety of lenses informed by social justice theory and praxis. Investigates ways in which racism, sexism, economic injustice, heterosexism, ageism, and other forms of discrimination influence schools and educational access and opportunity for youth. Considers and practices what individuals and communities can do to ensure that all students have equitable educational opportunities. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 437: Critical Race Studies.** 3 credits.
Engages students in an examination of the forms and impacts of racism, as well as movements for racial justice, in the United States. Draws on theoretical frameworks including critical race theory and intersectionality theory in order to examine the structural roots of racism and the implicit and explicit ways in which racism manifests today. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 438: Representations of Race.** 4 credits.
Investigates the social and cultural construction of racial categories that have led to inaccurate and stereotypical representations that persist and cause harm today. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Social/Behavioral Sciences (p. 142)

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 440: Death, Dying, and Decision Making.** 3 credits.
Interdisciplinary examination of clinical care of dying persons along with psychosocial issues related to processes of death and dying. Special emphasis on application of ethical principles in resolving complex problems for individuals with life-threatening illnesses and their families as care givers or decision makers. Students consider the changing norms and mores surrounding end-of-life decisions and explore the care available to terminally ill patients. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Recommended Prerequisite:** 60 credits or Permission of Instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 445: Multimedia Design.** 5 credits.
Technological, aesthetic, and educational issues of using interactive multimedia. Topics include theory and practice, integration of digital media, interface and navigation studies, and technical constraints on design. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Info Tech (complete) (p. 142)

**Recommended Prerequisite:** NCLC or INTS 345, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 446: Art, Beauty, and Culture.** 3-6 credits.
Designed to help students understand the culture- and time-bound nature of beauty as it relates to art. Exploration of how the codes of acceptability in art forms have changed over time, with discussion about the subversive nature of art and the role that beauty plays in art that is created to engage the viewer in some type of action. Exercises include research projects, site visits, and gallery attendance. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Mason Core:** Arts (p. 142)

**Specialized Designation:** Writing Intensive in Major

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
**INTS 450: Social Innovation in Action.** 4 credits.
Develops students' capacity to engage in positive social change. Examines social innovation approaches, including social and political entrepreneurship, philanthropy, corporate responsibility and social movements. Explores how social innovators catalyze multistakeholder collaborations across commercial, governmental and nonprofit sectors, exploring social innovation through case studies, best practice analyses and relevant readings. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 451: Leadership and Organizational Problem-Solving.** 4 credits.
Offers a dynamic, practical, and hands-on approach to synthesizing our leadership philosophy with real problem-solving and decision-making skills. Through cases and experiential learning, students will work through framing and diagnosing problems as well as identifying and implementing solutions. Integrates students' interests with the tools necessary to be an organizational problem-solver. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 455: Consciousness and Transformation in Action.** 3 credits.
Covers how principles and practices of consciousness and transformation relate to the major and career pathway it represents. Includes the theory and practices for deepening the student's own experience with the mindfulness and contemplative approaches to inquire. Capstone course for the minor in consciousness and transformation. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Recommended Prerequisite:** NCLC 355 or INTS 355.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 465: Independent Study.** 1-12 credits.
Individualized section form required. Study of a topic not otherwise available to the student. May involve any combination of reading assignments, tutorials, lectures, papers, presentations, or field/laboratory study (determined in consultation with instructor) Students are encouraged to work as a team on a particular topic. Notes: Maximum 12 credits can be used to fulfill graduation requirements. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 12 credits.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 470: Professional Pathways in Sustainable Food Systems.** 1 credit.
Culminating experience for Environmental and Sustainability Studies majors enrolled in the Sustainable Food and Agriculture concentration. Focused on helping students see how their specific talents, interests and experiences can prepare them for specific professional roles within the emerging field of sustainable food systems. Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 475: Special Topics.** 1-18 credits.
Studies topics of special interest to undergraduates. Notes: May be repeated for credit when topic is different. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 18 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 490: Internship.** 1-6 credits.
Internship credit may be applied to 12 credits required in experiential learning. Notes: Students may take no more than 6 credits in any one semester, unless approved by director of experiential learning or executive director. Structured and supervised professional experience, within an approved agency, for which the student earns academic credit. The primary purpose of an internship is to connect the student's academic course work to experiences and challenges outside the university classroom. The faculty also expects that students will enhance their competencies and skills and explore career options. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** Sophomore standing and permission of instructor.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**INTS 491: The Senior Capstone Experience.** 3 credits.
Should be taken semester before graduation; 85 credits required. Graduation requirement for integrative studies students. Students complete final SIS portfolio and senior exposition. Provides information on issues of professional development (interviewing skills, resume development, career strategies, and alumni opportunities). Offered by School of Integrative Studies (p. 574). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INTS 492: Graduation Portfolio.** 0 credits.
Offered by School of Integrative Studies (p. 574). May be repeated within the degree.

**Specialized Designation:** Writing Intensive in Major

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Service-learning courses offer students, faculty, and community partners an opportunity to work together to integrate and apply knowledge to address community needs. Learning goals, action strategies, and assignments developed collaboratively. Students demonstrate progress through critical reflection that illustrates growth in acquiring and comprehending values, skills, and knowledge content. Critical reflection may take the form of papers, presentations, portfolios, journals, and exams. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 15 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 495: Field-Based Work. 1-18 credits.
Directed field studies in topic not otherwise available to students. Notes: Topics vary, but entire course or significant component is located off campus. In addition to field work, course may also include reading assignments, tutorials, lectures, papers, presentations, portfolios, journals, and exams. Students bear costs of required field trips and should consult the Center for Social Action and Integrative Learning for more information. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 24 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 496: Teaching Assistant Experience. 1-6 credits.
Teaching assistantship and peer-mentoring duties carried out through existing university programs, such as technology assistants, writing tutors, and residence advisors. Also includes teaching assistantship arrangements for specific courses detailed in individualized course contract signed by instructor and student. In addition to peer mentoring/advising, course work may include logistical support, reading assignments, papers, presentations, and portfolios. Offered by School of Integrative Studies (p. 574). May be repeated within the degree for a maximum 15 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 497: Add-On Experiential Learning. 1-3 credits.
For students who wish to add one or more experiential learning credit to existing experiential learning course or learning community. Notes: May also be used by students who wish to add an experiential learning component to course that provides no experiential learning credit (with permission of instructor). Unless experiential learning add-on requirements are spelled out in course syllabus, requirements for add-on experiential learning credit must be detailed in individualized course contract signed by instructor and student. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 4 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INTS 498: Field-Based Work. 1-15 credits.
Experiential-based individualized studies, mentored by instructor. Notes: Topics decided by student and instructor and approved by executive director. Requirements must be detailed in individualized course contract signed by student, instructor, and executive director. May include reading assignments, papers, journals, and portfolios. Offered by School of Integrative Studies (p. 574). May be repeated within the term for a maximum 15 credits.

Specialized Designation: Writing Intensive in Major

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

500 Level Courses

INTS 500: Animal Rights: Issues and Movements. 3 credits.
Explores forms of animal exploitation and abuse, and examines the relationship between humans and non-human animals, drawing from a variety of disciplines and fields such as feminist studies, animal studies, sociology, ethics, critical studies, and environmental studies. Assessment of the methods and strategies used by organizations and movements in order to redress animal exploitation. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

INTS 504: Leadership Theory, Praxis, and Development. 3 credits.
Explores contemporary leadership theories, models, and concepts using a theory-to-practice-to theory framework. Covers leadership theory, supporting research, and practical application. Focuses on active learning through classroom presentations, course texts, a reflection on theory and practice, and team work. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)
Introduces interdisciplinary research methods for social change. Explores students' epistemological assumptions, and employs methods of inquiry and discovery to explore transformative approaches to scholarship. Examines multiple critical approaches to inquiry, including auto-ethnography and ethnography, feminist and indigenous research methods, participatory action research, critical and quantitative analysis. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Examines change and its elements by asking students to explore and design innovative, collaborative solutions to seemingly intractable social problems. Considers and discerns topics such as social change and globalization, creative conflict resolution, the nature of power, oppression and influence, and systemic leadership. Explores methods of personal and social transformation and examine the strategies, and ideas of effective social change advocates in the 21st century. By the course's end, each student will develop a creative proposal for solving a societal problem. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

INTS 537: *Critical Race Studies*. 3 credits.
Engages students in an examination of the forms and impacts of racism, as well as movements for racial justice in the United States. Draws on theoretical frameworks including critical race theory and intersectionality theory in order to examine the structural roots of racism and the implicit and explicit ways in which racism manifests today. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

INTS 538: *Representations of Race*. 4 credits.
Investigates the social and cultural construction of persistent and harmful racial categories. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Students will examine, study the socio-historical significance of, and consider solutions for some of the most pressing social justice and human rights issues in the world today. The issues examined will cut across identity, region, and scope, and may include concerns as varied as human trafficking, hegemony, animal abuse, child labor, and sexism. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

INTS 550: *Social Innovation In Action*. 3 credits.
Develops students' capacity to engage in positive social change. Examines social innovation approaches, including social and political entrepreneurship, philanthropy, corporate responsibility and social movements. Explores how social innovators catalyze multistakeholder collaborations across commercial, governmental and nonprofit sectors, exploring social innovation through case studies, best practice analyses and relevant readings. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

INTS 575: *Special Topics*. 3-4 credits.
Studies topics of special interest to graduate students pursuing integrative, multidisciplinary degrees. Offered by School of Integrative Studies (p. 574). May not be repeated for credit.
Interdisciplinary Studies (MAIS)

600 Level Courses

MAIS 600: Special Topics in Interdisciplinary Studies. 3 credits. Examines broad social, cultural, political, environmental, and scientific issues through a variety of disciplinary lenses. Topics vary. Offered by School of Integrative Studies. May be repeated within the term for a maximum 6 credits.

Registration Restrictions: Enrollment limited to students with a class of Graduate or Non-Degree.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MAIS 795: Experiential Learning. 1-3 credits. Provides practical work experience via an internship, service-learning project, consultancy, or field study that the student brokers with a third party. Students may not use work done previously or their current employment for course credit. All experiential learning placements must be approved by the student's concentration head prior to registration to ensure suitability to the student's program. Offered by Interdisciplinary Studies. May be repeated within the degree for a maximum of 3 credits.

Recommended Prerequisite: 12 graduate credits in the Interdisciplinary Studies program or permission of the program director.

Registration Restrictions: Enrollment limited to students in a Master of Interdisciplinary Studies degree.

Schedule Type: Internship

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MAIS 796: MAIS ProSeminar. 1 credit. Introduces students to the structure of the MAIS program; students create a portfolio of their work which continues during their studies; the portfolio prepares students for the capstone project or thesis. Offered by Interdisciplinary Studies. May not be repeated for credit.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MAIS 797: Interdisciplinary Studies Proposal. 1 credit. Focused on formulating and writing a MAIS project or thesis proposal. Offered by Interdisciplinary Studies. May not be repeated for credit.

Recommended Prerequisite: Admission to MAIS and completion of 21 credits of graduate course work, including any required research methodology course; MAIS 796.

Registration Restrictions: Enrollment limited to students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MAIS 798: Interdisciplinary Studies Project. 1-5 credits. Research project related to student's concentration taken under supervision of faculty advisor and project evaluation committee. Offered
by Interdisciplinary Studies. May be repeated within the degree. Equivalent to HE 798.

**Recommended Prerequisite:** MAIS 797 and prior approval of a project proposal by the committee chair, two committee members, and MAIS director.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**MAIS 799: Interdisciplinary Studies Thesis.** 1-5 credits.
Original research endeavor related to student's MAIS program concentration. Research must result in document meeting MAIS and university standards. Offered by Interdisciplinary Studies. May be repeated within the degree. Equivalent to HE 799.

**Recommended Prerequisite:** MAIS 797 and prior approval of a project proposal by the committee chair, two committee members, and MAIS director.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**International Commerce and Policy (ITRN)**

**500 Level Courses**

**ITRN 500: Global Political Economy.** 1-4 credits.
Foundation course in the ICP program. Explores issues and ideas affecting global security, stability, growth and development from country, regional and thematic perspectives. Introduces students to key concepts, policies, and practices that underpin international commerce, international relations more broadly, and non-governmental transnational activities. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**ITRN 501: Methods of Analysis for International Commerce and Policy.** 3 credits.
Provides the skills necessary to conduct qualitative and quantitative research and analysis of issues related to international commerce and policy. Students obtain practical information on sources of data, their origins, strengths, and weaknesses. Helps develop tools for statistical analysis of data, and includes use of computers for analyzing and displaying information. It covers major data sources as well and literature and indices related to international policy, including trade data, economics and financial indicators, and development indicators. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 503: Macroeconomic Policy in the Global Economy.** 1-4 credits.
Provides an analytical introduction and overview of basic concepts in macroeconomic theory with an emphasis on applications to problems in the United States and the contemporary global economy. Covers topics such as inflation, growth and business cycles, fiscal and monetary policies, balance of payments and exchange rates. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 504: Microeconomics and Trade Policy.** 1-4 credits.
Provides a foundation in microeconomics, including supply and demand analysis, elasticities, the theory of the firm, allocative efficiency and market failure. Covers applications of this microeconomic foundation to international trade theory, trade policy analysis, preferential trade agreements, and international production. Emphasis is on graphical and algebraic analysis. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
600 Level Courses

**ITRN 602: Global Financial Crises and Institutions.** 3 credits.
Examines the modern financial sector: how it operates, its regulation, and its role in risk transmission and crisis formation. Reviews global financial markets and instruments. Considers the role of multilateral and regional financial institutions in management of crises, macroeconomic adjustment, development policy and capital flows with emphases on financial crises including the 2007-09 crisis. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** ITRN 503.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 603: Global Trade Relations.** 3 credits.
Examines U.S. trade policy in the context of global trade relations. Considers the global trading system from legal, institutional and political perspectives, giving particular attention to trade agencies in the United States and abroad, international agreements, and the World Trade Organization. Trade policy formation is analyzed within the context of competing interest groups and corporate strategies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** ITRN 504.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 604: International Trade and Technology.** 3 credits.
Examines science, technology, and international trade. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 605: Technology, Culture and Commerce.** 3 credits.
Examines and applies the major dimensions of technological and cultural analysis to global commerce and policy. The course assesses theories of technological change and cultural perspectives that have relevance to the flows of peoples, information, goods, capital and technology across national and cultural boundaries. It focuses on the political economy implications of technological change for commercial, national and global policies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 612: International Business Operations and the Multinational Corporation.** 3 credits.
Examines international business environment and challenges facing companies in conducting operations in increasingly interconnected global marketplace. Focuses on issues of management and organization, and resolution of conflicts that may arise between business organizations and home and host governments. Also focuses on role of multinational corporations in international environment, and impact on global trade, economic development, and political system. Also studies trade and international investment theories and world financial environment. Explores broad issues such as sovereignty of decision making and global impact of business activities. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
700 Level Courses

ITRN 701: Special Topics in International Commerce and Policy. 1-3 credits. Offers specialized courses on various aspects of international commerce and policy. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

ITRN 702: Special Topics in International Commerce and Policy: Study Abroad. 3-6 credits. Provides opportunity for study abroad under supervision of Mason faculty. Notes: Course topics, content, and locations vary. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 710: International Business Transactions: Finance and Investment. 3 credits. Focuses on techniques for financing trade and payment methods, including letters of credit, counter trade, and other approaches. Covers issues of direct concern in financing international business operations, such as preparing financing proposals, risk insurance, international taxation, pricing policies, and currency conversion and foreign exchange risk management. Introduces foreign direct investment, alliances and acquisitions, joint ventures, and other methods for investing overseas. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 711: United States Law and Global Trade. 3 credits. Surveys types of regulations imposed by United States, foreign governments, and international institutions on transnational business activities. Reviews principal regulatory bodies in United States and overseas, and powers and authorities. Covers tariffs and customs regulations; product safety and environmental restrictions; intellectual property, copyright, trademark, and patent regulations; and licensing rules. Also covers special restrictions that may be imposed because of political considerations such as embargoes, munitions controls, and antibribery and antiboycott regulations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 712: World Trade Organization and Global Trade. 3 credits. Focuses on legal aspects of international trade regulation by studying international legal and political regime established under WTO, and assessing impact of domestic economic legislation on U.S. trade regulations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 715: Global Environment and the World Economy. 3 credits. Examines growing relationship between environmental interdependence and developing world economy. Assesses increased globalization of environmental and health issues with a focus on the impact on those issues on international transactions involving trade and development. Attempts to develop an understanding of relationship of scientific knowledge to global environment in context of existing political and economic institutions. Emphasizes formulating and assessing policies and structures for corporations, nations, regions, and international organizations. Tensions among free trade, international competitiveness, and regulatory responses are central. Gives attention to practices of nations and international organizations, emerging forms of regional and international cooperation, and growing use of multilateral agreements. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 716: European Union in the International System. 3 credits. Examines current developments in European market integration from global perspective. Emphasizes impact of single market, and proposed economic and monetary union of United States and other major trading partners. Examines European economic relations with Eastern Europe, former Soviet Union, and Lome Pact countries. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 717: International Science and Technology.** 3 credits.
Examines U.S. science and technology policies (S&T) and structures, as well as those in other leading countries. Assesses functional links between S&T and international transactions focusing on trade, national security, finance, and development assistance. Considers emergence of multilateralism and international institutional arrangements as alternatives to traditional bilateral patterns of cooperation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 720: Regional and Supranational Organizations.** 3 credits.
Assesses role of international organizations in international system today, and focuses on wide range of international and regional economic and political institutions. Emphasizes changing nature of these organizations in relation to nation states, and relationship of international organizations to U.S. national security and economic interests. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 731: Business-to-Business Marketing in International Commerce.** 3 credits.
Provides understanding of concepts of international marketing process and international environment within which companies operate. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 736: Sources of Growth in East Asia.** 3 credits.
Examines extraordinary economic success of East Asian NIEs and some of their problems. Focuses on understanding proximate sources of growth, role of technological development, and salient political issues.

Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 738: Fundamentals of International Marketing.** 3 credits.
Offers working knowledge of principles and practices that enable managers to effectively market organizations, products, services, and brands. Emphasizes international dimensions of marketing where appropriate. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 740: Trade and Regulatory Compliance.** 3 credits.
Acquaints students with legal, regulatory, and practical issues in importation and exportation of merchandise. Topics include theoretical framework for government oversight of international movement of goods; legal issues between parties and governments; and practical guidance concerning structuring of import and export transactions to avoid legal and tariff liability. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 742: Technology Policy and International Strategies.** 3 credits.
Introduces opportunities and problems created for organizations and society by Internet, and policies affecting trajectory of Internet developments. Also covers technological factors in planning horizon; domestic policy and international treaty factors affecting Internet trajectory; and new horizons for Internet applications. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** ITRN 500.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 744: The Politics of International Competitiveness.** 3 credits. Provides inquiry into governance problems of public managers and political leaders as they cope with global competitiveness in post-industrial era. Focuses on integrating public and private sectors worldwide, with special emphasis on U.S. role and how it influences such areas as technology transfer, national security, electronic commerce, trade policies, money flows, and human resources. Offered by Schar School of Policy & Govt. (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** ITRN 500.

**Registration Restrictions:** Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 750: Trade and Politics in Eastern Europe and the Former Soviet Union.** 3 credits. Examines background and recent developments in political, business, and cultural environment confronting American firms seeking to do business in Eastern Europe and former Soviet Union. Emphasizes international trade patterns and relations between these states and United States. Examines modes of doing business in these countries, and unique problems American firms confront. Focuses on privatization, joint ventures, and counter trade. Offered by Schar School of Policy & Govt. (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** ITRN 500.

**Registration Restrictions:** Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 752: Global Business and Policy.** 3 credits. Focuses on the multinational firm (MNE) and examines the international activities of large companies as well as small and medium sized enterprises. Assesses how firms strategize across national borders and address the challenges posed by different governance structures, political economies, institutions and cultures. Theoretical concepts are applied to 'real' business situations and case studies. Offered by Schar School of Policy & Govt. (p. 961). May not be repeated for credit.

**Registration Restrictions:** Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 754: International Commercialization of Space.** 3 credits. Identifies and analyzes problems and transactions concerning privatization and commercialization of transnational space activities, including launch and satellite operations. Emphasizes interplay of new technologies with existing legal, political, and business structures in formulating viable commercial satellite and launch operations. Focuses on planning and implementing private space actions in conjunction with various public and private international organizations. Sessions focus on interdisciplinary aspects of space commercialization involving technology, finance, tax, insurance, joint venture and business matters, and international legal and national regulatory issues. Guest lecturers include leading business executives engaged in space and satellite operations. Offered by Schar School of Policy & Govt. (p. 961). May not be repeated for credit.

**Registration Restrictions:** Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 756: National Security and the Global Economy.** 3 credits. Examines impact of globalization and changes in international economic and political systems on concepts of national security. Emphasizes nexus of economic and security concerns in post-Cold War era, with particular attention to emerging issues including trade and economic security, proliferation of advanced military technology and control of weapons of mass destruction, international drug trafficking, and defense conversion. Focuses on implications of changing security requirements on U.S. defense and economic policy and activities. Offered by Schar School of Policy & Govt. (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** ITRN 500.

**Registration Restrictions:** Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 758: Global Market Planning Practicum.** 3 credits. Provides opportunity to develop international market plan for specific industry or service sector. Students consult with industry experts and use key trade databases to develop strategic plan that recommends market entry strategies. Completed market plan submitted to industry experts for use and dissemination. Offered by Schar School of Policy & Govt. (p. 961). May not be repeated for credit.

**Registration Restrictions:** Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
ITRN 759: *Country Risk Analysis.* 3 credits.

Presents a wide variety of country risk analysis methods used by corporations, financial institutions, governments, international organizations, specialized consulting groups, and publications. These methods are used to design policies, programs, and projects in the international arena. The course explores natural, commercial, economic, political and financial risk. It also provides a conceptual foundation for understanding the sources of risk, the impacts of risk on public and private sector activities, and the ways that risk can be successfully mitigated or managed. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 760: International Environmental Politics.** 3 credits.

Examines growing concerns related to global environmental issues and problems they pose to domestic, foreign, and international political institutions. Covers major environmental issues including global warming, ozone depletion, cross-border flow of pollution, and threats to biodiversity. Assesses strengths and weaknesses of traditional political institutions in dealing with these issues for sustainable economic development while limiting environmental damage. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Specialized Designation:** Green Leaf Focused Course

**Recommended Prerequisite:** ITRN 500.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 761: European Political and Economic Union.** 3 credits.

Examines movement for European integration since World War II, focusing on political and institutional development of European Community/Union. Topics include theories of European integration, Treaties of Rome, Single European Act, Maastricht Treaty, European Union (EU) policies and programs, and EU’s external relations. Analyzes changing nature of U.S.-EU relations and prospects for EU enlargement into Central and Eastern Europe. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 764: Trade, Investment, and Politics in East Asia.** 3 credits.

Examines issues related to international transactions involving Korea, China, Taiwan, and Hong Kong, with some attention to Japan. Focuses on trade and financial relations between these East Asian nations and United States. Assesses impact of culture and domestic political and economic institutions within these states, and roles in regional institutions and in international system. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 765: Trade, Investment, and Politics in Sub-Saharan Africa.** 3 credits.

Examines role and potential of sub-Saharan Africa in international trading system. Emphasizes political, historical, cultural, and development factors. Focuses on perspectives of U.S. firms and on international institutions trading or investing in region. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 766: Trade, Investment, and Politics in the Middle East and North Africa.** 3 credits.

Examines major economic, political, and cultural issues that influence trade and investment relations with Middle East and North Africa. Focuses on roles of international and regional institutions in economic development, and develops understanding of challenges facing region and their implications for formulating trade and investment strategies by U.S. firms. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** ITRN 500.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ITRN 767: Political Economy and Integration in Latin America.** 3 credits.

Examines contemporary political, economic, and cultural dynamics of Latin American and Caribbean regions. Emphasizes issues and trends that affect U.S.-Latin American political, business, and trade relations, particularly recent political and economic reforms. Examines roles of domestic interest groups and decision-making systems in individual countries, and evolution of regional integration arrangements and...
integration with international system. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 768: Global Intellectual Property Rights and International Trade. 3 credits.
Examines national and regional systems, international contractual relations (licensing), and the evolving global system for protecting intellectual property. Addresses current international treaty system and the ongoing multilateral efforts to strengthen worldwide intellectual property protection. Examines intellectual property regimes worldwide, including regional and bilateral challenges and opportunities, and relevant U.S. law and policy responses. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: ITRN 500.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 769: International Entrepreneurship. 3 credits.
Introduces practical planning approach for small and medium-size entrepreneurial firms seeking to enter international marketplace. Focuses on key business and financial documents related to doing business overseas; and assesses role of language, technology, and information systems in formulating successful business strategy. Role playing and simulated negotiations provide opportunities for students to sharpen business skills. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 770: International Contract Negotiation. 3 credits.
Reviews growing role of arbitration in international transactions. Examines international, national, and government arbitration bodies, with particular emphasis on how differing cultural characteristics affect negotiating behavior and effectiveness of arbitration. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 771: Trade, Investment, and Politics in South and Southeast Asia. 3 credits.
Focuses on trade and finance issues in the most dynamic countries of South and Southeast Asia. Assesses cultural and political factors, regional trade patterns, and institutions, focusing on implications for regional development and business opportunities for U.S. firms. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: ITRN 500.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 772: International Telecommunications. 3 credits.
Focuses on developments in international telecommunications and satellite regulation. Examines regulatory environment, and business and financial aspects of global telecommunications industry. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 773: International Strategic Management. 3 credits.
Presents comprehensive approach to international strategy formulation, implementation, and evaluation processes affecting policy and program development within multinational firms and government agencies. Integrates marketing, finance, accounting, and management. Covers techniques for forecasting international business, political, economic, technological, legal, and sociocultural forces. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ITRN 777: Advanced Trade Policy. 3 credits.
Examines dispute settlement regimes, and relationship between trade and environment. Includes WTO and constituent agreements in the areas
of goods, services, intellectual property, and trade-related investment measures. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

International Year One (INYO)

000 Level Courses

INYO 044: Business Math Preparation. 2 credits.
Notes: The successful completion of this course will serve as a prerequisite for MATH 108 in lieu of the Math Placement Test. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 6 credits. Equivalent to MATH 008.

Recommended Prerequisite: AE Level 3 Core AE Level 3 OCS or admission to an INTO Mason Pathway program.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Seminar

Grading:
This course is graded on the ABC/NC Undergraduate Special scale. (p. 84)

INYO 045: STEM Mathematics Preparation. 2 credits.
Notes: The successful completion of this course will either: a) Serve as a prerequisite for Math 105 Pre-Calculus in lieu of the Math Placement Test or b) Prepare the student to achieve the necessary score on the Math Placement Test for entry into MATH 113. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: AE Level 3 Core AE Level 3 OCS or admission to an INTO Mason Pathway program.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Seminar

Grading:
This course is graded on the ABC/NC Undergraduate Special scale. (p. 84)

INYO 095: Quantitative Preparation for the Graduate Record Examination. 0 credits.
Prepares students in the International Graduate Pathways requiring the general Graduate Record Examination test (GRE) for progression to take the computer adaptive version of the exam along with testing strategies; identifying common test-taking errors; and managing test anxiety. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 0 credits. Equivalent to EAP 097, INYO 096, INYO 097.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

INYO 096: Verbal and Quantitative Preparation for the Graduate Record Examination. 0 credits.
Prepares students in International Graduate Pathways requiring the general Graduate Record Examination test for progression to take the exam for students whose pathways require a primary focus on verbal and quantitative sections. This course emphasizes test language and vocabulary, in addition to: testing strategies; practicing logical, rhetorical, and mathematical problem-solving; identifying common test-taking errors; and managing test anxiety. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 0 credits. Equivalent to EAP 097.

Registration Restrictions:
Enrollment is limited to English Language level students.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

INYO 097: Verbal, Quantitative, and Academic Writing Preparation for the Graduate Record Examination. 0 credits.
Prepares students in International Graduate Pathways requiring the general Graduate Record Examination test (GRE) for progression to take the exam for students whose pathways require a primary focus on verbal, quantitative, and academic writing preparation; practicing mathematical problem-solving; identifying common test-taking errors; and managing test anxiety. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 0 credits. Equivalent to EAP 097.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

100 Level Courses

INYO 100: Transition INTO Mason I. 1 credit.
Assists first-year international and multilingual Year One students with their transition from high school to college life. It helps prepare students for successful progression to their chosen degree plan by promoting acculturation to academic norms and expectations at Mason, the development of self-efficacy, and engagement with the Mason community. It encourages to seek out and take full advantage of a wide range of campus resources. Offered by INTO Mason (p. 130). Limited to three attempts. Equivalent to UNIV 100, UNIV 140.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

INYO 101: Transition INTO Mason II. 1 credit.
Serves as a continuation of INYO 100. It provides extended first-year transition support for standard pathway students in the second semester. Offered by INTO Mason. May not be repeated for credit. Equivalent to
UNIV 101, UNIV 141 Offered by INTO Mason (p. 130). Limited to three attempts.

**Registration Restrictions:**
- Required Prerequisite: INYO 100<sup>C</sup>
  - <sup>C</sup> Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**INYO 103: Precalculus Support for INTO Mason Year One.** 1 credit.
INOY 103 is a support course for INTO Mason students enrolled in MATH 105. In this course, students will learn to use and identify the language of Precalculus Mathematics and students will be provided guided practice activities to reinforce the MATH 105 lectures. Offered by INTO Mason (p. 130). Limited to three attempts.

**Recommended Corequisite:** MATH 105

**Registration Restrictions:**
- Enrollment is limited to English Language level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**INYO 104: Linear Modeling Support for INTO Mason Year One.** 1 credit.
INOY 104 is a support course for INTO Mason students enrolled in MATH 111. In this course, students will learn to use and identify the language of Linear Modelling and students will be provided guided practice activities to reinforce the MATH 111 lectures. Offered by INTO Mason (p. 130). Limited to three attempts.

**Registration Restrictions:**
- Required Prerequisite: MATH 111<sup>C</sup>.
  - <sup>C</sup> May be taken concurrently.
  - <sup>C</sup> Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**INYO 105: American Cultures.** 3 credits.
This course provides an introduction to US cultures with a focus on diversity within American society. The course uses the concept of culture as a basis for discussing differences in Americans’ experience of family life, work, education, the arts, national and ethnic identities, gender, religion and more. Through ethnographic readings, literature, film and field projects, students develop a better understanding of similarities and differences across the American experience. Offered by INTO Mason (p. 130). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Recommended Prerequisite:** Admission to the INTO Mason Undergraduate Pathway program.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**INYO 106: Introduction to Research Methods for International Students.** 3 credits.
Academic research is the fundamental element of university-level education. Despite the variations in research disciplines, they all share basic concepts of academic inquiry. This course is designed to teach the methods, norms and procedures of undergraduate research in the humanities and social sciences. It should equip international students with the essential skills needed to successfully produce a quality academic paper. Offered by INTO Mason (p. 130). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry.

**Recommended Prerequisite:** Admission to the INTO Mason Undergraduate Pathway program.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**200 Level Courses**

**INYO 206: International Peer Learning Partnership.** 0-1 credits.
This course is an experiential credit course for undergrad students partnering with Undergraduate International Pathway Program students to develop academic skills. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of at least 15 credits at Mason with a GPA of 3.0 or higher and a program participation offer from INTO Mason.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**INYO 207: International Peer Educational Leadership.** 0-3 credits.
This course is an experiential leadership course for students partnering with Undergraduate International Pathway Program students as peer educational mentors. Offered by INTO Mason (p. 130). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Sophomore status or higher.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**500 Level Courses**

**INYO 501: Graduate Transitions for International Students I.** 2 credits.
Designed for the Graduate International Pathways program, this course is the first of a two-part transitional course series for international students. This course covers an introduction to the U.S. higher education environment, engagement with university resources and policies, and development of graduate-level academic skills. Notes: This course is for graduate students whose highest degree is from a non-US institution. This course may not count towards academic degree requirements at the graduate level. Enrolled students are required to take INYO 502 the following consecutive semester. Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to English Language, Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**INYO 502: Graduate Transitions for International Students II.** 2 credits.
Designed for the Graduate International Pathways program, this course is the second of a two-part transitional course series for international students. This course covers academic adjustments to study in the U.S., graduate study and career readiness, and communicating academic progress and career goals through digital portfolios. Notes: This course is for graduate students whose highest degree is from a non-US institution. Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**INYO 504: Accelerated Graduate Transitions for International Students.** 3 credits.
Designed specifically for international students at INTO Mason who are enrolled in a one-term Graduate International Pathway, this course emphasizes academic adjustments to study in the U.S., engagement with university resources and policies, and communicating academic progress and career goals through digital portfolios. Notes: This course is for graduate students whose highest degree is from a non-US institution. Offered by INTO Mason (p. 130). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**INYO 508: Special Topics Content Support in the Disciplines.** 0-6 credits.
This Special Topics Content Support in the Disciplines course is tailored to international students enrolled in the INTO Mason Graduate Pathways Program. The courses will be designed to support INTO Mason graduate students in their major courses, providing individualized feedback and foundational information for those courses. Offered by INTO Mason (p. 130). May be repeated within the term for a maximum 6 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**Italian (ITAL)**

**100 Level Courses**

**ITAL 101: Elementary Italian I.** 3 credits.
Designed for students with no prior knowledge of Italian. Includes elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Notes: Students may not receive credit for ITAL 101 and ITAL 110. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to ITAL 110.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ITAL 102: Elementary Italian II.** 3 credits.
Continuation of ITAL 101. Notes: Students may not receive credit for ITAL 102 and ITAL 110. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to ITAL 110.

**Recommended Prerequisite:** ITAL 101.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ITAL 110: Elementary Italian.** 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Notes: Students may not receives credit for ITAL 110 and ITAL 101 or 102. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to ITAL 101, ITAL 102.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**ITAL 201: Intermediate Italian I.** 3 credits.
Further development of skills in listening, speaking, and writing. Notes: ITAL 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** ITAL 102, ITAL 110, or permission of department.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ITAL 202: Intermediate Italian II.** 3 credits.
Application of language skills to reading, composition, and discussion. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.
Recommended Prerequisite: ITAL 201 or permission of department.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

ITAL 320: Topics in Italian Film and Literature. 3 credits.
Explores Italian history through the lens of literary and cinematic movements from 1911 onwards. Compares the representations of historical movements in different artistic languages, from poetry and prose to the moving image. Topics include neorealism, Fascism, the Resistance, the Mafia and others. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Literature (p. 142)

Recommended Prerequisite: ENGL 101, or equivalent.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ITAL 325: Major Italian Writers. 3 credits.
Works of major Italian or Italian-American authors in translation. Writers to be studied vary. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Mason Core: Literature (p. 142)

Recommended Prerequisite: ENGL 101/ENGH 101 or equivalent or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ITAL 330: Advanced Italian: Language and Culture I. 3 credits.
Develops linguistic and critical proficiency in Italian language and culture for students who have completed intermediate studies in Italian. Analyzes authentic texts that reveal the diversity of Italian experience in regional, national and international contexts. Fosters advanced reading, writing, speaking, and listening skills that will enable students to understand and to critique Italian with greater ease and sophistication. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: ITAL 202, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ITAL 340: Italian through Arts. 3 credits.
Develops linguistic proficiency and historical and cultural awareness through the study of a thematic selection of films. Fosters advanced reading, writing, speaking, and listening skills, incorporating advanced-level grammar and vocabulary in a content-based approach. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: ITAL 330; placement score or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ITAL 360: Southern Italy. 3 credits.
Examines the history and culture of southern Italy with an eye toward cultural and linguistic competence. Students analyze authentic texts ranging from literature to journalism that treat a specific area of southern Italy. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: ITAL 202 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

ITAL 420: Global and Local Italy. 3 credits.
Examines Italian culture in its urban, regional, national, and diasporic manifestations. Analyzes authentic texts, from literature to journalism, in the spirit of a cultural studies approach. Fosters advanced reading, writing, speaking, and listening skills that will enable students to understand and critique contemporary Italy with greater ease and sophistication. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: ITAL 330.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Japanese (JAPA)

100 Level Courses

JAPA 101: Introduction to the Japanese Language. 3 credits.
Includes basic grammar, oral expression, listening comprehension, and reading and writing. Notes: Students may not receive credit for JAPA 101 and JAPA 110. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to JAPA 110.
200 Level Courses

JAPA 102: Introduction to the Japanese Language. 3 credits.
Includes basic grammar, oral expression, listening comprehension, and reading and writing. Notes: Students may not receive credit for JAPA 102 and JAPA 110. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to JAPA 110.

Recommended Prerequisite: JAPA 101, appropriate placement score, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

JAPA 110: Elementary Japanese. 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening comprehension, reading, and writing. Notes: Students may not receive credit for JAPA 110 and JAPA 101, 102. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to JAPA 101, JAPA 102.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

Further development of skills acquired in JAPA 101 and 102, including grammar, oral expression, listening comprehension, reading and writing. Use of written language (katakana, hiragana, and kanji) emphasized. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: JAPA 102, JAPA 110, or equivalent.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

JAPA 202: Intermediate Japanese II. 3 credits.
Continuation of JAPA 201. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: JAPA 201 or equivalent.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

JAPA 240: Introduction to Japanese Culture. 3 credits.
This introductory survey course covers Japanese history, culture, and society from prehistory until the present day. It is designed to familiarize students with key aspects of Japanese culture that inform contemporary viewpoints and social issues. This class will provide a foundation of basic knowledge about Japan that will serve as a springboard for future engagement with the nation, its people, and its cultural legacy. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

JAPA 310: Japanese Culture in a Global World. 3 credits.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Recommended Prerequisite: ENGL 101/ENGH 101 or equivalent or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

JAPA 320: Japanese Cinema. 3 credits.
Comprehensive analysis of Japanese cinema based on cross-cultural perspectives and cultural criticism. Major developments and trends as viewed in selected Japanese films with emphasis on post war and contemporary eras. Knowledge of Japanese history, communication, and cultural studies or film and media studies helpful. Notes: May be repeated when topic is different with approval of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

JAPA 330: Advanced Reading and Speaking I. 3 credits.
Designed for students to develop conversational proficiency and reading skills. Students work toward a mastery of linguistic and sociolinguistic rules by incorporating reading and speaking abilities through class discussions, reports, and presentations. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: JAPA 202, appropriate placement score, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

JAPA 331: Advanced Reading and Speaking II. 3 credits.
Designed for students to develop conversational proficiency and reading skills. Students continue to develop mastery of linguistic and sociolinguistic rules by incorporating reading and speaking abilities through class discussions, reports and presentations. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: JAPA 330, appropriate placement score, or permission of instructor.
400 Level Courses

**JAPA 420: Animals and Nature in Japan.** 3 credits.
Serves as an introduction to ecocriticism through the lens of Japanese culture from the late medieval period to the present day. Themes relating to the study of the natural world will be approached from a multidisciplinary perspective, and the class will address topics concerning Japanese history, religion, and folklore. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**JAPA 440: Integrated Study of Japanese Language and Society I.** 3 credits.
Integrated approach to study of Japanese language and society through grammar review, vocabulary and kanji development, intensive practice in spoken and written Japanese, and sociological and cultural readings and analysis. Includes class discussion, oral and written reports, and out-of-class direct interactions with native speakers. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** JAPA 331, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**JAPA 441: Integrated Study of Japanese Language and Society II.** 3 credits.

**Recommended Prerequisite:** JAPA 440, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Kinesiology (KINE)

100 Level Courses

**KINE 100: Introduction to Kinesiology.** 3 credits.
Provides overview of the field of kinesiology in the form of an introductory course. Examines the history of the field, and its emphasis on evidence based knowledge. Explains policies and procedures for the major. Explorers career options. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**KINE 110: Physical Activity and Wellness.** 3 credits.
Introduces theoretical and practical information related to physical activity and its effect on personal wellness. Through physical activity...
literacy and personal reflection, this course engages individuals in the
dynamics of fitness-wellness across the lifespan. Offered by Recreation,
Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses
KINE 200: Introduction to Personal Training. 3 credits.
Provides students with basic knowledge and skills associated with
exercise training methods, lifting techniques, and health-related fitness
testing procedures. Selection of developmentally appropriate exercises
emphasized. Participation in fitness tests required. Offered by Recreation,
Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (BIOL 124\textsuperscript{C}, 125\textsuperscript{C}, ATEP 300\textsuperscript{C} and KINE 310\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 250: Endurance Sport Program Design. 3 credits.
Provides students with knowledge necessary to train another individual
safely and effectively for endurance sports. Emphasis will be placed on
running; however, cycling and swimming will be covered. Topics covered
include: functional, physiology, psychological aspects of endurance
competitions, basic nutritional requirements, injury reduction, training
techniques, safety, race management, and history of endurance sports.
Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: BIOL 124, BIOL 125, ATEP 300, KINE 200.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses
KINE 310: Exercise Physiology I. 3 credits.
Introduces students to the physiologic, neuroendocrine, and biochemical
changes of the human body that are associated with exercise and
work. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (BIOL 124\textsuperscript{C} and 125\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 311: Exercise Physiology Lab. 1 credit.
Demonstrates the body’s physiological responses to exercise with
specific testing and assessment procedures commonly used in the field
of Kinesiology. These laboratory experiences will allow students to apply
the theories they are learning in lecture. Offered by Recreation, Health &
Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: ATEP 300
Registration Restrictions:
Required Prerequisites: BIOL 124\textsuperscript{C}, 125\textsuperscript{C} and KINE 310\textsuperscript{C}.
\textsuperscript{*} May be taken concurrently.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 320: Principles of Human Nutrition. 3 credits.
Assesses dietary habits and patterns in relation to nutrient requirements
across the age spectrum and for a variety of populations. Emphasizes
weight control, diet in relation to physical activity, and current nutritional
controversies. Offered by Recreation, Health & Tourism (p. 221). Limited
to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 330: Seminar in Kinesiology. 3 credits.
Prepares students for the fieldwork experience in KINE 341: Kinesiology
Internship I. Topics covered include: professionalism, review of evidence-
based position papers, and discussion of contemporary issues in
kinesiology. Offered by Recreation, Health & Tourism (p. 221). Limited
to three attempts.

Recommended Prerequisite: Junior standing (60 credit hours)
Registration Restrictions:
Required Prerequisites: KINE 100\textsuperscript{C}, 200\textsuperscript{C} and 370\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 341: Kinesiology Internship I. 3 credits.
Provides a paid or voluntary supervised professional experience in an
approved exercise science professional setting under the supervision of
a practicum University Supervisor and Agency Supervisor. Current CPR,
AED, and First Aid Certification required. Offered by Recreation, Health &
Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (KINE 200\textsuperscript{C}, 310\textsuperscript{C}, 330\textsuperscript{C}, 350\textsuperscript{C} and 370\textsuperscript{C}).
\textsuperscript{C} Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
KINE 350: Exercise Prescription and Programming. 3 credits.
Provides study of the design and implementation of exercise programs for the general population. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (KINE 200C, 310C, 370C and ATEP 300C).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 360: Strength Training: Concepts and Applications. 3 credits.
Provides students with an opportunity to develop an in-depth understanding of the principles of strength training and conditioning, including: anatomical and physiological considerations, lifting techniques, equipment selection, program development/evaluation, and weightlifting safety; thus enabling them to teach and train client. Offered by Recreation, Health & Tourism University Supervisor and an Agency Supervisor with emphasis placed upon exercise programming and implementation for both clinical (site 1) and performance (site 2) populations. Current CPR, AED, and First Aid Certification required. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (BIOL 124C, 125C and KINE 310C) and ATEP 300C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 370: Exercise Testing and Evaluation. 3 credits.
Provides students with an opportunity to develop a understanding of the assessment and evaluation process during exercise in the determination of physical fitness. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (BIOL 124C, 125C and KINE 310C) and ATEP 300C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 380: Exercise Prescription and Programming for Special Populations. 3 credits.
Provides the study of the pathophysiology of common diseases and conditions with concentration in the design and implementation of exercise programs. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: KINE 200C, 310C, 330C, 350C and 370C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses
KINE 400: Biomechanics. 3 credits.
Focuses on kinetic and kinematic concepts and how they apply to the quantitative assessment of human movement. Analyzes human movement and the functional dynamics of tissue such as muscle or bone. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: BIOL 124C, 125C, KINE 360C and ATEP 300C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 410: Exercise Physiology II. 3 credits.
Provides study in the advanced theory of exercise physiology. Knowledge related to the physiologic, neuroendocrine, and biochemical changes of the human body associated with both a single bout of exercise and chronic exercise training will be addressed. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: BIOL 124C, 125C and KINE 310C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 420: Sport and Exercise Nutrition. 3 credits.
Explores the fundamental biochemical and physiological rationale for optimal nutrient intake for health, physical fitness, and athletic performance. Specific attention is focused upon the relationship nutrition has with exercise, physical fitness, health, and athletic performance. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (KINE 310C and 320C).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 441: Kinesiology Internship II. 3 credits.
Provides a supervised professional experience in two separate approved kinesiology professional settings under the supervision of both a University Supervisor and an Agency Supervisor with emphasis placed upon exercise programming and implementation for both clinical (site 1) and performance (site 2) populations. Current CPR, AED, and First Aid Certification required. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: KINE 341C, 360C and 380C.
C Requires minimum grade of C.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
KINE 450: Research Methods. 3 credits.
Covers the development of empirical research designs for both practical and theoretical problems in allied health fields such as kinesiology, therapeutic recreation, and athletic training. Includes literature review of hypothesized relationships, and formulation of research proposals. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: STAT 250C, DESC 210C, OM 210C, SOCI 313C or IT 250C.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 490: Kinesiology Internship III. 12 credits.
Provides a directed, field-based experience, in which students observe and participate in conditions, practices, and settings where sought career roles are conducted. The kinesiology fieldwork coordinator must approve placement for the practicum. Both a University supervisor and an approved agency supervisor with recognized professional certifications coordinate and oversee the student's internship experience. Current CPR, AED, and First Aid Certification required. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Mason Core: Capstone (p. 142)

Registration Restrictions:
Required Prerequisites: (KINE 330C, 341C, 400C, 410C, 420C and 441C). C Requires minimum grade of C.

Students with a class of Freshman, Junior or Sophomore may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KINE 499: Independent Study in Kinesiology. 1-3 credits.
Study of a topic regarding theory, research, or practice in kinesiology under the direction of a faculty member. May be repeated, but no more than 3 total credits hours may be earned. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 3 credits.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

800 Level Courses

KINE 890: Research Experience I. 6 credits.
Engages student in advanced literature review development, research design, evaluation methods and statistical applications in Kinesiology. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Kinesiology.
Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

KINE 891: Research Experience II. 3 credits.
Engages student in advanced data collection, management, analysis and interpretation to develop a scholarly product. Prepares students for dissertation proposal in Kinesiology. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Kinesiology.

Schedule Type: Research

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

KINE 897: Independent Study. 3,6 credits.
Structured learning experience to extend and develop skills and knowledge relative to the field of Kinesiology. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the term for a maximum 9 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Kinesiology.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

900 Level Courses

KINE 998: Doctoral Dissertation Proposal. 1-6 credits.
Provides information and support for students as they develop their dissertation proposal. Note: May be repeated, but no more than 6 credits of KINE 998 may satisfy doctoral degree requirements. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Admission to candidacy in PhD program and successful completion of doctoral qualifying exam.

Registration Restrictions:
Enrollment is limited to students with a major in Kinesiology.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

KINE 999: Doctoral Dissertation Research. 1-12 credits.
Focuses on doctoral dissertation research under direction of dissertation chair and committee members and initiation of projects stemming from
student research. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree.

**Recommended Prerequisite:** Faculty approval of dissertation proposal.

**Registration Restrictions:**

**Required Prerequisite:** KINE 998.

Enrollment limited to students with a class of Advanced to Candidacy. Enrollment is limited to students with a major in Kinesiology. Enrollment limited to students in a Doctor of Philosophy degree.

**Schedule Type:** Dissertation

**Grading:**

This course is graded on the Satisfactory/No Credit scale. (p. 84)

### Korean (KORE)

#### 100 Level Courses

**KORE 110: Elementary Korean.** 6 credits.

Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to KORE 101, KORE 102, KORE 115.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**KORE 115: Review of Elementary Korean.** 3 credits.

This course is designed as a review of elementary Korean for students who have learned or have been previously exposed to Korean-speaking environments. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to KORE 102, KORE 110.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

#### 200 Level Courses

**KORE 201: Intermediate Korean I.** 3 credits.

Continuation of basic Korean listening, speaking, reading, and writing skills. Online and lab work required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** KORE 102, KORE 110, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**KORE 202: Intermediate Korean II.** 3 credits.

Continuation of KORE 201. Online and lab work required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** KORE 201, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**KORE 305: Business Korean.** 3 credits.

Develops intermediate- to high-level Korean reading, writing, listening and speaking skills while increasing culture awareness in Korean business settings through authentic materials and hands-on projects with people in the Korean business community. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** KORE 202, appropriate placement score, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**KORE 310: Traditional Korean Literature in Translation.** 3 credits.

Develops students' advanced knowledge of traditional Korean literature and culture through exploration of pre-modern Korean literary texts (those written before 1900). Students will gain a fundamental understanding of Korean literature and culture and gain a deeper perspective on Korean cultural products by reading traditional Korean literary genres and learning about their social, historical, and cultural backgrounds. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** ENGH 101; or permission of instructor

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**KORE 311: Modern Korean Literature in Translation.** 3 credits.

Offers an overview of South Korean literature in the twentieth and twenty-first century. Examines the literary representations of modern Korean histories and investigates the origins and evolution of modern Korean literary genres. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Mason Core:** Literature (p. 142)

**Recommended Prerequisite:** ENGH 101; appropriate placement score; or permission of instructor.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**KORE 320: Korean Popular Culture in a Global World.** 3 credits.

Develops students' critical understanding of transnational and global perspectives of culture flow using various cultural products and art forms of Korea. Provides students with the understanding of the histories and social contexts of Korean popular culture. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Specialized Designation:** Non-Western Culture
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KORE 321: Korean Proficiency through Visual Culture. 3 credits.
Develops Intermediate-high level Korean reading, writing, listening, and speaking skills while increasing understanding of Korean culture through authentic Korean visual culture such as films, TV dramas, commercials, and music videos. Students who complete the course will gain an understanding of local and global Korean visual culture as well as acquire upper level Korean linguistic proficiency. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: KORE 202, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KORE 325: Major North and South Korean Writers. 3 credits.
Introduces students to major contemporary and twentieth-century Korean writers from both South and North Korea. Students acquire a balanced knowledge about North and South Korea's representative writers and their influential literary texts along with sociohistorical backgrounds of each society. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: ENGH 101; appropriate placement score; or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KORE 330: Advanced Korean Language and Culture. 3 credits.
Develops advanced level Korean language skills and cultural awareness in interpersonal, interpretive and presentational modes of communication. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: KORE 202, appropriate placement score, or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KORE 331: Special Topics in Advanced Korean Reading. 3 credits.
This course introduces students to advanced-level reading materials. Topics will vary. This course is designed for students who have a high-intermediate level of Korean proficiency and the goal for this course is developing advanced level Korean proficiency, literacy, and acquiring sociohistorical knowledge of Korean society. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: KORE 202; appropriate placement score; or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KORE 340: Transformation of Language and Culture in North and South Korea. 3 credits.
Develops advanced level North and South Korean reading, writing, listening, and speaking skills and increases culture awareness through authentic Korean visual culture. Distinguishes cross-linguistic and cross-cultural differences of North and South Korean language and culture and develops advanced level Korean linguistic proficiency. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: KORE 202\(C\) or 250\(C\).
\(C\) Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KORE 345: KORE 340 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KORE 340: Transformation of Language and Culture in North and South Korea. 3 credits.
Develops advanced level North and South Korean reading, writing, listening, and speaking skills and increases culture awareness through authentic Korean visual culture. Distinguishes cross-linguistic and cross-cultural differences of North and South Korean language and culture and develops advanced level Korean linguistic proficiency. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: KORE 202; appropriate placement score; or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

KORE 440: Special Topics in Translation of Korean. 3 credits.
The objective of this course is introducing basic theories and practices of translation and developing students' professional translation skills using various authentic Korean media texts or literary texts. Students will learn to apply text identification, text analysis, and resolve translation issues while they are practicing translating Korean texts into English. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: 300 level KORE course conducted in Korean; appropriate placement score; or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

KORE 450: Korean Cultural Studies. 3 credits.
Explores histories and contemporary applications of Korean cultural studies and cultural analyses, including cultural production and consumption in domestic and transnational scopes, reception and fandom, semiotics, postcolonial and postmodern theory, visual and media studies, and quantitative and qualitative methods. Students consider representative Korean cultural products, and also learn about the Western development of Cultural Studies. Offered by Modern &
Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: 300 level KORE course conducted in Korean; appropriate placement score; permission of instructor

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

Latin (LATN)

100 Level Courses

LATN 101: Elementary Latin. 3 credits.
Introduction including basic grammar, vocabulary, and development of reading skills, and introduction to Roman civilization. Notes: Must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: LATN 101.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

LATN 102: Elementary Latin. 3 credits.
Introduction including basic grammar, vocabulary, and development of reading skills, and introduction to Roman civilization. Notes: Must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: LATN 101.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

LATN 201: Intermediate Latin I. 3 credits.
Intensive review of elementary grammar. Introduces more advanced grammatical constructions and patterns of usage, continued development of reading proficiency, and vocabulary and readings in Latin literature. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: LATN 102 or equivalent.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

LATN 202: Intermediate Latin II. 3 credits.
Study of advanced grammatical constructions, vocabulary, and patterns of usage. Reading of selections from Roman authors of late Republic and early Empire, and study of cultural and political backgrounds. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: LATN 201 or equivalent.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

LATN 351: Roman Prose Literature. 3 credits.
Introduces major work of prose, themes, and literary qualities. Emphasizes interpretation and stylistic analysis. Concentrates on one complete work; topics, authors vary. Notes: Readings in Latin. May be repeated when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: LATN 202 or equivalent.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

LATN 352: Roman Poetry. 3 credits.
Introduces major work of poetry and themes, meters, and poetic techniques. Emphasizes interpretation, metrical and stylistic analysis, and poet's role in society. Topics and authors vary. Notes: Readings in Latin. May be repeated when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: LATN 202 or equivalent.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

LATN 451: Studies in Roman Literature. 3 credits.
Focuses on a single Latin author or literary genre. Approaches subject from variety of interpretive perspectives, and uses secondary literature as well as primary texts. Topics and authors vary. Notes: Readings in Latin. May be repeated when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: LATN 351/352 or equivalent or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

LATN 452: Studies in Roman Literature. 3 credits.
Focuses on a single Latin author or literary genre. Approaches subject from variety of interpretive perspectives, and uses secondary literature as well as primary texts. Topics and authors vary. Notes: Readings in Latin. May be repeated when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: LATN 351, 352 or equivalent or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
Latin American Studies (LAS)

400 Level Courses

LAS 499: Research Seminar in Latin American Studies. 3 credits.
Research on specialized topic in Latin American Studies culminating in substantial paper and oral presentation. Students expected to integrate knowledge and skills acquired in Mason Core courses. Notes: Must receive passing grade to graduate with a BA in Latin American studies. Offered by Humanities & Social Sciences (p. 305). Limited to three attempts.

Mason Core: Synthesis (p. 142)
Specialized Designation: Writing Intensive in Major
Recommended Prerequisite: 90 credits
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Linguistics (LING)

300 Level Courses

LING 306: General Linguistics. 3 credits.

Mason Core: Social/Behavioral Sciences (p. 142)
Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

LING 307: English Grammar. 3 credits.

Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

LING 450: Introduction to Sociolinguistics. 3 credits.
Overview of the study of language variation and change. Topics to be covered include the interaction between language and social factors (age, sex, social class), dialects of English, speech communities, language contact, and language and gender. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: LING 306.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

LING 480: First Language Acquisition. 3 credits.

Mason Core: Capstone (p. 142)
Specialized Designation: Research/Scholarship Intensive
Registration Restrictions:
Required Prerequisite: LING 306 C.
C Requires minimum grade of C.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

LING 485: Semantics and Pragmatics. 3 credits.
Developments in theoretical linguistics that explore how language form is related to meaning and context. Topics include reference, lexical semantics, logic, quantification, truth conditions and sentential meaning, presuppositions, and speech acts. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: LING 306.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

LING 486: Syntax I. 3 credits.
Nature and form of syntactic theory, and examination and analysis of the properties of several major natural language syntactic structures. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: LING 306.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

LING 490: Generative Phonology. 3 credits.
Sound systems of English and other languages from perspectives of phonological theory. Topics include articulatory phonetics, distinctive features, nature of phonological representations, rhythm and stress, and phonological universals and constraints. Offered by English (p. 359). Limited to three attempts.

Recommended Prerequisite: LING 306.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

LING 499: Independent Study. 1-3 credits.
Intensive study of particular theoretical problem in linguistics conducted by student in close consultation with instructor. Student produces substantial piece of written work on research findings. Notes: May be
repeated with permission of instructor. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** LING 326 and 3 other LING credits and permission of instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

**LING 507:** *Field Work in Applied Linguistics.* 3 credits.
Field work providing working experience in language-teaching program or educational research organization. Notes: Contact the department one semester prior to enrollment. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** LING 326, 520, 521, or 582.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**LING 520:** *Introduction to Linguistics.* 3 credits.
Introduces terminology and methodology of modern linguistic science, and detailed structural analysis of English phonology, morphology, and syntax. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**LING 523:** *Modern English Grammar.* 3 credits.
Overview of structure of modern English beginning with word classes and ending with analyses of complex sentences. Most topics introduced as problems of language description; in solving them, principles of syntactic argumentation are demonstrated. Students learn to tap intuitions about English to analyze grammatical structure. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** One linguistics course or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**LING 525:** *Practicum in ESL.* 3 credits.
Involves preparation and presentation of lessons to adult English as second language (ESL) learners under guidance of mentor teacher and practicum professor. Field experience consists of observation and teaching in assigned ESL classroom. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 521.

**Registration Restrictions:**
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**LING 580:** *First Language Acquisition.* 3 credits. Examines first language acquisition from a linguistic perspective. Covers the development of a first phonology, syntax, and semantics. Methodology in studying child language is discussed. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 520 or one of the following: LING 690, 786, 785 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 581:** *Psycholinguistics.* 3 credits. Study of mental and psychological aspects of human language, including aphasia, association, autism, language acquisition, verbal concept formation, and perception. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 520, 690, or 786; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 582:** *Second Language Acquisition.* 3 credits. Examines second language (L2) acquisition from a linguistic perspective. Compares first and second language acquisition. Explores factors contributing to L2 variation, including linguistic universals, transfer, age, input, and affective considerations. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 306, 520, 690, or 786; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 650:** *Introduction to Sociolinguistics.* 3 credits. An overview of the study of language variation and change. Topics to be covered include the interaction between language and social factors (age, sex, social class), dialects of English, speech communities, language contact, and language and gender. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 520, 523, or 690.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 686:** *Special Topics in Linguistics.* 3 credits. Detailed advanced study of selected area of linguistics. Notes: Content varies. May be repeated for credit with permission of department. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 520, 690.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 690:** *Generative Phonology.* 3 credits. Sound systems of English and other languages from the perspective of phonological theory. Topics include articulatory phonetics, distinctive features, nature of phonological representations and processes, rule ordering, abstractness, role of external evidence, and nonlinear phonology. Offered by English (p. 359). May not be repeated for credit.
**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 691:** *Theories of Language.* 3 credits.
Seminar in linguistic metatheory. Examines wide range of theories about language and linguistic theory, including those of Saussure, Bloomfield, Chomsky, and others. Readings from original sources. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 520, 690, or 786; or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 692:** *Phonology II.* 3 credits.
Recent trends in phonological theory. Topics include stress assignment, tone spreading, and vowel harmony, from within nonlinear framework. Discusses segmental structure and underspecification. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 690.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 770:** *Research Methods.* 3 credits.
Conceptualizing and conducting second language research, including process of developing research questions, gathering data, obtaining permission from institutional review board, choosing data collection measures, and coding linguistic and nonlinguistic data. Offered by English (p. 359). May not be repeated for credit.

**700 Level Courses**

**LING 782:** *Second Language Acquisition II.* 3 credits.
Advanced course in second-language acquisition theory. Detailed analysis of internal and external constraints. Variation addressed from linguistic, psychological, and environmental perspectives. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 582 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 785:** *Semantics and Pragmatics.* 3 credits.
Developments in theoretical linguistics that explore how language form relates to meaning and context. Topics include reference, lexical semantics, logic, quantification, truth conditions and sentential meaning, presuppositions, and speech acts. Offered by English (p. 359). May not be repeated for credit.

**Recommended Prerequisite:** LING 520, 690, or 786; or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**LING 786:** *Syntax I.* 3 credits.
Nature and form of syntactic theory. Examines and analyzes properties of several major natural language syntactic structures. Offered by English (p. 359). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**LING 787: Syntax II.** 3 credits.  
Theoretical treatment of syntactic phenomena that have emerged as standard problems for syntactic analysis. Problems include binding, extraction, and quantification. Extensive reading in primary theoretical literature. Offered by English (p. 359). May not be repeated for credit.  
**Recommended Prerequisite:** LING 786.  
**Registration Restrictions:**  
Enrollment is limited to Graduate or Non-Degree level students.  
Students in a Non-Degree Undergraduate degree may not enroll.  
**Schedule Type:** Lecture  
**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)  
**LING 788: Semantics and Pragmatics II.** 3 credits.  
Advanced course in semantic and pragmatic theory. Study of meaning under truth-conditional, model-theoretic framework explored and related to syntax and pragmatics. Offered by English (p. 359). May not be repeated for credit.  
**Recommended Prerequisite:** LING 785 or permission of instructor.  
**Registration Restrictions:**  
Enrollment is limited to Graduate or Non-Degree level students.  
Students in a Non-Degree Undergraduate degree may not enroll.  
**Schedule Type:** Lecture  
**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)  
**LING 798:** Directed Reading and Research. 1-3 credits.  
Reading, research, and writing on specific project under direction of departmental member. Notes: Open only to students who have completed at least 18 credits of LING courses. Prior approval by faculty member required. Written report required. May be repeated with permission of director. Offered by English (p. 359). May be repeated within the degree for a maximum 6 credits.  
**Recommended Prerequisite:** 18 credits of linguistics courses.  
**Registration Restrictions:**  
Enrollment is limited to Graduate or Non-Degree level students.  
Students in a Non-Degree Undergraduate degree may not enroll.  
**Schedule Type:** Thesis  
**Grading:**  
This course is graded on the Graduate Special scale. (p. 84)  
**LING 799:** Thesis. 1-6 credits.  
Students who take LING 798 to develop thesis topic and then elect thesis option receive 3 credits after completing thesis. Students who do not take LING 798, or who take it to work on project unrelated to thesis, receive up to 6 credits after completing thesis. Offered by English (p. 359). May be repeated within the degree.  
**Recommended Prerequisite:** Open only to students who have completed at least 18 credits of LING courses.  
**Registration Restrictions:**  
Enrollment is limited to Graduate or Non-Degree level students.  
Students in a Non-Degree Undergraduate degree may not enroll.  
**Schedule Type:** Thesis  
**Grading:**  
This course is graded on the Satisfactory/No Credit scale. (p. 84)  
**800 Level Courses**
**LING 882:** Seminar in Language Acquisition. 3 credits.  
Advanced topics seminar in current language acquisition theory. Notes: Topics vary. Offered by English (p. 359). May be repeated within the term for a maximum 9 credits.  
**Recommended Prerequisite:** LING 782 or permission of the instructor.  
**Registration Restrictions:**  
Enrollment is limited to Graduate level students.  
**Schedule Type:** Seminar  
**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)  
**LING 886:** Advanced Syntax Seminar. 3 credits.  
Advanced course in current syntactic theory. Notes: Topics vary. Offered by English (p. 359). May be repeated within the term for a maximum 9 credits.  
**Recommended Prerequisite:** LING 786, LING 787, or permission of instructor.  
**Registration Restrictions:**  
Enrollment is limited to Graduate level students.  
**Schedule Type:** Seminar  
**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)  
**LING 890:** Advanced Phonology Seminar. 3 credits.  
Advanced topics seminar in current phonological theory. Notes: Topics vary. Offered by English (p. 359). May be repeated within the term for a maximum 9 credits.  
**Recommended Prerequisite:** LING 692 or permission of instructor.  
**Registration Restrictions:**  
Enrollment is limited to Graduate level students.  
**Schedule Type:** Seminar  
**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)  
**LING 897:** Independent study. 3 credits.  
Independent reading on a topic agreed on by student and faculty member. Offered by English (p. 359). May be repeated within the degree for a maximum 12 credits.  
**Recommended Prerequisite:** PhD rank or permission of instructor.  
**Registration Restrictions:**  
Enrollment is limited to Graduate level students.  
**Schedule Type:** Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**LING 898**: Advanced Qualifying Seminar. 3 credits.
Work on PhD qualifying paper. Offered by English (p. 359). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite**: Completion of 33 credits of core courses in linguistics.

**Registration Restrictions**: Enrollment is limited to Graduate level students.

**Schedule Type**: Seminar

**Grading**: This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**LING 998**: Doctoral Dissertation Proposal. 1-6 credits.
Work on research proposal that forms basis for the doctoral dissertation. Offered by English (p. 359). May be repeated within the degree.

**Recommended Prerequisite**: Advancement to candidacy.

**Registration Restrictions**: Enrollment is limited to Graduate level students.

**Schedule Type**: Dissertation

**Grading**: This course is graded on the Satisfactory/No Credit scale. (p. 84)

**LING 999**: Doctoral Dissertation. 1-12 credits.
Doctoral dissertation research and writing under direction of student’s dissertation committee. Offered by English (p. 359). May be repeated within the degree.

**Recommended Prerequisite**: LING 998.

**Registration Restrictions**: Enrollment is limited to students with a class of Advanced to Candidacy.

**Schedule Type**: Dissertation

**Grading**: This course is graded on the Satisfactory/No Credit scale. (p. 84)

**MBA--Interdisciplinary (MBA)**

**600 Level Courses**

**MBA 601**: Online MBA Orientation. 0 credits.
The main objective of this course is to help students understand program expectations and time commitment and prepare themselves for online communication and technology requirements necessary to successfully complete their online MBA degree. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite**: Enrollment in the online MBA program or permission of the MBA academic director.

**Registration Restrictions**: Enrollment limited to students in a Master of Business Admin degree.

**Schedule Type**: Lecture

**Grading**: This course is graded on the Satisfactory/No Credit scale. (p. 84)

**MBA 603**: Managerial Economics and Decisions of the Firm. 3 credits.
Provides fundamental understanding of applying microeconomics concepts to managerial decision making. Explores principles of microeconomic theory, including market supply and demand, production and cost functions, industry structure, and product and resource pricing. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions**: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type**: Lecture, Recitation

**Grading**: This course is graded on the Graduate Special scale. (p. 84)

**MBA 612**: Managing Costs and Evaluating Performance. 3 credits.
Examines impact of cost and cost allocation on performance and evaluation. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions**: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type**: Lecture, Recitation

**Grading**: This course is graded on the Graduate Regular scale. (p. 84)

**MBA 613**: Financial Reporting and Decision Making. 3 credits.
Foundation course focusing on economics and analysis of business transactions and related financial reporting issues. Topics include introduction to accounting framework used in financial reporting; and analysis of financial statements, economic events and their impact on financial reports, and impact of accounting methods on financial reports. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions**: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 623: Marketing Management.** 3 credits.
Develops market-based knowledge and skills for effective marketing decision making, strategy design, implementation, and evaluation in wide variety of institutional and competitive situations. Addresses the importance of companies being market-driven and customer-focused. Emphasis on case studies, team work, and projects. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 633: Statistics for Business Decision Making.** 3 credits.
Uses statistical methods as analytical tools for understanding and solving business problems and supporting business decision making. Includes descriptive statistics, sampling, inferencing and regression. Extensive use of applied business scenarios to illustrate concepts and computer software for data analysis. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 643: Managerial Finance.** 3 credits.
Introduces theory and practice of finance within corporations. Topics include intertemporal choice, valuation, capital budgeting and structure, working capital management, and risk and return analysis. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 653: Organizational Behavior.** 3 credits.
Emphasizes development of conceptual tools for understanding and analyzing individual and group behavior in organizations and organizational processes. Considerable focus on developing relevant skills for working in groups and teams. Lectures, discussions, case analyses, and class exercises. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 662: Management of Information Technology.** 3 credits.
The strategic, economic and managerial aspects of managing an organization's IT assets are covered. The business value of IT is understood and assessed in context of its impact on the organization's structure and strategy. The course includes discussion on major issues pertaining management of IT infrastructure. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting or Business Administration.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MBA 678: Strategic Management.** 3 credits.
Capstone course focusing on strategy development at business unit and corporate level. Cases, readings, and project format familiarize students with strategic management function and help them develop analytical, organizational, and managerial skills to analyze complex business situations. Provides opportunities to integrate knowledge gained in prior course work. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 701: Business Valuation.** 0-3 credits.
Develops framework for business analysis and valuation using financial statement data. Analyzes management decisions such as equity valuation, creditworthiness, merger valuation, corporate financial structure, and management communication strategy. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits. Equivalent to ACCT 701.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 702: Corporate Financial Policy.** 0-3 credits.
Applies theories and methods of corporate financial management to series of complex cases. Topics include capital projects as real options, cost of capital and capital structure, firm valuation, project finance, and merger and acquisition analysis. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 703: Financial Markets.** 0-3 credits.
Explores relationship among financial markets including global equity markets, U.S. Treasury securities, and exchange-traded and over-the-counter financial derivative instruments such as futures, options, swaps, and asset-backed securities. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 705: Venture Capital and Private Finance.** 0-3 credits.
Considers market microstructure of venture capital and private finance: costs and benefits from employing private financing, interaction between the financiers and entrepreneurs, financial analysis of potential ventures,
and investor exit strategies. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 706: Investment Analysis.** 0-3 credits.
Focuses on analyzing equity securities and debt instruments given implications of efficient market hypothesis and modern capital market theory. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 707: Futures, Options and Other Derivatives.** 3 credits.
This course focuses on the mechanics of derivatives markets, with a strong emphasis on identifying and managing risks in financial products. Topics include: rationale behind the major pricing models and their application to derivatives securities, arbitrage and pricing, hedging, common trading strategies with options, and the fundamental concepts of risk measures and risk management. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration.

Enrollment is limited to Graduate or Non-Degree level students.

Enrollment limited to students in a Master of Business Admin degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MBA 708: Taxes and Business Strategy.** 0-3 credits.
Provides framework for making managerial decisions in global tax environment. Examines business decisions such as location of facilities, employee compensation, mergers and acquisitions, capital and asset structure, and business form. Offered by School of Business (p. 888).

May be repeated within the degree for a maximum 3 credits. Equivalent to ACCT 708.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 709: Risk and Portfolio Management.** 3 credits.
This course is focused on asset allocation and portfolio construction, with a strong emphasis on measuring performance and managing risk. Topics include: the rationale behind the most commonly used performance and risk measures and models for portfolio construction, stress testing, scenario analysis, derivative securities, trading strategies, and hedging impact those risk measures and models, and the consequences of those interactions. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration.

Enrollment is limited to Graduate or Non-Degree level students.

Enrollment limited to students in a Master of Business Admin degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MBA 711: Entrepreneurship.** 0-3 credits.
Considers fundamental aspects of entrepreneurship and process of new venture creation. Draws on broad range of business disciplines including management, marketing, finance, and accounting to develop evaluation and execution skills. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 712: Project Management.** 0-3 credits.
Focuses on designing, planning, monitoring, and controlling projects. Involves practical examination of how projects should be managed
from start to finish, including specific emphasis on how to avoid common pitfalls. Includes hands-on experience with a common project management software package. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 713: Managing Human Capital.** 0-3 credits.
Effective management of human capital drives values for the firm and, in today’s business environment, is a source of competitive advantage. Course prepares managers and entrepreneurs to leverage human capital by aligning practices with strategic objectives. Course provides systems perspective noting interrelationships between practices designed to attract, retain, & motivate human capital. Opportunities provided for personal skill-building on topics; interviewing, providing performance feedback, rewards, career development and termination. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 714: Managing Growth of Small Businesses.** 0-3 credits.
Focuses on unique challenges faced by small and entrepreneurial firms that seek long-term growth. Builds on concepts and knowledge of creating start-up company, and introduces processes and strategies required to become significant player in industry segment. Designed for students interested in understanding opportunities and problems in their own businesses, employment in small or entrepreneurial businesses, or exploring corporate entrepreneurship within large firms. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA or MSA core requirements or permission of the program director.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 715: Advanced Project and Program Management.** 0-3 credits.
Examines advanced topics in project and program management with specific attention to issues and skills that managers needs to effectively manage multiple projects and programs. Topics include project selection, multiple project resource allocation, and organization of project office. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 716: International Business Strategy.** 0-3 credits.
Focuses on the globalization of business activities, the strategic challenges faced by companies in global competition, and how companies strategically respond to these new competitive challenges. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core requirements.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 717: International Finance.** 0-3 credits.
Advanced analysis of managing firm's international financial operations. Topics include currency risk, political risk, returns and funding of international projects, international markets and accounting, and cost of capital. Lecture, discussion, readings, and cases. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.
Recommended Prerequisite: Completion of MBA or MSA core requirements or permission of the program director.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

MBA 718: *International Marketing.* 0-3 credits.
Addresses marketing process for products and services within major international markets. Topics include marketing mix strategies using standardization, localization, or globalization approaches. Emphasizes the introduction of service innovations and new products in the global market. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA or MSA core requirements or permission of the program director.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

MBA 720: *Marketing Analytics.* 3 credits.
Marketing analytics is a systematic approach to harnessing data/information to drive effective marketing decision making. The objective of this course is to equip you with tools required to address fundamental marketing decision problems using a data-driven approach. It will train students to view the marketing processes and relationships systematically and analytically. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to GBUS 720.

**Recommended Prerequisite:** MBA 738 or equivalent.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration.

Enrollment is limited to Graduate or Non-Degree level students.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MBA 721: *Marketing Research.* 3 credits.
Develops skills to plan and implement effective marketing research studies. Topics include research design, data collection, statistical analysis, and use of database systems. Offers perspective on how managers can use market data to develop successful product or service strategies. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to GBUS 721.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

MBA 722: *Consumer Behavior.* 0-3 credits.
An integrated analysis of internal and external influences on consumer decision making, purchase, and consumption behaviors with attention to marketing strategy implications. Emphasizes demographics, lifestyle, situation, perception, learning, and attitude formation and change, focusing on customer segmentation, satisfaction, loyalty, and product-person relationships. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

MBA 723: *Supply Chain Management.* 0-3 credits.
Examines logistics of supply chain systems, including inventory management, distribution channels, and information systems. Emphasizes strategic alliances and international issues. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 724: Marketing Communications. 0-3 credits.**
Examines all forms of communication and sources of brand or company contacts as potential message channels in building relationship with customers. Focuses on integrated planning process for all communication elements, including consumer and trade advertising, public relations, direct and database marketing, promotions, and sales presentations to achieve synergy in communicating with various constituencies. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of the MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 725: Leadership. 0-3 credits.**
Overview of major conceptualizations of leadership and motivation in organizations. Integrates theory, research, and applications. Students apply principles of leadership and motivation to their own work situations and case evaluation. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 726: Negotiations. 0-3 credits.**
Focuses on theory, processes, and practice of negotiation within and across organizations, including attention to ethical issues. Explores systematic ways to increase quality of negotiated agreements, including methods of preparation, effective communication, and various strategies to increase power. Format includes negotiation exercises, lecture, and discussion. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA core.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 727: Management Consulting. 3 credits.**
Management Consulting is a practice-based course designed to provide a fundamental background in consulting, both from the perspective of the outside management consultant, and the inside (in-house) corporate consultant. Students will examine best practices in consulting to address complex organizational challenges and opportunities within a medium-to-large sized corporate setting. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration.

Enrollment is limited to Graduate or Non-Degree level students.

Enrollment limited to students in a Master of Business Admin degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 728: Organizational Change. 3 credits.**
Organizational Change Management (MBA 728) presents a systems view of organizational change that includes intervention strategies, data collection, diagnosis, and the integration and management of system-wide organizational change. The course begins with the investigation of previously defined organizational change management theories and explores the relevance of those theories in the 21st century organization. MBA 728 is designed to expose the student to an array of academic theories and models that challenge the intellectual perception of organizational change. The objective of this challenge is to introduce the student to the unique nature of all organizational change initiatives while creating a foundation that will support the real-time integration of more successful change within their respective organization. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Management.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 730: Management of Technology and Innovation Processes. 0-3 credits.**
Students will develop a strong conceptual foundation for managing technological innovation. It introduces frameworks for analyzing how firms can create, commercialize and capture value from products.
and services. Topics covered comprise the formulation of innovation strategies, the process of developing new products and services, and how to create and manage an innovative organization to drive revenue growth. Offered by School of Business (p. 888). May be repeated within the degree for a maximum of 3 credits.

**Recommended Prerequisite:** Admission to the MBA program or permission of the program director.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting or Business Administration.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 738: Data Mining for Business Analytics.** 3 credits.
Examines data driven decision making. Covers both predictive and descriptive analytics techniques commonly used in businesses. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to GBUS 738.

**Recommended Prerequisite:** Completion of MBA core or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 739: Advanced Data Mining for Business Analytics.** 3 credits.
This course covers business analytics using advanced data mining methods for the purposes of developing predictive models and forecasting. The course will develop concept of feature selection to identify what dimensions to best use for constructing decision making models. Offered by School of Business (p. 888). May not be repeated for credit.

**Recommended Prerequisite:** Grade of B or higher in MBA 738 or equivalent.

**Registration Restrictions:**
Enrollment is limited to students with a major in Business Administration.

Enrollment is limited to Graduate or Non-Degree level students.

Enrollment limited to students in a Master of Business Admin degree.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MBA 742: Corporate Governance and Ethics.** 0-3 credits.
Focuses on developing understanding of corporate governance issues and ethical decision-making. Topics include examination of internal and external and international governance issues, and ethical analysis in current business environment. Offered by School of Business (p. 888). May be repeated within the degree for a maximum of 3 credits. Equivalent to ACCT 742.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 744: Fraud Examination.** 0-3 credits.
Introduces strategies and techniques for fraud prevention and detection. Focuses on financial fraud such as bribery, contract rigging and kickbacks, embezzlement, fraudulent financial reporting, payroll fraud, and misappropriation of inventory and other assets. Offered by School of Business (p. 888). May be repeated within the degree for a maximum of 3 credits. Equivalent to ACCT 636, GBUS 744.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**MBA 745: International Financial Reporting.** 0-3 credits.
Examines accounting from an international perspective, including the study of various functional areas of accounting across countries and the reporting requirements encountered by companies engaged in international trade and making foreign direct investments. Offered by School of Business (p. 888). May be repeated within the degree for a maximum of 3 credits.

**Recommended Prerequisite:** Completion of MBA or MSA core requirements, or permission of program director.

**Registration Restrictions:**
Enrollment is limited to students with a major in Accounting or Business Administration.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)
**MBA 746: Real Estate Analysis and Valuation.** 0-3 credits. Overview of real estate assets, markets, and decisions. Emphasizes development of analytical techniques and information required for implementation. Includes legal, economic, and public policy perspectives. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits. Equivalent to GBUS 746.

**Recommended Prerequisite:** Completion of MBA or MSA core requirements or permission of the program director.

**Registration Restrictions:** Enrollment is limited to students with a major in Accounting or Business Administration.

**Grading:** This course is graded on the Graduate Special scale. (p. 84)

**Students in a Non-Degree Undergraduate degree may not enroll.**

**Schedule Type:** Lecture

**MBA 752: Turning Ideas into Successful Companies.** 0-3 credits. An advanced course in entrepreneurship focused on discovery and development of an achievable business concept. The centerpiece of the course is development of the formal business plan and associated presentation materials. Students are assigned to teams and must hypothesize a new business, research and test their hypothesis, and develop a comprehensive written business plan. The plan must be for an actual business that the students intend to start upon the successful completion of the course. Technology-based projects are encouraged, but not required. Because the course is cross-listed with IT&E and the School of Business, most teams will include both engineering and business students. Weekly presentations of the team's progress are required. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA or MSA core requirements or permission of the program director.

**Registration Restrictions:** Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

**Enrollment is limited to Graduate level students.**

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

**Students in a Non-Degree Undergraduate degree may not enroll.**

**Schedule Type:** Independent Study

**MBA 796: Directed Studies in Business Administration.** 1-3 credits. Approval by faculty member and MBA program director required prior to registration. Studies specialized topics in business administration not otherwise available in curriculum. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Completion of MBA or MSA program or permission of the program director.

**Registration Restrictions:** Enrollment is limited to students with a major in Accounting, Business Administration or Business Admin - Fast Track.

**Enrollment is limited to Graduate or Non-Degree level students.**

**Grading:** This course is graded on the Graduate Special scale. (p. 84)

**Students in a Non-Degree Undergraduate degree may not enroll.**

**Schedule Type:** Lecture

**MBA 797: Special Topics in Business.** 1-3 credits. Sections established as necessary to focus on various topical issues that emerge in practice of business administration. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:** Enrollment is limited to students with a major in Accounting or Business Administration.

**Enrollment is limited to Graduate or Non-Degree level students.**

**Grading:** This course is graded on the Graduate Special scale. (p. 84)

**Students in a Non-Degree Undergraduate degree may not enroll.**

**Schedule Type:** Independent Study

**Management (MGMT)**

**300 Level Courses**

**MGMT 303: Principles of Management.** 3 credits. Examines managerial work under range of business models. Managerial functions and activities including planning, organizing, balancing conflicting demands, leading and controlling are examined in depth and in context of current organizational examples. Discuss variety of pressures contemporary managers face. Notes: Students cannot receive credit for both MGMT 301 and MGMT 303. School of Business students will not be permitted to make more than three attempts to achieve a C or higher in MGMT 303. the third attempt requires School of Business academic advisor approval. Those who do not successfully complete this course within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. For more information about this, see Academic Policies. Offered by School of Business (p. 888). Limited to two attempts.
Recommended Prerequisite: BUS 103 and BUS 200.

Registration Restrictions:
Required Prerequisites: (ACCT 203C, U203, 204C or U204) and (MATH 108C, U108, 113C, U113, 114C, U114, HNRT 225C or U225). C Requires minimum grade of C.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 313: Organizational Behavior. 3 credits.
Course expands management knowledge through defined focus on organizational behavior (OB). OB is field of study aimed at predicting, explaining, understanding and changing human behavior as it’s reflected in organizations. Science of OB is interdisciplinary in nature and draws from psychology, sociology, social psychology, and group dynamics. Course explores dynamics between individual and organization through this behavioral science lens. Notes: Students cannot receive credit for both MGMT 301 and MGMT 313. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: MGMT 303C, L303 or 303T. C Requires minimum grade of C.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 321: Introduction to Human Resource Management. 3 credits.
The field of human resource management examines what can or should be done to make workers more productive and satisfied. The course builds on MGMT 301 by introducing key concepts and techniques that managers need to attract, retain, develop, compensate, and motivate quality talent. Also emphasizes legal and ethical considerations in human resource management. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Specialized Designation: Scholarly Inquiry

Registration Restrictions:
Required Prerequisites: MGMT 301C, L301, 303C or L303. C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

MGMT 412: Diversity in Organizations. 3 credits.
Builds on MGMT 303 by emphasizing intrapersonal, interpersonal, organizational, and societal phenomena relevant to issues of diversity. Examines phenomena and processes in general and with regard to specific dimensions such as gender, race, and ability. Designed to increase students’ knowledge of diversity in organizations, understanding of others’ perspectives, and ability to work well with people who differ from themselves. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Specialized Designation: Scholarly Inquiry

Registration Restrictions:
Required Prerequisites: MGMT 301C, L301, 303C or L303. C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 413: Organizational Development and Management Consulting. 3 credits.
Introduces theory and practice of organization development. Assumes some basic knowledge of organizational behavior, and addresses how to use knowledge about organizations to change them. Focuses on ways of understanding organizations with attention to theoretical underpinnings of field and diagnostic models, and processes for entering organizations. Later sessions focus on contracting, data collection, organizational diagnosis, data feedback, and change technologies. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MGMT 301C, L301, 303C or L303. C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 421: Advanced Human Resource Management. 3 credits.
Builds on MGMT 321 by using a case-based approach to deepen understanding of HRM practices. Students conduct projects requiring application of strategic HR processes. Includes discussion of advanced topics not thoroughly covered in MGMT 321. Relevant for management majors, particularly those seeking a human resource management career. Helps prepare for SHRM Professional in Human Resources certification.
exam. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MGMT 301, L301, L303 or 303) and (MGMT 321). Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 431: The Legal Environment for Employee and Labor Relations. 3 credits.
Examines the legal aspects of employee and labor relations from a managerial perspective. Topics include the employment at will doctrine; wrongful discharge; federal and state employment discrimination legislation; and regulation of employee welfare. Includes lectures, cases, and readings. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: BULE 302, 303 or L303. Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 441: International Strategy. 3 credits.
Course focuses on seven inter-related pillars underpinning international strategy and these areas are: global environment and marketplace, global competitiveness and manufacturing including role of USA, global macroeconomics and financial infrastructure, global management approaches and management of transnational firms, new forces that shape global strategy, and globalization lessons learned and its limitations. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MGMT 301, 303, L301, L303, 301T or 303T. Requires minimum grade of C.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 451: Introduction to Entrepreneurship. 3 credits.
Provides students an introduction to key concepts, methods, and frameworks of innovation and entrepreneurship. The experiential component of the course will be supplemented by readings, written work and presentations, and classroom discussion. The course will explore and explain the importance of entrepreneurship, entrepreneurs, and their firms in addition to allowing students to experiment with various entrepreneurial concepts and activities. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MGMT 301, 301C, 303C or L303. Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 452: Experiential Entrepreneurship. 3 credits.
Provides students opportunity to experience entrepreneurship at advanced level through hands on development of a new firm, product or service. Students identify an innovative opportunity to work on or will work with local startup or organization developing innovative new product or service. Focuses on opportunity recognition and execution and introduces students to day to day experience of innovators and entrepreneurs. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MGMT 451, MBUS 304, IT 495 or MGMT L451. Requires minimum grade of C.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 453: Starting a Business. 3 credits.
Examines the paths to small business ownership, including starting an enterprise or purchasing an existing business. Focus will be on franchising and licensing, as well as family-run enterprises. Students will gain a broad understanding of location choice, facilities and layout, in addition to the legal issues associated with small business creation. Harvesting and exiting options will also be explored. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MGMT 301C, L301, 303C or L303, MBUS 304C or IT 495C. Requires minimum grade of C.

Schedule Type: Lecture

Grading:
MGMT 463: Negotiations in Organizations. 3 credits.
Focuses on theory, processes, and practice of negotiation within and across organizations, including attention to ethical issues. Explores systematic ways to increase quality of negotiated agreements, including methods of preparation and use of rational assumption, bidding and decision criteria. Format includes negotiation exercises, lecture, and discussion. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MGMT 301<sup>C</sup>, L301, 303<sup>C</sup> or L303.
<sup>C</sup> Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 464: Teamwork and Interpersonal Skills. 3 credits.
Focuses on intensive development of high professional-level skill set for collaboration and leadership in contemporary environments. Builds on content introduced in MGMT 301, 312. Attention to developing personal leadership capabilities, collaborating in traditional and virtual environments, improving group processes, project management, tolerating ambiguity, improving communication, creative problem solving, time management, coaching, and empowering employees. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MGMT 301<sup>C</sup>, L301, 303<sup>C</sup> or L303.
<sup>C</sup> Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MGMT 471: Competitive Strategy. 3 credits.
Explores industry structures and competitive behavior of firms. Attention to how firm uses tangible, intangible, and human resources to develop sustainable competitive advantage, and how competitors interact in marketplace. Introduces tools and concepts to analyze industry dynamics and competitive interactions of firms in these industries. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MGMT 301<sup>C</sup>, L301, 303<sup>C</sup> or L303.
<sup>C</sup> Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MGMT 491:** *Current Topics in Management.* 3 credits.
Advanced study of management concepts and selected topics. Incorporates intensive analysis of management problems of long-term strategic significance or current urgency for organizational planning and operations. Includes significant contemporary research findings. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisites:** MGMT 312C, 313C, L312 or L313.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MGMT 492:** *Internship in Management.* 3 credits.
Opportunity to gain practical, professional experience in conjunction with academic development. An internship is an important part of academic and career preparation. May be used as elective credit, but may not be repeated. Notes: No more than 6 credits of School of Business internship coursework (BUS 492 or MGMT 492) can be applied towards a student’s 120 (BU) degree applicable credits. Students must receive departmental approval in order to register for this course; please contact the School of Business Office of Career Services for internal eligibility requirements. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to ACCT 492, BUS 492, FNAN 492, MIS 492, MKTG 492, OM 492, OSCM 492.

**Recommended Prerequisite:** 75 credit hours

**Registration Restrictions:**
**Required Prerequisites:** MGMT 301B or 303B.
B Requires minimum grade of B.

Students with a class of Freshman or Sophomore may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MGMT 499:** *Independent Study.* 1-3 credits.
Research and analysis of selected problems or topics in management must be arranged with instructor and approved in writing by associate dean for undergraduate programs. Notes: Written report required. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Management majors with at least 9 upper-level management credit hours.

**Registration Restrictions:**
Students with a class of Freshman or Sophomore may not enroll.

Non-Degree or Washington Consortium level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**700 Level Courses**

**MGMT 711:** *Seminar in Organizational Behavior.* 3 credits.
This course is designed to expose doctoral students to a broad foundation in organizational behavior research. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MGMT 712:** *Seminar in Strategic Management.* 3 credits.
This course is designed to expose doctoral students to a broad foundation in strategic management research. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**800 Level Courses**

**MGMT 892:** *Special Topics in Management.* 3 credits.
Selected topics reflecting specialized areas in management. Content varies. May be repeated when topic is different. Offered by School of Business (p. 888). May be repeated within the term for a maximum 9 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**Management of Information Systems (MIS)**

**300 Level Courses**

**MIS 302:** *Introduction to Programming for Business Applications.* 3 credits.
Course covers logical design and programming to solve business problems using structured and object-oriented programming language and techniques, supported by a modern development environment.
Students complete assignments involving problem solving and development of business applications. Emphasis on program development is reinforced through several programming assignments. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 303: Introduction to Business Information Systems. 3 credits.
Introduces fundamentals of hardware, software, and networking. Emphasizes role of technology in improving contemporary business processes and competitive advantage. Includes basic relational concepts, hands-on experience in building business database applications and decision support using spreadsheet software. Notes: Students cannot receive credit for both MIS 301 and MIS 303. School of Business students will not be permitted to make more than three attempts to achieve a C or higher in MIS 303. The third attempt requires School of Business academic advisor approval. Those who do not successfully complete this course within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. For more information about this, see the "Termination from the Major" section under Academic Policies. Offered by School of Business (p. 888). Limited to two attempts.

Mason Core: Info Tech (complete) (p. 142)

Registration Restrictions:
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 310: Database Management Systems. 3 credits.
Introduces design, implementation and querying relational databases with a focus on business requirements. Theoretical database concepts are accompanied with hands-on experience. Term project includes requirements analysis, design and implementation of a substantial business database application. Notes: School of Business students may not receive credit for both MIS 310 and IT 214. Requires hands-on implementation using software package. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MIS 301 C or L301) or MIS 303 C or L303.
C Requires minimum grade of C.
Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 320: Networks and Security. 3 credits.
Introduces students to fundamentals of networking technologies and their role in businesses. Emphasis is on understanding the business implications of different networking technologies and solutions. Students learn to identify and understand the business requirements, and bring together the different technological components to design the required communication solutions. Also focuses on the types of security threats to the business network infrastructure, and approach to tackling such threats through business practices combined with appropriate technological solutions. Notes: The course also includes lab work and exercises. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MIS 301 C or L301) or MIS 303 C or L303.
C Requires minimum grade of C.
Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 330: Systems Analysis and Design. 3 credits.
Understanding systems analysis and design methods is a necessary skill for contemporary business analysts, managers, software engineers and system users. Provides students with the foundations for effectively using modern systems analysis and design tools and methodologies for developing modern software and applications. Topics include systems planning and feasibility analysis, requirements analysis, economics, systems design and project management. Notes: Requires team project. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisite: (MIS 310 C).
C Requires minimum grade of C.
Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
400 Level Courses

MIS 410: Advanced Database Systems. 3 credits.
Covers advanced database development and administration topics including triggers, stored procedures, indexes, performance tuning, and security. Students will use a state-of-the-art industrial strength database management system as a tool to familiarize themselves with database concepts. Students will conduct exercises on business reporting using databases and front-end applications. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: MIS 310C.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 412: E-Business Systems Development. 3 credits.
Introduces students to the development of web-based information systems for E-business. Students learn to develop web-based database applications for e-commerce using ASP.NET. Also covers Web 2.0 technologies and contemporary business trends and issues related to web application development. Emphasizes technologies, methods, and application development tools. Notes: Requires team project and computer lab. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MIS 301C or L301) or MIS 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 415: Information Systems Audit and Control. 3 credits.
Covers IT governance, controls, auditing applications, systems development, and operations. It examines trends and define recent advances in technology that impact IT controls and audits - including cloud computing, web-based applications, and server visualizations. It covers IT strategy, business value of IT, as well as controls for IT projects, outsourcing, contracts, cloud computing, etc. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MIS 301C, L301C, 303C or L303C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 420: Information Security and Assurance. 3 credits.
Covers technical concepts, and managerial and policy topics in information and cyber security. Lectures, reading, in-class presentations, hands-on exercises, and examinations ensure that students have sufficient technical awareness and managerial competence related to information security and assurance. Examines the nature of threats and vulnerabilities, cryptography, software vulnerabilities, managing risk, and security controls. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: MIS 320C.
C Requires minimum grade of C.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 430: Data Warehousing. 3 credits.
Deals with the challenges faced by businesses in managing large amounts of data and making meaningful use of this data for informed decision making. Introduces students to data warehousing fundamentals, practices, and technologies; and their application to solving business problems. Specific emphasis is on designing of data warehouse to meet the business requirements and hands-on learning of the design principles through implementation on commercially used data warehouse technologies. Also introduces students to OLAP solutions and data mining approaches to supporting business decision making. Notes: Term project required. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: MIS 310C or L310.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 431: Data Mining for Business Applications. 3 credits.
This course covers data mining methods and tools for business analytics to improve managerial decision making. The objective is to understand data mining methods and their suitability for decision making in a variety of business domains. The students will learn how to apply appropriate analytical tools to gain useful insights from real-life datasets. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MIS 301C, L301C, 303C or L303C) and (BUS 310C, OM 210C or 211C).
C Requires minimum grade of C.
Non-Degree level students may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 432: Advanced Data Mining. 3 credits.
This course covers business analytics using advanced data mining methods for developing predictive models. It includes feature selection to identify dimensions for constructing decision making models. More advanced techniques such as decision trees, neural networks, and other classification and prediction methods will be covered. Emphasis on applications will include hands-on experience using commercial data mining software and real business data. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: MIS 431C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 433: Programming for Analytics. 3 credits.
This course will introduce students to solving a broad set of data analysis problems using the popular programming language Python. It will cover basic Python skills and data structures, how to load data from different sources, rearrange and aggregate it, and finally how to analyze and visualize it. The course will also introduce students to several Python libraries. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: MIS 431C.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 491: Seminar in Management Information Systems. 3 credits.
Analyzes selected topics that highlight latest developments in information resource management field, including contemporary research findings and case studies of information systems in business and other organizations. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: (MIS 301C or L301) or MIS 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 492: Internship in Management Information Systems. 3 credits.
Opportunity to gain practical, professional experience in conjunction with academic development. An internship is an important part of academic and career preparation. May be used as elective credit. Notes: No more than 6 credits of School of Business internship coursework (BUS 492 or MIS 492) can be applied towards a student’s 120 (BU) degree applicable credits. Students must receive departmental approval in order to register for this course; please contact the School of Business Office of Career Services for internal eligibility requirements. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to ACCT 492, BUS 492, FNAN 492, MGMT 492, MKTG 492, OM 492, OSCM 492.

Recommended Prerequisite: 75 credit hours

Registration Restrictions:
Required Prerequisites: (MIS 301B or 303B) and (OM 301B or 303B).
B Requires minimum grade of B.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MIS 493: Independent Study in Management Information Systems. 1-3 credits.
Research and analysis of selected problems or topics in information resource management. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: (MIS 301C) or MIS L303C.
Requires minimum grade of C. Students with a class of Freshman may not enroll. Non-Degree or Washington Consortium level students may not enroll. Students with the terminated from BU major attribute may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

700 Level Courses

MIS 721: Seminar in Information Systems. 0-3 credits. This course is designed to expose doctoral students to academic research in information systems. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MIS 722: Seminar in Economics of Information Systems. 3 credits. This course is designed to expose doctoral students to a broad foundation in economics of information systems research. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MIS 723: Seminar in Technology Research in Information Systems. 3 credits. This course is designed to expose doctoral students to a broad foundation of technology in information systems research. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

800 Level Courses

MIS 892: Special Topics in Information Systems. 3 credits. This course is designed to expose doctoral students to a specialized topic within the information systems field through theoretical, quantitative and empirical work in the topic area. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Management of Secure Information Systems (MSEC)

500 Level Courses

MSEC 510: Foundations of Cyber Security. 2 credits. Provides an overview of the introductory topics in cyber security, which will be the basis for the other security-related in the MSIS. Topics include basic concepts on CIA (confidentiality, integrity, and availability), risk management, disaster recovery, access control, basic cryptography and software application vulnerabilities. Notes: 4 class sessions will be 3.5 hours long.1 class session will be 2 hours and 20 minutes long.(5 classes; 16 hours and 20 minutes total) Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

Recommended Prerequisite: Admission to MSEC program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MSEC 511: Security Practices in the Enterprise. 2 credits. Provides the practices and methods currently used by information security professionals to manage and operate the secure IT infrastructures in the enterprise industry and in the US Federal Sector. It covers tools and knowledge required to design, execute, and/or evaluate the INFOSEC standards and procedures required of government and industry. The topic includes security operation center (SOC), network security, malware countermeasures, operational systems security, risk analysis and incident response practices. Notes: 4 class sessions will be 3.5 hours long.1 class session will be 2 hours and 20 minutes long.(5 classes; 16 hours and 20 minutes total) Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

Recommended Prerequisite: MSEC 510.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MSEC 520: Networking Principles. 2 credits. Introduction to the principles guiding the design and operation of modern communication networks; using the structure provided by layered
service models, this course explores systematically the architecture and protocols of large, decentralized networks. Topics include medium access control in local area networks, switching, routing, and addressing, reliable and secure transport, flow and congestion control. Throughout, examples are drawn from the suite of Internet protocols. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

**Recommended Prerequisite:** Admission to MSEC program.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**MSEC 620: Networking Security.** 2 credits.
Provides a comprehensive introduction to network security concepts and problems and the mechanisms and tools to secure networks. Focuses on the Internet; discusses the threats to and from the Internet and examines existing Internet security techniques and protocols and their limitations. Topics include secret key and public key cryptography, Hash algorithms, authentication, IPSEC/VPN, IPSEC key exchange, SSL/TLS, firewall, anonymous communication, and VoIP security. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

**Recommended Prerequisite:** MSEC 510 and 520.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSEC 630:** Secure Information System Governance, Regulation, and Compliance. 2 credits.
Provides insight into secure information system governance, regulations, and compliance including noteworthy legislation, regulations, and compliance issues as well as commonalities and significant differences between departments and agencies within the Federal Executive Branch (FEB). The course is presented as formal lectures complemented by group discussion. Each topic is addressed as part of the larger Secure Information System structure. Notes: 4 class sessions will be 3.5 hours long.1 class session will be 2 hours and 20 minutes.(5 total class sessions; 16 hours and 20 minutes total). Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

**Recommended Prerequisite:** MSEC 510

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSEC 641:** Enterprise Security Threats. 1 credit.
Provides a broad exposition of emerging cyber-security threats for large-scale enterprises: Denial of Service (DoS), insider attacks, remote exploitation. It covers defenses that may mitigate or curtail some aspects of these emerging security threats. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

**Recommended Prerequisite:** MSEC 511.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSEC 642:** Enterprise Security Technologies. 2 credits.
Provides an overview of enterprise security tools used in advanced security IT departments of enterprises today. In addition to understanding the tools, their capabilities, and their gaps, students participate in hands-on laboratory exercises with enterprise security tools. Notes: 4 class sessions will be 3.5 hours long.1 class session will be 2 hours and 20 minutes long.(5 class sessions; 16 hours 20 minutes total) Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

**Recommended Prerequisite:** MSEC 511.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSEC 650:** Seminar: Enterprise Security Case Studies. 1 credit.
Provides an exposition of large enterprise security systems including operational requirements, threat model, security analysis, economic analysis, and defense posture options that expose the operational and
economic trade-offs when architecting Enterprise security. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

**Recommended Prerequisite:** MSEC 641.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSEC 696:** Directed Studies Management of Secure Information Systems.
1-3 credits.
Approval by faculty member and program director required prior to registration. Studies specialized topics in business not otherwise available in the curriculum. Offered by Volgenau School of Engineering (p. 1011). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Admission to the MSIS program or permission of the program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSEC 697:** Special Topics in Management of Secure Information Systems.
1-3 credits.
Sections established as necessary to focus on various topical issues that emerge in practice of management of secure information systems. Offered by Volgenau School of Engineering (p. 1011). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Admission to the MSIS program or permission of the program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

### 700 Level Courses

**MSEC 710: Global Residency.** 1-4 credits.
Students spend a week in an international residency. Emphasis is on how other nations deal with management of secure information system, the management of those systems, and related public policy issues. Corporate site visits are combined with presentations by professors from universities outside the United States and relevant practitioners. Students are required to write a paper summarizing their observations and attend pre-residency preparatory sessions. Offered by Volgenau School of Engineering (p. 1011). May be repeated within the degree for a maximum 4 credits.

**Recommended Prerequisite:** Admission to Executive MS in Management of Secure Information Systems.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MSEC 720: Capstone Project in Management of Secure Information Systems.**
1-3 credits.
Teams undertake a strategic evaluation and plan for the management of secure information systems. They develop plans that include technical, organizational, and policy aspects. A report is produced and presented to the entire cohort for discussion. Offered by Volgenau School of Engineering (p. 1011). May be repeated within the degree for a maximum 3 credits. Equivalent to TECM 737.

**Recommended Prerequisite:** Admission to Executive MS in Management of Secure Information Systems.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

### Marketing (MKTG)

### 300 Level Courses

**MKTG 303: Principles of Marketing.** 3 credits.
Examines marketing principles and practices for analyzing, creating, delivering, capturing, and communicating value to customers. Focuses on managing customer relationships using market-driven strategies, particularly segmentation, targeting, and positioning. The role of customer satisfaction in achieving organizational objectives and ethical decision making in a global economy are also emphasized. Notes: Students cannot receive credit for both MKTG 301 and MKTG 303. School of Business students will not be permitted to make more than three attempts to achieve a C or higher in MKTG 303. The third attempt requires School of Business academic advisor approval. Those who
do not successfully complete this course within three attempts will be
terminated from their major and will not be eligible to receive a degree
from the School of Business. For more information about this, see the
"Termination from the Major" section under Academic Policies. Offered by
School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MKTG 307: Federal Government Marketing. 3 credits.
This course explores the government procurement process and
contracting from the perspective of marketers and contractors
engaged in the federal community. Students will review and analyze the
procurement practices of major government contractors and seek to
understand the challenges associated with conducting business with
the United States government. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisite: MKTG 303C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MKTG 311: Sales Management. 3 credits.
Familiarizes students with marketing-sales interfaces including sales
force role and capabilities, personal selling strategies, organizational
relationships, and responsibilities of sales managers including training,
motivating, and evaluating sales force. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MKTG 301C or L301) or MKTG 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MKTG 312: Consumer Behavior. 3 credits.
Marketing strategy implications of internal and external influences on
consumer decision making, purchase, and consumption behaviors.
Emphasizes demographics, lifestyle, situation, perception, learning, and
attitude formation and change, focusing on customer segmentation,
satisfaction and loyalty. A third attempt will require academic advisor
approval. Offered by School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MKTG 301C or L301) or MKTG 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MKTG 313: Advertising and Marketing Communications. 3 credits.
Examines development of integrated communications programs,
including advertising, sales promotion, public relations, direct marketing,
and other communication tools. Focuses on setting communications
objectives and budgets, media planning, creative strategy, execution, and
evaluation. Provides skills for analyzing the strengths, weaknesses and
synergies of marketing communication tools. A third attempt will require
academic advisor approval. Offered by School of Business (p. 888).
Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MKTG 301C or L301) or MKTG 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MKTG 315: Digital Marketing. 3 credits.
Explores impact of Digital and Internet technology on marketing strategy
and practice. Topics include online advertising campaigns (focusing on
search marketing), web site usability and content, and the use of social
and interactive media to build customer relationships and foster brand
loyalty. A third attempt will require academic advisor approval. Offered by
School of Business (p. 888). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MKTG 301C or L301) or MKTG 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.
**MKTG 332: Retailing and E-Commerce Management.** 3 credits.
Examination of retailing as a specialized economic and social institution within the distribution process and as it relates to overall marketing activities. The planning and implementing of store and non-store (catalog, Internet) retail marketing strategies are addressed. Critical decision alternatives, variables, forces, and processes are considered from a managerial perspective. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301 or L301) or MKTG 303 or L303.  
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 333: Business to Business Marketing.** 3 credits.
Examines unique challenges and opportunities of marketing systems among suppliers, manufacturers, resellers, and government. Focuses on developing a capability to identify and nurture long-term B2B relationships. Provides tools and techniques commonly leveraged by B2B marketers to develop these relationships with their clients. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301 or L301) or MKTG 303 or L303.  
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 352: Marketing Analytics for New Product Development.** 3 credits.
In today’s technology-enabled world, organizations collect lot of information as part of their business operations and pool it with data acquired from outside sources. Marketing analytics is a systematic approach to harnessing this data/information to drive effective marketing decision making. Students will learn to analyze historical data, market research data, and competitive information for making strategic marketing decisions. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301 or L301) or (MKTG 303 or L303) or MBUS 303 and (BUS 310 or STAT 350).  
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 353: New Product Development.** 3 credits.
This course focuses on all aspects of the new product and new service development process, from insight and inspiration through design and product launch. The course also explores current topics and best practices in innovation management, such as open innovation, managing creativity in organizations, and product design, and rapid prototyping. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301 or L301) or (MKTG 303 or L303) or (MBUS 303 or L303).  
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**MKTG 407: Global Marketing.** 3 credits.
Multidisciplinary approach to global and international marketing from viewpoint of business management. Examines major marketing issues affecting companies operating in a global environment. Students achieve understanding of economic, political, and cultural differences among nations as they affect marketing opportunities and operations, and develop skills to identify and evaluate global and international marketing opportunities. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301 or L301) or (MKTG 303 or L303).
Students with a class of Freshman may not enroll.  
Non-Degree level students may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 455: Ethnic and Multicultural Marketing.** 3 credits.  
Ethnic and Multicultural Marketing examines the critical marketing issues and opportunities that have arisen with the changing U.S. demographics. The focus is domestic markets. The growth in minority populations indicates a need for specialized approaches for the entire marketing mix. Segmentation can be powerful when considering non-mainstream markets if the marketer understands and capitalizes on the different approaches cultural and ethnic groups use as consumers. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301C or L301) or (MKTG 303C or L303).  
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.  
Non-Degree level students may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 462: Honors Seminar in Marketing (Topic Varies).** 3 credits.  
Topic and format vary. In-depth study of topic of interest to managers and organizations. Notes: Enrollment limited and competitive. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Recommended Prerequisite:** Degree status in MKTG major; senior standing; permission of department.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301B or L301) or (MKTG 303B or L303).  
B Requires minimum grade of B.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major in Marketing.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 471: Marketing Management.** 3 credits.  
Emphasizes managerial aspects of marketing, including developing marketing strategies and plans, and integrating specific elements of marketing process. Emphasizes case analysis. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 312C or L312) and (MKTG 351C or L351).  
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 481: RS: Marketing in the Nonprofit Sector.** 3 credits.  
Examines the unique challenges of applying marketing principles and practices to not-for-profit groups such as human service and philanthropic organizations, museums, health and wellness advocates, educational institutions, industry associations and government. Emphasis on case studies, team work, and projects. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts.

**Specialized Designation:** Research/Scholarship Intensive

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301C or L301) or MKTG 303C or L303.  
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.  
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 491: Seminar in Marketing.** 3 credits.  
In-depth treatment in seminar format of contemporary topics in marketing. Culminates in preparation of substantial paper and oral presentation. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301C or L301) or MKTG 303C or L303.  
C Requires minimum grade of C.

Students with a class of Freshman may not enroll.  
Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

**Schedule Type:** Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 492: Internship in Marketing. 3 credits.**
Opportunity to gain practical, professional experience in conjunction with academic development. An internship is an important part of academic and career preparation. May be used as elective credit, but may not be repeated. Notes: No more than 6 credits of School of Business internship coursework (BUS 492 or MKTG 492) can be applied towards a student's 120 (BU) degree applicable credits. Students must receive departmental approval in order to register for this course; please contact the School of Business Office of Career Services for internal eligibility requirements. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to ACCT 492, BUS 492, FNAN 492, MGMT 492, MIS 492, OM 492, OSCM 492.

**Recommended Prerequisite:** 75 credit hours

**Registration Restrictions:**
**Required Prerequisites:** MKTG 301^C in 303^C.
^C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the terminated from BU major attribute may **not** enroll.

**Schedule Type:** Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**MKTG 499: Independent Study. 1-3 credits.**
Primary research proposal in marketing area. Requires prior approval from instructor and associate dean for undergraduate programs. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** 90 hours and a minimum of 24 hours of business courses including principles of marketing, finance, and management.

**Registration Restrictions:**
**Required Prerequisites:** (MKTG 301^C or L301) or (MKTG 303^C or L303).
^C Requires minimum grade of C.

Students with a class of Freshman may **not** enroll.

Non-Degree or Washington Consortium level students may **not** enroll.

Students with the terminated from BU major attribute may **not** enroll.

**Schedule Type:** Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**100 Level Courses**

**MATH 104: Trigonometry and Transcendental Functions. 2 credits.**
Exponential and logarithmic functions, trigonometric functions, and analytic trigonometry. This course does not satisfy the university's quantitative reasoning requirement. May not be taken for credit after receiving a C or better in MATH 105 or in any MATH course numbered 113 or higher. May not take MATH 105 for credit after receiving a C or better in MATH 104. Notes: May not be used as credit toward BA or BS in mathematical sciences. Offered by Mathematics (p. 740). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** minimum score of 07 in 'Math Placement Algebra II'.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 105: Precalculus Mathematics. 4 credits.**
Reviews mathematics skills essential to studying calculus. Topics include equations, inequalities, absolute values, graphs, functions, exponential and logarithmic functions, and trigonometry. Notes: Call Mathematical Sciences Department at 703-993-1460 for details. May not be used as credit toward BA or BS in mathematical sciences. This course does not satisfy the university’s quantitative reasoning requirement for the BA degree. May not be taken for credit after receiving grade of C or better in any MATH course numbered 113 or higher. Offered by Mathematics (p. 740). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** minimum score of 13 in 'Math Placement Algebra I'.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 106: Quantitative Reasoning. 3 credits.**
Quantitative skills for real world. Topics include critical thinking, modeling by functions, graphs, growth, scaling, probability, and statistics. Offered by Mathematics (p. 740). Limited to three attempts.

**Mason Core:** Quantitative Reasoning (p. 142)

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 108: Introductory Calculus with Business Applications. 3 credits.**
Functions, limits, derivative, and integral. Applications of differentiation and integration. Notes: Call Mathematical Sciences Department at 703-993-1460 for details. Students who have received credit for MATH 113 or 114 may not receive credit for this course. Offered by Mathematics (p. 740). Limited to three attempts.

**Mason Core:** Quantitative Reasoning (p. 142)

**Registration Restrictions:**
**Required Prerequisite:** minimum score of 13 in 'Math Placement Algebra I'.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
MATH 110: *Introductory Probability.* 3 credits.
Elementary set theory, probability, and statistics. Offered by Mathematics (p. 740). Limited to three attempts.

Mason Core: Quantitative Reasoning (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 111: *Linear Mathematical Modeling.* 3 credits.

Mason Core: Quantitative Reasoning (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 112: *Discrete Mathematics for IT.* 3 credits.
Introduces ideas of discrete mathematics including mathematical induction, sets, logic, graphs, trees, basic counting arguments, and discrete probability. Students who have received credit for MATH 125 may not receive credit for this course. Notes: Intended for IT students; does not count toward a major or minor in mathematics. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: minimum score of 13 in 'Math Placement Algebra I', MATH 105 C, 108 C or 113 C.
C Requires minimum grade of C.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 113: *Analytic Geometry and Calculus I.* 4 credits.
Functions, limits, the derivative, maximum and minimum problems, the integral, and transcendental functions. Offered by Mathematics (p. 740). Limited to three attempts. Equivalent to MATH 115, MATH 124.

Mason Core: Quantitative Reasoning (p. 142)
Registration Restrictions:
Required Prerequisites: (minimum score of 07 in 'Math Placement Transcendentals', MATH 105 C or 104 C).
C Requires minimum grade of C.
Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 114: *Analytic Geometry and Calculus II.* 4 credits.
Methods of integration, conic sections, parametric equations, infinite series, and power series. Offered by Mathematics (p. 740). Limited to three attempts. Equivalent to MATH 115.

Mason Core: Quantitative Reasoning (p. 142)
Registration Restrictions:
Required Prerequisites: (MATH 113 C, U115 or 113 A).
C Requires minimum grade of C.
A Requires minimum grade of A.
Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 115: *Analytic Geometry and Calculus I (Honors).* 4 credits.
More challenging version of MATH 113. Functions, limits, the derivative, maximum and minimum problems, the integral, and transcendental functions. Offered by Mathematics (p. 740). Limited to three attempts. Equivalent to MATH 113.

Mason Core: Quantitative Reasoning (p. 142)
Recommended Prerequisite: Permission of instructor.
Registration Restrictions:
Required Prerequisite: (minimum score of 65 in 'Math Placement Transcendentals').
Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 116: *Analytic Geometry and Calculus II (Honors).* 4 credits.

Registration Restrictions:
Required Prerequisites: (MATH 115 C, U115 or 113 A).
C Requires minimum grade of C.
A Requires minimum grade of A.
Schedule Type: Lecture, Recitation
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 123: *Calculus with Algebra/Trigonometry, Part A.* 3 credits.
Math 123, with 124, is a two semester sequence for students with limited math background who desire careers in the sciences. In two semesters, students progress from algebra through the basic calculus covered in Math 113. Math 123 integrates the beginnings of calculus through the derivative with relevant precalculus algebra and trigonometry. Notes: Students who successfully complete Math 123-124 are considered the same as having successfully completed MATH 113 and can sign up for Math 114, Calculus II. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (minimum score of 13 in 'Math Placement Algebra I' and minimum score of 07 in 'Math Placement Algebra II') or MATH 105 C or 104 C.
C Requires minimum grade of C.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 124: *Calculus with Algebra/Trigonometry, Part B.* 3 credits.
Math 123, with 124, is a two semester sequence for students with limited math background who desire careers in the sciences. In two semesters, students progress from algebra through the basic calculus covered in
Math 113. Math 124 will review basic differentiation and applications and then proceed to cover integration including transcendental functions. Notes: Students who successfully complete Math 123-124 are considered the same as having successfully completed MATH 113 and can sign up for Math 114, Calculus II. Offered by Mathematics (p. 740). Limited to three attempts. Equivalent to MATH 113.

**Mason Core:** Quantitative Reasoning (p. 142)

**Registration Restrictions:**
Required Prerequisite: MATH 123<sup>C</sup>.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 125: Discrete Mathematics I.** 3 credits.
Introduces ideas of discrete mathematics and combinatorial proof techniques including mathematical induction, sets, graphs, trees, recursion, and enumeration. Offered by Mathematics (p. 740). Limited to three attempts.

**Mason Core:** Quantitative Reasoning (p. 142)

**Registration Restrictions:**
Required Prerequisites: minimum score of 13 in 'Math Placement Algebra', MATH 105<sup>C</sup>, 106<sup>C</sup> or 113<sup>C</sup>.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 175: Mathematics of Cryptography: An Introduction.** 3 credits.
Every day, 143,000 terabytes of data are transferred across the internet, including financial transactions, medical records, and sensitive client data. Half of this traffic is secured through encryption, relying on mathematical algorithms such as the RSA to encode the data in a way that only the recipient can decode. In this class, we will see how cryptography works first-hand. We will start with classical ciphers (Atbash and Caesar ciphers) and develop our mathematical techniques and programming abilities until we are able to implement RSA from scratch. Topics covered in the course lead into the following majors: mathematics, computer science, electrical engineering, and cyber security engineering. Offered by Mathematics (p. 740). Limited to three attempts.

**Recommended Prerequisite:** B or better in a calculus course.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

**MATH 203: Linear Algebra.** 3 credits.

**Registration Restrictions:**
Required Prerequisites: (MATH 203<sup>C</sup> or U203) and (MATH 213<sup>C</sup>, U213, 215<sup>C</sup> or U215).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 271: Mathematics for the Elementary School Teachers I.** 3 credits.
Concepts and theories underlying elementary school mathematics, including problem solving, patterns, sequences, set theory, numeration, number sense, operations and properties of integers, whole, rational, irrational and real numbers, number theory, ratio, proportion, percent and mathematical systems. Notes: Does not count toward major in mathematics. Offered by Mathematics (p. 740). Limited to three attempts.

**Recommended Prerequisite:** Grade of C or better in 3 credits of college math.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 272: Mathematics for the Elementary School Teachers II.** 3 credits.
Continuation of MATH 271. Concepts and theories underlying elementary school mathematics including functions, algebra, geometry, statistics, and probability. Notes: Intended for school educators; does not count toward major in mathematics. Offered by Mathematics (p. 740). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisite: (MATH 271 C).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 290: Introduction to Advanced Mathematics.** 3 credits.
Introduction to proofs and the language of mathematics. Topics include induction, equivalence relations, cardinality and basic properties of the real numbers. Designated as a writing intensive course for mathematics majors. Notes: Primarily intended for mathematics majors. Offered by Mathematics (p. 740). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry, Writing Intensive in Major

**Registration Restrictions:**
Required Prerequisites: (MATH 114 C, 114T or 116 C).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**MATH 301: Number Theory.** 3 credits.
Prime numbers, factorization, congruences, and Diophantine equations. Offered by Mathematics (p. 740). Limited to three attempts.

**Recommended Prerequisite:** Completion of 6 hours of MATH.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 302: Foundations of Geometry.** 3 credits.
Fundamental concepts of incidence. Axioms of Euclidean geometry and the resulting theory, and axioms and development of non-Euclidean and projective geometry. Offered by Mathematics (p. 740). Limited to three attempts.

**Recommended Prerequisite:** Completion of 6 hours of MATH.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 307: Mathematical Modeling.** 3 credits.
Focuses on the development and analysis of mathematical models that make qualitative and quantitative predictions. Students will address particular situations while learning general modeling strategies. Offered by Mathematics (p. 740). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisites: (MATH 203 C) and (MATH 214 C or 216 C).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 312: Geometry.** 3 credits.
Two and three dimensional analytic geometry, geometric transformations, projective geometry, conics and quadric surfaces, spherical geometry, vector geometry. Offered by Mathematics (p. 740). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisites: (MATH 114 C or 116 C).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 313: Mathematical Analysis.** 3 credits.
Introduction to advanced analysis. Offered by Mathematics (p. 740). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisites: (MATH 213 C, 213T or 215 C).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 314: Introduction to Applied Analysis.** 3 credits.
Vector differential calculus, vector integral calculus, and complex analysis. Offered by Mathematics (p. 740). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisites: (MATH 213 C, 213T or 215 C).
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MATH 315: Introduction to Applied Mathematics.** 3 credits.

**Registration Restrictions:**
Required Prerequisites: (MATH 214 C, U214, 216 C or U216).
C Requires minimum grade of C.

**Schedule Type:** Lecture
Number system, functions, sequences, limits, continuity, differentiation, integration, transcendental functions, and infinite series. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (MATH 213C or 215C) and MATH 290C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 316: Advanced Calculus II. 3 credits.
Sequences of functions, Taylor series, vectors, functions of several variables, implicit functions, multiple integrals, and surface integrals. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (MATH 315C or L315).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 321: Abstract Algebra. 3 credits.
Theory of groups, rings, fields. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (MATH 213C or 215C) and (MATH 290C).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 322: Advanced Linear Algebra. 3 credits.
Abstract vector spaces, linear independence, bases, linear transformations, matrix algebra, inner product, and special topics. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (MATH 203C or U203) and (MATH 290C or U290).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 325: Discrete Mathematics II. 3 credits.
Advanced counting, binomial identities, generating functions, advanced recurrence, inclusion-exclusion, and network flows. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (MATH 125C or 125T).
C Requires minimum grade of C.
Recommended Prerequisite: MATH 290 and at least 3 credits of Mathematics above MATH 300.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 405: Honors Thesis in Mathematics I. 3 credits.
A project, which is intended to result in a thesis, is to be chosen and completed under the guidance of a full-time faculty member. An oral presentation is required for MATH 405. Offered by Mathematics (p. 740). Limited to three attempts.

Specialized Designation: Impact Associated.

Recommended Prerequisite: MATH 315, three additional credits of MATH above the 300 level (excluding MATH 400) and admission to the Honors Program in Mathematics.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 406: RS: Honors Thesis in Mathematics II. 3 credits.
A project, which is intended to result in a thesis, is to be chosen and completed under the guidance of a full-time faculty member. Oral and written presentations are required in MATH 406. Offered by Mathematics (p. 740). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive

Registration Restrictions:
Required Prerequisite: (MATH 405<sup>C</sup>).
C Requires minimum grade of C.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 411: Functions of a Complex Variable. 3 credits.
Analytic functions, contour integration, residues, and applications to such topics as integral transforms, generalized functions, and boundary value problems. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: (MATH 214<sup>C</sup> or 214T) or (MATH 216<sup>C</sup> or 216T).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 413: Modern Applied Mathematics I. 3 credits.

Registration Restrictions:
Required Prerequisites: (MATH 203<sup>C</sup> or 203T) and (MATH 214<sup>C</sup> or 214T) or (MATH 216<sup>C</sup> or 216T).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 414: Modern Applied Mathematics II. 3 credits.
Continuation of MATH 413, which involves synthesis of pure mathematics and computational mathematics. Fourier analysis and its role in applied mathematics developed (differential equations and approximations). Discrete aspects emphasized in computational models. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: (MATH 413<sup>C</sup>).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 431: Topology. 3 credits.

Registration Restrictions:
Required Prerequisite: (MATH 315<sup>C</sup>).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 441: Deterministic Operations Research. 3 credits.

Registration Restrictions:
Required Prerequisites: (MATH 203<sup>C</sup> or 203T).
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 442: Stochastic Operations Research. 3 credits.

Registration Restrictions:
Required Prerequisite: (MATH 351<sup>C</sup>).
C Requires minimum grade of C.
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 446: Numerical Analysis I. 3 credits.

Registration Restrictions:
Required Prerequisites: (MATH 203C or 203T) and (CS 112C or 112T). C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 447: Numerical Analysis II. 3 credits.

Registration Restrictions:
Required Prerequisites: (MATH 214C, 214T, 216C or 216T) and (MATH 446C). C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 453: Advanced Mathematical Statistics. 3 credits.
Topics from statistics relevant to the field of actuarial science, such as: forecasting and time series, maximum likelihood tests, sufficiency, most powerful tests, distributions of quadratic forms, topics from nonparametric statistics, Bayesian statistics, and linear models. Offered by Mathematics (p. 740). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: MATH 352C or STAT 356C. C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 491: Undergraduate Seminar. 1-3 credits.
For mathematical sciences majors only. Independent study in math.
Registration Restrictions:
Recommended Corequisite: For mathematical science majors only.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 494: Topics in Applicable Mathematics. 3 credits.
Topics that have been successfully used in applications of mathematics. Subject determined by instructor. Offered by Mathematics (p. 740). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: 6 hours of MATH at or above the 310 level.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MATH 495: Undergraduate Seminar. 1 credit.
Offered by Mathematics (p. 740). May be repeated within the degree for a maximum 3 credits.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

MATH 551: Regression and Time Series. 3 credits.
Mathematics of regression, exponential smoothing, time series, and forecasting. Material included in this course constitutes Society of Actuaries Validation by Educational Experience (VEE) for applied statistics and corresponds to part of Casualty Actuary Society Exam 3. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 352, STAT 652, SOA exam P, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 553: Advanced Mathematical Statistics in Actuarial Sciences. 3 credits.
Topics from statistics relevant to the field of actuarial science, such as: forecasting and time series, maximum likelihood tests, sufficiency, most powerful tests, distributions of quadratic forms, topics from nonparametric statistics, Bayesian statistics, and linear models. Offered by Mathematics (p. 740). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: MATH 352, MATH 356 or MATH 554. Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 554: Financial Mathematics. 3 credits.
Simple and compound interest, annuities, present and future value, yield rates, capital budgeting, amortization schedules, mortgages, bonds. Material corresponds to the Society of Actuaries Exam: Financial Mathematics (FM). Not appropriate for graduate science and engineering majors not considering actuarial or financial career. Cannot be counted toward MS or PhD degree in mathematics. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 113.

Recommended Corequisite: MATH 114.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 555: Actuarial Modeling I. 3 credits.
Two-semester sequence covering portions of the material corresponding to the Society of Actuaries Exam M, Casualty Actuary Society Exam 3, and Joint Board Exam EA1. The remaining material for these exams is covered in MATH 551 and 653. Topics include survival distribution and life tables, life insurance, life annuities, net premiums, net premium reserves, multiple life and multiple decrement models, pensions, insurance models including expense, and nonforfeiture benefits and cash values. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 554 and either MATH 351 or STAT 344.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 556: Actuarial Modeling II. 3 credits.
Two-semester sequence covering portions of the material corresponding to the Society of Actuaries Exam M, Casualty Actuary Society Exam 3, and Joint Board Exam EA1. The remaining material for these exams is covered in MATH 551 and 653. Topics include survival distribution and life tables, life insurance, life annuities, net premiums, net premium reserves, multiple life and multiple decrement models, pensions, insurance models including expense, and nonforfeiture benefits and cash values. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 554 and either MATH 351 or STAT 344.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 557: Financial Derivatives. 3 credits.

Recommended Prerequisite: MATH 554 and either MATH 351 or STAT 344.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**MATH 600: Special Topics in Mathematics.** 1-6 credits.
Mathematical workshops, special courses, or other projects. Offered by Mathematics (p. 749). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 601: Analysis I for Teachers.** 3 credits.
Develops continuous ideas of calculus with particular emphasis on concepts as opposed to computational aspects of calculus. Specific topics include decimal representation of real numbers, sequences, series, and limits; differentiation to find speed, slopes of curves, and tangents; integration to find volumes and distances and area under curves. Optimization problems including maximization of area and volume, and modeling of these concepts. Graphing techniques supported by theory of calculus and graphing utilities such as TI-83 calculator or computer software such as Maple. Notes: Background in mathematics desirable but not necessary. Some topics from college algebra will be reviewed in class, but thorough understanding of high school algebra and trigonometry expected. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Corequisite:** Open only to inservice math teachers at the middle or secondary level, or by Permission of Instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 604: Geometry for Teachers.** 3 credits.
Covers standard topics from Euclidean geometry, and includes discussion of non-Euclidean geometries. Emphasizes informal and explorative approach to geometry, and makes use of geometry sketchpad. Other topics include geometric constructions, and role of proof in geometry. Notes: Background in mathematics desirable but not necessary. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Corequisite:** Open only to inservice math teachers at the middle or secondary level, or by permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 605: Discrete/Finite Mathematics for Teachers.** 3 credits.
Thorough understanding of high school algebra assumed. Discusses finite mathematics in juxtaposition to continuous ideas of calculus. Topics may consist of elementary counting and combinatorics including recursion and difference equations and their analogy to calculus; thorough discussion of probability and central measures of statistics; and graph theory and its connection to geometry. Notes: Background in mathematics desirable but not necessary. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Corequisite:** Open only to inservice math teachers at the middle or secondary level, or by permission of instructor.

**Registration Restrictions:**
Mathematics (MATH)

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 607: Algebraic Structure for Teachers. 3 credits.
Expands on customary operations on integers and rationals to discuss systems that mimic these operations. Emphasizes multiplicative and additive inverses and their corresponding identities as they occur in other systems. Topics might include permutation groups, rigid transformations, groups of symmetry of the plane and connection to geometry, and matrices treated as linear transformations and connections to solutions of systems of equations. Notes: Background in mathematics desirable but not necessary. Thorough understanding of high school algebra assumed. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Corequisite: Open only to inservice math teachers at the middle or secondary level, or by permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 608: Problem Solving in Mathematics. 3 credits.
Introduces variety of challenging mathematical problems appropriate for middle school student to analyze, and solving problems using mathematics learned in previous courses. Also asks students to search for such problems and orally present solutions. Notes: Background in mathematics or science desirable but not necessary. Assumes exposure to most of topics covered in MATH 601, 604, 605, and 607. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Corequisite: Open only to inservice math teachers at the middle or secondary level, or by Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 610: Number Systems and Number Theory for K-8 Teachers. 3 credits.
This course covers the topics: ways of representing numbers, relationships between numbers, number systems, the meanings of operations and how they relate to one another, and computation within the number system as a foundation for algebra. It also includes episodes in history and development of the number system, and will examine the developmental sequence and learning trajectory as children learn this material. Offered by Mathematics (p. 740). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 611: Geometry and Measurement for K-8 Teachers. 3 credits.
The course explores the foundations of informal measurement and geometry 'in one, two, and three dimensions. The van Hiele model for geometric learning is used as a framework for how children build their understanding of length, area, volume, angles, and geometric relationships. Visualization, spatial reasoning, and geometric modeling are stressed. As appropriate, transformational geometry, congruence, similarity, and geometric constructions will be discussed. Offered by Mathematics (p. 740). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 612: Probability and Statistics for K-8 Teachers. 3 credits.
An introduction to probability, descriptive statistics, and data analysis. Topics studied will include the exploration of randomness, data representation, modeling. Descriptive statistics will include measures of central tendency, dispersion, distributions, and regression. The analysis of experiments requiring hypothesizing, experimental design and data gathering will also be discussed. Offered by Mathematics (p. 740). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 613: Algebra and Functions for K-8 Teachers. 3 credits.
The course will examine representing and analyzing mathematical situations and structures using generalization and algebraic symbols and reasoning. Attention will be given to the transition from arithmetic to algebra, working with quantitative change, and the description of and prediction of change. Offered by Mathematics (p. 740). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 614: Rational Numbers and Proportional Reasoning for K-8 Teachers. 3 credits.
This course will cover the basic number strands in fractions and rational numbers, decimals and percents, and ratios and proportions in the school curriculum. Instruction will cover interpretations, computations, and estimation with a coordinated program of activities that develop both rational number concepts and skills and proportional reasoning. Offered by Mathematics (p. 740). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 619: Topics in Mathematical Logic. 3 credits.
Special topics in foundations of mathematics not included in regular mathematics curriculum. May be repeated for credit. Offered by Mathematics (p. 740). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 621: Algebra I. 3 credits.
Groups, linear algebra, and matrix groups. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: Familiarity with basic properties of groups and rings or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 624: Euclidean Geometry. 3 credits.
Euclidean space, geometry of k-dimensional planes, the affine structure of Euclidean space, rigid motions and similarities, parallelotopes and volumes, convex polytopes, quadric surfaces, and additional topics by instructor’s choice. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 315 and MATH 322, or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 625: Numerical Linear Algebra. 3 credits.
Theory and development of numerical algorithms for solving variety of matrix problems: linear systems, least squares problems, eigenvalue problems, and singular value decomposition. Direct and iterative method, analysis of sensitivity to rounding errors, and applications. Offered by Mathematics (p. 740). May not be repeated for credit. Equivalent to CSI 740.

Recommended Prerequisite: Computer literacy, including some programming experience.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 629: Topics in Algebra. 3 credits.
Special topics in pure and applied algebra not covered in regular algebra. May be repeated for credit when topic varies. Offered by Mathematics (p. 740). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 631: Topology I: Topology of Metric Spaces. 3 credits.
Covers definition and basic examples of metric spaces, open and closed sets, subspaces and finite products, sequences and convergence, compactness and separability, continuous functions, uniform continuity, metric space C(X) and uniform convergence, and homotopy. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 315 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 641: Combinatorics and Graph Theory. 3 credits.
Covers enumerative combinatorics, including partially ordered sets; Moebius inversion and generating functions; and major topics in graph theory such as graph coloring, Ramsey theory, and matching. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 321 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 644: Convex and Discrete Geometry. 3 credits.
Basic properties of Euclidean space, convex sets and convex cones, convex hulls, extremal structure of convex sets, support and separation properties, polyhedra and polytopes, special classes of convex sets, Helly-type theorems, selected problems of discrete geometry. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 315 and MATH 322, or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 649: Topics in Combinatorics. 3 credits.
Special topics in combinatorics not covered in regular combinatorics sequence. May be repeated for credit. Offered by Mathematics (p. 740). May be repeated within the term for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
**MATH 553: Construction and Evaluation of Actuarial Models I.** 3 credits.
Economics of insurance, individual risk models for short term, collective risk models for single period, collective risk models over an extended period, and applications of risk theory. Material included in this course corresponds to portions of the Society of Actuaries Exam M and Casualty Actuary Society Exam 3. The remaining material for these exams is covered in MATH 551, 555, and 556. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 351 or STAT 644 required. MATH 555 recommended but not required.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 554: Construction and Evaluation of Actuarial Models II.** 3 credits.
Nature and properties of survival and loss models, methods of estimates from complete and incomplete data, tabular and parametric models, and practical issues in survival model estimation. Material included in this course corresponds to portions of the Society of Actuaries Exam C and Casualty Actuary Society Exam 4. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 556 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 651: Fourier Analysis.** 3 credits.
Study of fundamental ideas in Fourier analysis. Topics include orthonormal systems, Fourier series, continuous and discrete Fourier transform theory, generalized functions, and introduction to spectral analysis. Uses applications to physical sciences, linear systems theory, and signal processing to integrate topics. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 655 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 652: Complex Analysis I.** 3 credits.
Topology of complex numbers, holomorphic functions, series, complex integration. Meromorphic, multivalued, and elliptic functions. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 551, 555, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 653: Dynamical Systems.** 3 credits.
Contemporary topics in nonlinear dynamical systems illustrated in mathematical models from physics, ecology, and population dynamics. Traditional qualitative analysis of difference and differential equations provides background for understanding chaotic behavior when it occurs in these models. Topics include stability theory, fractals, Lyapunov exponents, and chaotic attractors. Offered by Mathematics (p. 740). May not be repeated for credit. Equivalent to MATH 661.

**Recommended Prerequisite:** Elementary courses in linear algebra and differential equations.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 674:** *Stochastic Differential Equations.* 3 credits.
Introduces stochastic calculus and differential equations. Includes Wiener process, Ito and Stratonovich integrals, Ito formula, martingales, diffusions, and applications, including financial applications. Simulations and numerical approximations of solutions. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 214 and 351.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 675:** *Linear Analysis.* 3 credits.
Metric spaces, normed linear spaces, completeness, compactness, continuous (bounded) linear transformations, Banach spaces, Hilbert spaces, and orthogonal series. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 315 and MATH 322, or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 677:** *Ordinary Differential Equations.* 3 credits.
Qualitative and quantitative theory of ordinary differential equations. Phase portrait analysis of linear and nonlinear systems, including classification of stable and unstable equilibrium states and periodic orbits. Poincare-Bendixson theorem, Lyapunov stability and Lyapunov functions, and bifurcation theory. Optional topics include averaging and perturbation methods, numerical solution techniques, and chaos. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 214 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 678:** *Partial Differential Equations.* 3 credits.
Physical examples, characteristics, boundary value problems, integral transforms, and other topics, such as variational, perturbation, and asymptotic methods. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** Elementary differential equations course.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 679:** *Topics in Analysis and Potential Theory.* 3 credits.
Special topics not covered in regular analysis or potential theory sequence. May be repeated for credit when topic varies. Offered by Mathematics (p. 740). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 680:** *Industrial Mathematics.* 3 credits.
Takes examples from industry and goes through complete solution process: formulation of mathematical model of problem; solution, possibly by numerical approximation; and interpretation and presentation of results. Emphasizes working in groups, relating mathematics to concrete situations, and communication and presentation skills. Offered by Mathematics (p. 740). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 683: Modern Optimization Theory.** 3 credits.
Introduces basic mathematical ideas and methods for solving linear and nonlinear programming problems, with emphasis on mathematical aspects of optimization theory. Reviews classical topics of linear programming, and covers recent developments in linear programming, including interior point method. Considers basic results in nonlinear programming, including very recent developments in this field. Offered by Mathematics (p. 740). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 685: Numerical Analysis.** 3 credits.
Computational techniques for solving problems arising in science and engineering. Includes theoretical development as well as implementation, efficiency, and accuracy issues in using algorithms and interpreting results. Specific topics include linear and nonlinear systems of equations, polynomial interpolation, numerical integration, and introduction to numerical solution of differential equations. Offered by Mathematics (p. 740). May not be repeated for credit. Equivalent to CSI 690, OR 682.

**Recommended Prerequisite:** Computer literacy, including some programming experience.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 686: Numerical Solutions of Differential Equations.** 3 credits.
Finite difference methods for initial value problems, two-point boundary value problems, Poisson equation, heat equation, and first-order partial differential equations. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 214 and MATH 446 or 685.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 687: Variational Methods.** 3 credits.
Weak formulation of partial differential equations, energy principles, Galerkin approximations, and finite element methods. Includes review and development of necessary analysis. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 446 or 685, and elementary differential equations course.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 689:** Special topics in applied and computational mathematics not covered in the regular applied and computational mathematics sequence. May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 697:** Independent Reading and Research. 1-6 credits.
In areas of importance, but with insufficient demand to justify a regular course, students may undertake a course of study under the supervision of a consenting faculty member. Written statement of the content of the course and a tentative reading list is normally submitted as part of the request for approval. Literature review, project report, or other written product is normally required. May be repeated for credit. Offered by Mathematics (p. 740). May be repeated within the term.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 700 Level Courses

**MATH 721:** Algebra II. 3 credits.
Rings, fields, and Galois theory. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 621.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 722:** Algebraic Topology. 3 credits.
Covers simplices and simplicial complexes, cycles and boundaries, simplicial homology, homological algebra, homotopy and the fundamental group, cohomology. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 621 and MATH 631 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 723:** Combinatorial Structures. 3 credits.
Studies structural properties of objects encountered in pure and applied combinatorics. Topics include partially ordered sets, codes, designs, matroids, buildings, symmetrical structures, permutation groups, and face lattices of polytopes. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 321 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 724:** Commutative Algebra. 3 credits.
Study of commutative rings and their ideals, and of modules over commutative rings and their homological properties. More specific topics include Noetherian rings, primary decomposition, completions, graded rings and dimension theory with applications to algebraic geometry. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 621.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 732:** Topology II: Set-Theoretic Topology. 3 credits.
Topics include review of basic set theory (including cardinal numbers products of sets, the Axiom of Choice), definition of topological spaces, bases for topological spaces, forming new topological spaces by taking subspace, quotients, and products, separation properties (Hausdorff, regular, Tychonoff, and normal spaces) compactness, the Lindelof property, separability, connectedness, continuity and homeomorphism, manifolds. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 631 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 740:** Differential Topology. 3 credits.
Differential forms, manifolds, smooth maps, vector fields, the Euler characteristic, integration on manifolds, and de Rham cohomology. Notes: MATH 740 will be an elective course acceptable (but not required) for the PhD Degree in the Mathematical Sciences offered by the Department of Mathematical Sciences. Offered by Mathematics (p. 740). May not be repeated for credit.

**Recommended Prerequisite:** MATH 621 and MATH 631, or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MATH 762:** Complex Analysis II. 3 credits.
Harmonic functions, generalizations of the maximum principle, entire and meromorphic functions, analytic continuation, and the Riemann mapping theorem. Offered by Mathematics (p. 740). May not be repeated for credit.
Recommended Prerequisite: MATH 661.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 763: Functions of Several Complex Variables. 3 credits.
Covers the important results for analytic functions in several variables, including analyticity in several variables and the differences between the theory of one and the theory of several complex variables. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 661 and MATH 762 or an equivalent preparation in one complex variable.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 772: Wavelet Theory. 3 credits.
Study of the theory and computational aspects of wavelets and the wavelet transform. Emphasizes computational aspects of wavelets, defining the Fast Wavelet Transform in one and two dimensions. Developing the appropriate numerical algorithms. Includes developing the theory of wavelet bases on the real line, discussing multiresolution analysis, splines, time-frequency localization, and wavelet packets. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 315 or equivalent.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 776: Measure and Integration. 3 credits.
Lebesque measure and integration. Theory of Lp spaces with p between one and infinity on the real line. Theory of linear operators on Banach spaces, including the Hahn-Banach theorem, open mapping theorem, closed graph theorem and the uniform boundedness principle. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 675.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 781: Advanced Methods in Applied Mathematics. 3 credits.
Bifurcation theory and perturbation methods for solutions in ordinary and partial differential equations. This course will develop and apply these mathematical tools in current scientific fields, such as biology, materials science, or financial mathematics. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 677 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 784: Nonlinear Functional Analysis. 3 credits.
Techniques in nonlinear functional analysis with applications. Contraction mapping principle, Frechet and higher derivatives, the implicit function theorem, Lyapunov-Schmidt method, and bifurcation theory. Finite and infinite dimensional degree theory with applications in partial differential equations. Notes: Different backgrounds may be appropriate, but generally, a student is expected to be an upper level graduate student who has already taken Linear Analysis. Since the applications given in the course are for differential equations, some familiarity with differential equations is extremely useful. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 675 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 790: Classical Potential Theory. 3 credits.
Potential theory of Laplace's equation in Euclidean space. Harmonic functions, superharmonic functions, potentials, polar sets and capacity, the Dirichlet problem, the Martin boundary, boundary behavior of superharmonic functions using real variable techniques, and minimal fine limit techniques. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: MATH 675 and MATH 776.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
MATH 795: Graduate Seminar. 1 credit.
Mandatory for all PhD students. Weekly seminar graded on presentations and attendance. Faculty presentations on potential thesis topics and presentations by students. Offered by Mathematics (p. 740). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Enrolled in the PhD program in Mathematics.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MATH 799: MS Thesis. 1-6 credits.
Original or compilatory work evaluated by committee of three faculty members. Offered by Mathematics (p. 740). May be repeated within the degree.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

MATH 800: Studies for the Doctor of Philosophy in Education. 1-6 credits.
Program of studies designed by student’s discipline director and approved by student’s doctoral committee, which brings the student to participate in current research of discipline director and results in paper reporting the original contributions of student. Enrollment may be repeated. Offered by Mathematics (p. 740). May not be repeated for credit.

Recommended Prerequisite: Admission to the Ph.D. in Education program to study in mathematical sciences.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Special scale. (p. 84)

900 Level Courses

MATH 998: Doctoral Dissertation Proposal. 1-9 credits.
Work on research proposal that forms basis for doctoral dissertation. May be repeated for credit. No more than 24 credit hours of 998 and 999 may be applied to doctoral degree requirements. Offered by Mathematics (p. 740). May be repeated within the degree.

Recommended Prerequisite: Successful completion of qualifying exam.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Dissertation
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

MATH 999: Doctoral Dissertation. 1-12 credits.
Formal record of commitment to doctoral dissertation research under the direction of a faculty member. May be repeated for credit. No more than 24 credit hours of 998 and 999 may be applied to doctoral degree requirements. Offered by Mathematics (p. 740). May be repeated within the degree.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Schedule Type: Dissertation
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Mechanical Engineering (ME)

100 Level Courses

ME 151: Practicum in Engineering. 2 credits.
This course provides students with experiences in algorithmic thinking, visualization and communications. An essential component of this course is preparation of students for the National Academy of Engineering Grand Challenge Scholars Program. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ME 211: Statics. 3 credits.
An initial course in applied vector mechanics with emphasis on static equilibrium. Topics include forces, moments, couples, equivalent force-couple systems, centroids, distributed forces, and Coulomb friction. The application of the free body diagram in the analysis of static equilibrium of frames, machines and trusses is stressed. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: PHYS 160C and 161C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ME 212: Solid Mechanics. 3 credits.
A first course in mechanics of deformable bodies with emphasis on the engineering approach to the responses of these bodies to various types of loadings. Topics include stress-strain relationships, stress-strain analysis, stress and strain transformation (Mohr’s circle), load-deflection, bending, torsion, buckling, and thermal effects. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.
300 Level Courses

ME 311: Mechanical Experimentation I. 1 credit.
Experimental measurements in solid mechanics and materials science. Involves technical report writing. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

Recommended Corequisite: ME 313.
Registration Restrictions:
Required Prerequisites: ME 211\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ME 321: Mechanical Experimentation II. 1 credit.

Recommended Corequisite: ME 323.
Registration Restrictions:
Required Prerequisite: ME 322\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

ME 322: Fluid Mechanics. 3 credits.
An introductory course in fluid dynamics stressing both the integral and differential forms of the conservation laws of fluid flow. Engineering applications are made to hydrostatics and to ideal and real fluid flows. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: ME 221\(^C\) and 231\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 323: Heat Transfer.** 3 credits.
Study of thermal radiation, steady and transient conduction, laminar and turbulent convection, internal and external flow, boundary layers and empirical correlations. Applications address fins, nuclear reactor cooling, heat exchangers and interactive computing. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ME 322\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 331: Mechatronics.** 3 credits.
Study of electromechanical systems, utilizing the fundamentals of circuit theory to design, build, and control mechanical devices. Topics include electrical devices, sensors, microcontrollers, data acquisition, instrumentation and interfaces. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ECE 330\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major in Mechanical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 332: Analytical Methods in Engineering.** 3 credits.
Survey of advanced mathematics topics needed in the study of engineering. Topics include vector differential and integral calculus, matrix analysis, partial differential equations, complex variables, numerical methods, data analysis using statistics and probability theory. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** (MATH 214\(^C\)).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 341: Design of Mechanical Elements.** 3 credits.
Fundamentals of mechanical design. Introduction to the fundamentals of static and fatigue failure theories, design of basic machine elements such as fasteners, bearings, gearing and shafts. Builds on the fundamentals of design introduced in earlier courses by introducing the concepts of customer requirements, specification development, reverse engineering, functional decomposition, and design for manufacturing. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ME 212\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 342: Design of Thermal Systems.** 3 credits.
A study of equipment which operates on principles of thermodynamics and fluid mechanics is used to reinforce analyses and design of gas

and vapor power cycles, refrigeration and air conditioning, propulsion systems, combustion, energy conversion and compressible flow. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ME 221\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 351: Entrepreneurship in Engineering.** 3 credits.
Introduces students to the concept of entrepreneurship and how to translate technical skill sets to commercial success. Topics include creating a business plan, pitching ideas, risk mitigation, and selecting investment alternatives. Emerging technology related to Mechanical Engineering will be analyzed in this context. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Recommended Prerequisite:** Completion of at least 15 credits hours in major courses.

**Registration Restrictions:**
Enrollment limited to students with a class of Junior, Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 352: Engineering Economy.** 3 credits.
Principles of financial, engineering economic analysis of equipment and systems. Topics include system planning and design, cost estimating, investment alternatives, project and systems cash flows, and financial representations. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.
**400 Level Courses**

**ME 414: Fatigue Analysis.** 3 credits.
This course is an introduction to some of the main concepts of deformation processes leading to fracture; linear elastic fracture mechanics and fatigue crack propagation. Fatigue and fracture of a wide variety of materials including metals, composites, and biomaterials will be covered. Particular attention will be given to fatigue analysis of metals and composites used in aerospace structures, natural biomaterials such as bone and additively manufactured metals (metal 3D printing) and laminated materials. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ME 313C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 415: Composite Materials.** 3 credits.
This course will develop an understanding of the structural mechanics of composite materials and applications in aerospace, civil, and mechanical engineering. Students will identify fundamental relationships for predicting the mechanical response of multi layered materials and structures and micromechanical and macromechanical relationships for lamina and laminated materials. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisite:** ME 313C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 431: Systems Dynamics.** 3 credits.
A first course which deals with the mathematical modeling of dynamic systems and response analysis of these systems. Topics include state variable and transfer functions, mathematical analysis of systems response, and the use of computational tools for modeling, design, and simulation. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (ME 231C) and (PHYS 260C or 261C).
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 432: Control Engineering.** 4 credits.
Introduces fundamentals of feedback and modern control theory. Topics include analysis of mechanical and thermal systems by root locus and frequency response techniques. Use of sensors and transducers in control systems, data acquisition and analysis. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** ME 351C and (ECE 285C or 330C).
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 433: Mechanical Design I.** 3 credits.
The first course in a two-semester capstone design sequence. Topics include the engineering design process, project management, codes and standards, engineering ethics, and computer-aided design. Students form design teams, select a capstone design project and progress through the proposal and preliminary design stages of the project. The capstone design project continues in ME 444. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** ME 212C, 313C and 323C and (ME 341C or 342C) and ME 351C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 444: Mechanical Design II.** 3 credits.
The second of the two-semester capstone design course sequence. Students continue with concept selection, detail design, prototyping and evaluation of their major design projects. Formal presentations and reports are prepared to review and document the designs. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

**Mason Core:** Capstone (p. 142)

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
**Required Prerequisite:** (ME 443C).
C Requires minimum grade of C.

Enrollment is limited to students with a major in Mechanical Engineering.

Students with the terminated from VSE major attribute may not enroll.
Students with the terminated from VSE major attribute may \textbf{not} enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 445:** \textit{Finite Element Analysis.} 3 credits.
This course will develop an understanding of how finite element analysis (FEA) can be applied to mechanics and thermal fluids problems. Students will apply the mathematics of FEA to solve engineering problems and utilize software packages to aid in analysis. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

\textbf{Registration Restrictions:}
\textbf{Required Prerequisite:} ME 351\(^c\).
\(^c\) Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 446:** \textit{Energetics.} 3 credits.
This course will develop an understanding of the basic science of energetic systems. Basic properties of explosives, propellants, and pyrotechnics will be discussed; as well as basics systems and safety engineering using energetic materials. Application of energetic materials in different industries (i.e. automotive air bags as well as oil/gas industries) will be discussed. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

\textbf{Recommended Prerequisite:} ME 313

\textbf{Registration Restrictions:}
Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 453:** \textit{Developing the Societal Engineer.} 2 credits.
A course which highlights, through speakers, discussions and workshops, the professional responsibility of a being mechanical engineer. Additional topics that will be covered include ethical issues, current events and trends in the profession. Engineering case studies will be explored. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

\textbf{Registration Restrictions:}
\textbf{Required Prerequisite:} ME 443\(^*\).
\(^*\) May be taken concurrently.
\(^c\) Requires minimum grade of C.

Enrollment limited to students with a major in Mechanical Engineering.

Students with the terminated from VSE major attribute may \textbf{not} enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 454:** \textit{Project Mgmt for Engineers.} 3 credits.
Introduction to the fundamentals of project management. Students will understand the proposal process, apply decision-making and analysis tools to select a winning proposal, perform network scheduling techniques to identify the critical path for a project, and understand and apply the interpersonal skills to lead and manage highly effective project teams. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

\textbf{Registration Restrictions:}
Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may \textbf{not} enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 471:** \textit{Introduction to Astronautics.} 3 credits.
Astronautics is the study of space and its uses. This course will introduce the student to multiple aspects of space and space sciences, such as orbital mechanics, satellite subsystems, space systems engineering, launch, and re-entry. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

\textbf{Registration Restrictions:}
\textbf{Required Prerequisite:} ME 231\(^c\).
\(^c\) Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

Students with the terminated from VSE major attribute may \textbf{not} enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 472:** \textit{Spacecraft Subsystems.} 3 credits.
Spacecraft are complex systems of systems made up of many separate subsystems. In this course we shall study the various types of subsystems, learn their functions and major components, and understand the interaction between them to make a functional spacecraft. Offered by Mechanical Engineering (p. 1131). Limited to two attempts.

\textbf{Recommended Corequisite:} ME 471

\textbf{Registration Restrictions:}
\textbf{Required Prerequisite:} ME 231\(^c\).
\(^c\) Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.
Enrollment is limited to students with a major, minor, or concentration in Mechanical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 497:** Applied Engineering Abroad. 3 credits.
Introduces students to applications of engineering processes outside USA. The students will gain hands-on project management, critical thinking, intercultural and career skills by exploring engineering aspects such as auto assembly, airliner manufacturing, metropolitan infrastructure, and bridge designs. By visiting technology museums, students will learn to appreciate the rich history of the country’s technology and manufacturing. Offered by Mechanical Engineering (p. 1131). Limited to two attempts. Equivalent to CEIE 497, SYST 497.

**Mason Core:** Global Understanding (p. 142)

**Registration Restrictions:**
Enrollment limited to students with a class of Senior Plus or Senior.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 498:** Independent Study in Mechanical Engineering. 0-4 credits.
Directed self-study of topics of special interest. Offered by Mechanical Engineering (p. 1131). May be repeated within the term for a maximum 6 credits.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**ME 499:** Special Topics in Mechanical Engineering. 0-4 credits.
Topics of special interest to undergraduates. Notes: May be repeated for credit when topic is different. Offered by Mechanical Engineering (p. 1131). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment limited to students with a major, minor, or concentration in Mechanical Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**ME 521:** Energy Transfer. 3 credits.
Study of thermal fluid sciences related to energy systems. Provides foundations in thermodynamics, mass transfer, fluid mechanics, and heat transfer in steady systems. Covers modelling and analysis of engineering devices such as pumps, heat exchangers, turbines, and airfoils which constitute energy systems. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ME 531:** Energy Transmission. 3 credits.
Introduces analysis of local and national electrical grids used for power transmission and develops understanding of economic constraints on energy systems. Students will model energy transmission systems with dynamic loads ensuring energy security and optimal performance. Advanced topics such as forecasting for renewable energy integration, smart grid implementation, and utilization of emerging energy storage technology are covered. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ME 541:** Power Generation. 3 credits.
Study of traditional and advanced power generation technology. Builds upon conservation principles of mass, energy, and momentum to analyze, model and optimize energy systems based on physical principles. Specific attention will be paid to site specific conditions for generation. Advanced cycles will be covered which utilize fossil fuel, renewable, and nuclear energy. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

**Recommended Prerequisite:** ME 521.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.
Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 542: Energy Utilization. 3 credits.
Covers energy utilization by end users. Technology and system integration are covered for applications such as combined heat power units and transportation. Students will use energy audit techniques to identify and minimize energy losses from the demand side. Investment, payback, and subsidies for purchasing energy system updates will be evaluated. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Recommended Prerequisite: ME 521.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses
ME 620: Mechanical Engineering Decision Making. 3 credits.
Fundamentals of decision making with applications to mechanical engineering product and systems design, system reliability, and system operation and maintenance; product/system evaluation and optimization; design and systems theory; and social choice theory. This course takes the view that engineers are decision makers and presents the fundamentals of good decision making in the context of mechanical engineering. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 621: Foundations of Fluid Mechanics. 3 credits.
Derivation of the fundamental equations of fluid mechanics, including the Navier-Stokes equations, conservation of mass, and the vorticity transport equations. Vector and Cartesian tensor notation are used throughout. Equations of motion are applied to incompressible viscous and inviscid flows. Some aspects of turbulence are discussed. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 698: Research Study in Selected Mechanical Engineering Topics. 3 credits.
This is a research based course that allows graduate students to work on a special research topic. Offered by Mechanical Engineering (p. 1131). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Graduate Student Standing and Permission of the Instructor
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 699: Advanced Special Topics in Mechanical Engineering. 3 credits.
Advanced topics in mechanical engineering will be taught in this course. Offered by Mechanical Engineering (p. 1131). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Permission of the Instructor
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses
ME 714: Fracture Mechanics. 3 credits.
Investigation of linear elastic and elastic-plastic fracture mechanics. Topics include: theory of elasticity and plasticity, energy and stress approach to fracture mechanics, methods to determine the stress intensity factor, fracture mechanics testing, fatigue crack growth. Develop a basic understanding of how crack-like defects impact performance in structures and learn how to select materials to ensure damage tolerance. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.
**Recommended Prerequisite:** Introductory graduate level course in advanced strength of materials or theory of elasticity, or consent of the instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ME 715: Impact Dynamics.** 3 credits.
Includes advanced dynamics of impact, impact biomechanics, as well as vehicle crashworthiness standards and accident data analysis. Students will learn about FMVSS and NCAP crash tests. FARS and NASS real world accident databases, and methods to analyze crash and accident data. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

**Recommended Prerequisite:** ME 231, ME 212 or equivalent courses.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ME 721: Advanced Fluid Mechanics.** 3 credits.
The course is intended to provide engineering students with the opportunity to apply theoretical ideas developed in ME 621 to specific problems in inviscid and viscous flows, including turbulence. We will be exclusively concerned with incompressible flows. Although this is not a CFD course, a full understanding of theoretical aspects of fluid mechanics is a prerequisite for understanding and using CFD simulations. Models used in CFD such as k-epsilon, Reynolds-averaged Navier-Stokes (RANS), Large-eddy (LES), and Direct (DNS) will be discussed. Specially designed projects are intended to enable students to apply what they have learned to different flow situations. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

**Recommended Prerequisite:** ME 621

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ME 722: Introduction to Turbulence.** 3 credits.
Introduces beginning graduate students to the theory of turbulence. The theory of homogeneous-isotropic turbulence is introduced, followed by a discussion of sheared and wall-bounded turbulence. Some aspects of coherent structures in turbulence will be introduced as well as models used in computing turbulence. Specially designed projects are intended to enable students to apply what they have learned to different flow situations. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

**Recommended Prerequisite:** ME 621

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ME 723: Compressible Flow.** 3 credits.
This course is intended to provide engineering students with the opportunity to study the fluid mechanics of a compressible gas. Topics of interest include one-dimensional gas flows, flow of gas in convergent-divergent ducts, choked flows, high speed flows, physical acoustics, and shock waves. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

**Recommended Prerequisite:** ME 621

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**ME 724: Viscoelastic Flow.** 3 credits.
Many flows in nature behave very differently than air or water. Such flows may possess elasticity, or may have complex viscosities. Examples include blood, corn starch solutions, and solutions of high molecular weight polymers. This course will introduce the students to the theoretical methods that are needed to model the behavior of such viscoelastic fluids. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

**Recommended Prerequisite:** ME 621

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
ME 728: Foundations of Heat Transfer. 3 credits.
This course provides an introduction to the mechanisms of heat transfer. The course first covers the fundamentals of conduction, natural and forced convection, radiation, and phase-change heat transfer. Modeling of thermal systems, such as thermosyphons or heat exchangers, will be emphasized. The semester concludes with important and emerging application areas, including heat transfer in biological systems, sustainable power generation, and nanoscale heat transfer. Grades are determined by performance on homework, journal article review, final project, and take-home midterm and final examinations. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 732: Advanced Thermodynamics. 3 credits.
An advanced thermodynamics course for graduate students in engineering, incorporating both classical and statistical thermodynamics. Explores the origins of thermodynamic parameters and equations such as equations of state, heat capacities, and Maxwell Relations. Students develop the ability to apply these principles to challenges in modern engineering research in fields such as molecular simulation, materials, biotechnology, and mechanics. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 740: Introduction to Continuum Mechanics. 3 credits.
This course covers tensor analysis, state of stress, material and spatial descriptions of motion of a continuous medium, kinematics of deformation, general principles of solid mechanics, fluid mechanics and thermomechanics and balance principles: mass, momentum, and energy. Constitutive equations of large-deformation elasticity, and an introduction to inelasticity are also covered. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 741: Theory of Elasticity. 3 credits.
This course is intended to introduce graduate students to the field of linear elasticity. The governing equations of linear elasticity are developed before solving the problems of plane elasticity. The course also covers boundary value problems and the Airy stress function method associated with plane elasticity. Specialized topics may include: three-dimensional problems, energy and numerical methods. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 745: Mechanics and Properties of Materials. 3 credits.
This course is intended to introduce graduate students to the field of solid mechanics. The theories of elastic stress and strain are covered before moving on to inelastic behavior. Torsion and bending of solid and thin-walled bars are covered. Specialized topics include: buckling, fatigue and fracture mechanics. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 750: Nanomaterials Enabled Renewable Energy. 3 credits.
This course is intended to introduce beginning graduate students to the advanced nanomaterials, as well as their applications in renewable energy, i.e. photovoltaics and energy storage devices. Students will investigate how nano-materials can be used to harness renewable energy. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 751: Advanced Materials for Water Treatment. 3 credits.
This course is intended to introduce graduate students to the specific advanced materials which play an important role in the water treatment. In particular, the course will focus on water desalination and water purification. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 753: Tribology. 3 credits.
Tribology is the study and application of the friction, lubrication and wear principles in engineering and design. This course covers the contact of surfaces, mechanics of friction, surface failures/wear, boundary lubrication, fluid properties, thin/thick film (elastohydrodynamic/hydrodynamic) lubrication, and an introduction to emerging tribology (micro/nanotribology and biotribology). Tribology is an interdisciplinary area, and most importantly still has many unknowns. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 754: Introduction to Nano-Materials. 3 credits.
Introduction to the properties of nanomaterials, nanotechnology and their applications in energy, environmental, biology, and medicine. General discussion of nanotechnology, from multidisciplinary fundamental research to consumer products, suitable for all levels and specializations. This course provides an opportunity for students to learn the superior properties of nanomaterials, the evolving nanotechnology which lies at the interfaces of chemistry, physics and biology, and their broader impact nowadays. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 755: Optofluidics. 3 credits.
Optofluidics is an emerging field which seeks to understand fluids and optics at micro and nanoscale. This course provides an overview of the fundamental physics of optics and fluid mechanics (e.g. the Maxwell equations and the Navier-Stokes equations) and discusses how they interact at small scales to create many new applications. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 762: Biosensors. 3 credits.
The objective of this course is to introduce the fundamentals and applications of biosensors including concepts of biosensors, physics and mechanisms of sensing signal transduction, device fabrications/engineering principles, system integrations, chemistry and materials science of nanomaterials, biomolecules associated with detection strategies, and various applications. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Recommended Prerequisite: Completion of all coursework for the PhD in Mechanical Engineering, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ME 990: Dissertation Topic Presentation. 1 credit.
Students put together a professional presentation of a research proposal and present it for critique to fellow students and interested faculty. Notes: May be repeated with change of research topic, but credit toward doctoral degree is given once. Offered by Mechanical Engineering (p. 1131). May not be repeated for credit.

Recommended Prerequisite: Completion of all coursework for the PhD in Mechanical Engineering, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

ME 998: Doctoral Dissertation Proposal. 1-12 credits.
Work on research proposal that forms basis for doctoral dissertation. Notes: No more than 24 credits of ME 998 and 999 may be applied to doctoral degree requirements. Offered by Mechanical Engineering (p. 1131). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Schedule Type: Dissertation

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)
Medical Laboratory Science (MLAB)

200 Level Courses
MLAB 200: Introduction to Medical Laboratory Science. 1 credit.
Introduction to the profession of Medical Laboratory Science. Offered by Biology. (p. 641). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses
MLAB 300: Science Writing. 2 credits.
Intensive practice in biological science writing. Science Writing will fulfill the university’s writing intensive requirement as well as prepare Medical Laboratory Science students for the types of writing that they will encounter in the industry including, but not limited to: writing, resumes, grants, cover letters, etc. A transfer student who has previously taken an equivalent course to BIOL 308 that did not meet the writing intensive requirements in the major may pair this with the transferred BIOL 308 to L308 and meet the writing intensive experience in the Biology major. Offered by Biology. (p. 641). Limited to three attempts.

Specialized Designation: Writing Intensive in Major
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses
MLAB 401: Orientation to the Problems and Practices of the Clinical Laboratory. 1-2 credits.
Orientation to clinical lab; specimen collection and record keeping; management principles and problems; educational theories as they apply to the teaching of clinical laboratory procedures; and quality control principles. Notes: Not offered on campus. Offered by Biology. (p. 641). May be repeated within the term.

Recommended Prerequisite: Completion of requirements for BS with major in medical technology except for 30 credits of professional study, and admission to school of medical technology approved by National Accrediting Agency for Clinical Laboratories.

MLAB 402: Clinical Hematology and Coagulation. 2-3 credits.
Morphology of blood cells in health and disease; theories of hemopoiesis and coagulation; techniques for measurement of hematologic parameters; and hematologic pathologies and their lab evaluation. Notes: Not offered on campus. Offered by Biology. (p. 641). May be repeated within the term.

Recommended Prerequisite: Completion of requirements for BS with major in medical technology except for 30 credits of professional study, and admission to school of medical technology approved by National Accrediting Agency for Clinical Laboratories.

MLAB 403: Clinical Microbiology. 1-8 credits.
Clinical lab procedures involving antigen-antibody reactions, and theoretical bases of such procedures. Includes both diagnostic and blood bank techniques. Notes: Not offered on campus. Offered by Biology. (p. 641). May be repeated within the term.

Recommended Prerequisite: Completion of requirements for BS with major in medical technology except for 30 credits of professional study, and admission to school of medical technology approved by National Accrediting Agency for Clinical Laboratories.

MLAB 404: Serology and Immunohematology. 1-7 credits.
Clinical lab procedures involving antigen-antibody reactions, and theoretical bases of such procedures. Includes both diagnostic and blood bank techniques. Notes: Not offered on campus. Offered by Biology. (p. 641). May be repeated within the term.

Recommended Prerequisite: Completion of requirements for BS with major in medical technology except for 30 credits of professional study, and admission to school of medical technology approved by National Accrediting Agency for Clinical Laboratories.

MLAB 405: Clinical Microbiology. 1-8 credits.
Biology and pathology of bacteria, rickettsia, fungi, parasites, and viruses of clinical importance and their culture and identification. Notes: Not offered on campus. Offered by Biology. (p. 641). May be repeated within the term.

Recommended Prerequisite: Completion of requirements for BS with major in medical technology except for 30 credits of professional study, and admission to school of medical technology approved by National Accrediting Agency for Clinical Laboratories.

ME 999: Doctoral Dissertation. 1-12 credits.
Admission to Doctoral candidacy. Students must submit the Doctoral proposal and have it approved prior to registering for this course. Students may not take ME 998 and 999 at the same time. NOTE: Students must contact the department to receive approval and CRN to register. Offered by Mechanical Engineering (p. 1131). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Dissertation
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)
MLAB 406: Clinical Chemistry. 1-10 credits.
Chemical reactions and procedures used in clinical determinations on blood, urine, and cerebral spinal fluid. Includes manual, automated methods of chemical analyses. Notes: Not offered on campus. Offered by Biology (p. 641). May be repeated within the term.

Recommended Prerequisite: Completion of requirements for BS with major in medical technology except for 30 credits of professional study, and admission to school of medical technology approved by National Accrediting Agency for Clinical Laboratories.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLAB 407: Clinical Molecular Biology. 1-15 credits.
Course presents advanced methods in nucleic acid testing to human medico-legal, forensic, and pathology applications. Topics include but are not limited to: Polymorphisms, Paternity Testing, Single Nucleotide Polymorphisms, Bone Marrow Engraftment, Mitochondrial DNA Polymorphisms and Disorders, Chromosomal Abnormalities, Single Gene Disorders, Lysosomal Storage Disorders, Cystic Fibrosis, and Quality Assurance in the Molecular Biology laboratory. Offered by Biology (p. 641). May be repeated within the degree.

Recommended Prerequisite: Complete of requirements for BS with a major in Medical Laboratory Science except for the 30 credits of professional study.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLAB 408: Clinical Histology. 1-15 credits.
Introduction to the field of Histotechnology including lectures on tissue fixation, processing and embedding, microtomy, and staining. Offered by Biology (p. 641). May be repeated within the term.

Recommended Prerequisite: completion of requirements for BS with major in Medical Laboratory Science except for the 30 credits of professional study.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLAB 409: Clinical Histology Practicum. 1-15 credits.
Hands-on rotations in histologic fixations, tissue processing, slide preparation and staining. Offered by Biology (p. 641). May be repeated within the term.

Recommended Prerequisite: Completion of requirements for BS with major in Medical Laboratory Science except for the 30 credits of professional study.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLAB 410: Medical Virology. 1-2 credits.
This course is a survey of the characteristics, pathogenicity, and laboratory diagnosis of important human viruses. Topics include viral taxonomy and classical virology. Special emphasis is placed on the epidemiology and the laboratory's role in influenza pandemics. Offered by Biology (p. 641). May be repeated within the degree for a maximum 10 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLAB 411: Board Exam Preparation. 1-4 credits.
This course is a structured review and practice in preparation for the American Society for Clinical Pathology Technologist in Microbiology Board of Certification Exam. Practice tests and questions from a variety of published and authoritative sources are used to reinforce the content of the Technologist in Microbiology program. Offered by Biology (p. 641). May be repeated within the degree for a maximum 10 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLAB 412: Medical Mycology. 1-2 credits.
This course is a comprehensive presentation of medically important fungi. Emphasis is placed on clinical presentation and laboratory identification of pathogenic species and opportunistic pathogens. Topics include general mycology methods, yeasts, susceptibility testing, molds (Hyaline, Mucor, Dematiaceous), Dermatophytes, Systemic infections, and Pneumocystis. Offered by Biology (p. 641). May be repeated within the degree for a maximum 10 credits.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLAB 413: Medical Parasitology. 1-4 credits.
This course is a comprehensive presentation of human parasites. Emphasis is placed on clinical presentation and laboratory identification. Topics include Flagellates, Ciliates, Coccidians, Malaria and Babesia, Other Blood Born and Tissue Born parasites, Nematodes, Cestodes, Trematodes, and Arthropods. Offered by Biology (p. 641). May be repeated within the degree for a maximum 10 credits.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLAB 414: Molecular Detection of Infectious Disease. 1-4 credits.
This course examines the advances in using molecular methods to detect human infectious disease. Careful attention is given to the comparison of molecular technologies with traditional microbiology methods. Topics include molecular methods and applications, including PCR, sequencing, TMA, and PEGE; specimens of choice, sample preparation, Quality Control, primer selection; Molecular methods in selecting antimicrobial agents; molecular epidemiology, and target organisms: fungi, bacteria, parasites, and viruses. Offered by Biology (p. 641). May be repeated within the degree for a maximum 10 credits.
MEIS 500: Critical Issues and Debates in Middle East and Islamic Studies. 3 credits.
Introduces the interdisciplinary study of the Middle East and the Islamic world through an examination of recent seminal works and debates in the field representing the disciplinary perspectives of history, religious studies, political science, and sociology. Offered by Middle East/Islamic Studies. May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Middle East Islamic Studies.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MEIS 599: Issues in Middle East and Islamic Studies. 3 credits.
In-depth study of current issues and debates in Middle East and Islamic studies in theoretical and historical context. Offered by Middle East/Islamic Studies. May be repeated within the term for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

MEIS 794: Graduate Internship in Middle East and Islamic Studies. 3 credits.
Internship credit for completion of Middle East and/or Islamic studies related work at an approved government, nonprofit, or private institution. Offered by Middle East/Islamic Studies. May not be repeated for credit.

Recommended Prerequisite: MEIS 500, HIST 575, RELI 644.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MEIS 796: Directed Readings in Middle East and Islamic Studies. 3 credits.
Directed readings in the field of Middle East and Islamic Studies. Offered by Middle East/Islamic Studies. May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: MEIS 500, RELI 644, HIST 575.

Registration Restrictions:
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**MEIS 798: Research Project in Middle East and Islamic Studies.** 3 credits.
Research project related to Middle East and Islamic studies taken under supervision of faculty adviser. Offered by Middle East/Islamic Studies. May not be repeated for credit.

**Recommended Prerequisite:** Completion of 21 credit hours toward MA in Middle East and Islamic Studies degree; satisfactory completion of a research methods course approved as a core course for the MA MEIS.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MEIS 799: Thesis Research and Writing in Middle East and Islamic Studies.**
1-6 credits.
Original research and thesis writing for students in the Middle East and Islamic Studies MA program. Offered by Middle East/Islamic Studies. May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Completion of MEIS 500, HIST 535, GOVT 731, GOVT 733, RELI 644; and 27 credit hours toward MA in MEIS degree; permission of MEIS director.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Military Science (MLSC)**

**100 Level Courses**

**MLSC 100: Introduction to Army/ROTC.** 1 credit.
Introduces leadership values and ethics; responsibilities of officership; the organization, customs, and traditions of the U.S. Army; time management; and physical well-being. Includes a laboratory in applied leadership, common military tasks, and physical fitness. Offered by Military Science (p. 112). Limited to three attempts.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MLSC 102: Leadership Skills II.** 1 credit.
Introduces leadership principles, dimensions, styles, and assessment, among other varied topics. Includes a laboratory in applied leadership, common military tasks, and physical fitness. Offered by Military Science (p. 112). Limited to three attempts.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MLSC 200: Self/Team Development.** 1 credit.
Covers leadership skills, such as values and ethics. Also teaches how to influence, how to communicate, how and when to make decisions, how to engage in creative problem solving, and how to plan and organize. Includes a laboratory in applied leadership, common military tasks, and physical fitness. Offered by Military Science (p. 112). Limited to three attempts.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MLSC 202: Leadership Skills IV.** 1 credit.
Builds on the leadership skills developed in Leadership Skills III with additional emphasis on communication, team building, and team leadership. Includes a laboratory in applied leadership, common military tasks, and physical fitness. Offered by Military Science (p. 112). Limited to three attempts.

**Recommended Prerequisite:** MLSC 100 level completion/dual enrollment.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**MLSC 300: Applied Leadership I.** 1 credit.
Applied leadership with an introduction to the principles of physical fitness and healthy lifestyle; counseling as means of subordinate development; problem solving; operational analysis, development, and execution; and methods for preparing and presenting instruction. Students are given an introduction to the Leader Development Program that is used to evaluate their leadership performance and provide students with developmental feedback. Some weekend training required. Includes a laboratory in applied leadership, common military tasks, and physical fitness. Offered by Military Science (p. 112). Limited to three attempts.

**Recommended Prerequisite:** MLSC 100, 101, 200, or veterans status, or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MLSC 302: Applied Leadership II.** 1 credit.
Applied leadership covering the models of communications (verbal and nonverbal), technology to communicate, how to prepare and conduct formal briefings, an introduction to the Army branches, diversity and equal opportunity training, ethical decision making, & group cohesion and dysfunction. Some weekend training required. Includes a laboratory in applied leadership, common military tasks, and physical fitness. Notes: Enrollment in MLSC 300 level course is restricted to students who are contracted or are pre-approved by department/Army ROTC as pending contracting. Offered by Military Science (p. 112). Limited to three attempts.
Recommended Prerequisite: MLSC 100 & 200 level completion or military credit exemption.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses
MLSC 400: Leadership and Management. 3 credits.
Considered the "transition to lieutenant" phase in which managerial theories are applied to personnel, training, and logistics management situations. Students have command and staff responsibilities for the Mason cadet corps and receive hands-on experience operating as a management team. There are several briefing and writing requirements as well. Includes a laboratory in applied science, common military tasks, and physical fitness. Offered by Military Science (p. 112). Limited to three attempts.

Recommended Prerequisite: MLSC 300 and 301 or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLSC 402: Leadership and Ethics. 3 credits.
Continuing the "transition to lieutenant" phase of ROTC, examines ethics of military environment to include customs, ethical codes & decision making, constraints, and appeals to moral principles. American judicial system is also examined, with emphasis on the Uniform Code of Military Justice. Command and staff responsibilities are assigned to students for hands-on experience operating as a management team for Mason cadet corps. Includes a laboratory in applied leadership, common military tasks, and physical fitness. Offered by Military Science (p. 112). Limited to three attempts.

Recommended Prerequisite: MLSC 300 & 302.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MLSC 499: Senior Advanced Military Studies. 0 credits.
Offered by Military Science (p. 112). May be repeated within the degree.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Minor in Business (MBUS)

300 Level Courses
MBUS 300: Accounting in a Global Economy. 3 credits.
Focuses on using basic concepts of accounting and financial management to make investment, credit, and operating decisions for an organization. Emphasizes financial reports to aid planning and control of organizational activities. Notes: May not be taken for credit by School of Business majors. Students who have received credit for both ACCT 203 and FNAN 303 cannot also receive credit for MSOM 300 or MBUS 300. Offered by School of Business (p. 888). Limited to three attempts.

Recommended Prerequisite: Completion of 30 credits (sophomore standing).

Registration Restrictions:
Non-Degree level students may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MBUS 301: Managing People and Organizations in a Global Economy. 3 credits.
Introduces key issues in management, organizational behavior, and human resource management. Special attention to best practices used by effective managers. Notes: May not be taken for credit by School of Business majors. Students cannot receive credit for both MGMT 303 and MBUS 301. Offered by School of Business (p. 888). Limited to three attempts.

Recommended Prerequisite: Completion of 30 credits (sophomore standing).

Registration Restrictions:
Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MBUS 302: Managing Information in a Global Economy. 3 credits.
Provides overview of strategic role of information, need for information systems, organizing information, integration of information systems in management processes and decision making, and related discussions in electronic commerce. Students cannot receive credit for both MIS 303 and MBUS 302. Notes: May not be taken for credit by School of Business majors. Students cannot receive credit for both MIS 301 and MBUS 302. Offered by School of Business (p. 888). Limited to three attempts.

Recommended Prerequisite: Completion of 30 credits (sophomore standing).

Registration Restrictions:
Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MBUS 303: Marketing in a Global Economy. 3 credits.
Presents marketing principles, concepts, strategies, and analytical tools used by profit and nonprofit organizations to market ideas, products, and services to selected target groups. Emphasizes how to develop, promote, distribute, and price firm's offerings in dynamic economic, social, political, and global environment. Notes: May not be taken for credit by School of Business majors. Students cannot receive credit for both MKTG 303 and MBUS 303. Offered by School of Business (p. 888). Limited to three attempts.

Registration Restrictions:
Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.
MBUS 304: Entrepreneurship: Starting and Managing a New Enterprise. 3 credits.
Explores behaviors required to successfully launch a new business, tools to identify and evaluate opportunities, and the issues critical to a new firm. Issues include organizational structure, effective marketing strategy, operational logistics, legal issues, financial projections, financing options, and available support structures. Students cannot receive credit for both MKTG 303 and MBUS 304. Notes: May not be taken for credit by School of Business majors. Offered by School of Business (p. 888). Limited to three attempts.

Registration Restrictions:
Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Introduces project management and operations management concepts and tools including project planning, scheduling, monitoring, and control; process design, selection and improvement; supply chain management; inventory management; and quality assurance. Students cannot receive credit for both OM 303 and MBUS 306. Notes: May not be taken for credit by School of Business students. Students cannot receive credit for both OM 303 and MBUS 306. Offered by School of Business (p. 888). Limited to three attempts.

Registration Restrictions:
Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MBUS 308: Corporate Finance and Investments in a Global Economy. 3 credits.
Presents an introduction to corporate finance and investment topics within an international context and emphasis on time-value of money, interest rates, stock and bond valuation, and the risk/return relationship in financial markets. Offered by School of Business (p. 888). Limited to three attempts.

Registration Restrictions:
Students with a class of Freshman may not enroll.
Students cannot enroll who have a major in Accounting, Finance, Information Systems Ops Mgmt, Management or Marketing.
Students in the BU-BPRE-UNDE program may not enroll.
Non-Degree level students may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

MBUS 491: Special Topics: Business Minor. 3 credits.
Topics related to a minor in business will vary on the focus of the course and by discipline. Notes: May not be taken for credit by School of Business majors. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Students with a class of Freshman may not enroll.
Non-Degree level students may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Music (MUSI)

100 Level Courses

MUSI 100: Fundamentals of Music. 3 credits.
Study of musical notation, interval and triad construction, reading of treble and bass clefs, scale construction, rhythm, elementary sight singing and ear training, and application at keyboard. Notes: Cannot be applied toward degree in music. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 101: Introduction to Classical Music. 3 credits.
Introduces art-music tradition of West. Techniques for expanding listening skills developed through study of musical elements, styles, and selected masterworks of musical literature. Notes: Music majors may take only as free elective. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 102: Popular Music in America. 3 credits.
Investigates popular music styles and development in the United States with particular emphasis on the past 50 years. Lectures, recordings, and video enhance critical listening skills and examine stylistic and social contexts of popular music. Notes: Music majors may take only as free elective. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 103: Musics of the World. 3 credits.
Study and comparison of musical structure and expression in several world cultures, with special attention to social context and function. Studies selected Asian, Middle Eastern, African, and American (Latin, Native, African) cultures. Notes: For non-music majors only. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 106: Fundamentals of Rock, Blues, and Jazz. 3 credits.
Fundamentals of Blues, Rock, and Jazz is designed for students without formal training in music theory. The course focuses on Afro-centric concepts in twentieth-century American musical culture including improvisation, emphasis on rhythm and groove, and use of multiple and integrated tonalities, such as major and minor in the blues. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Mason Core: Arts (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 107: Jazz and Blues in America. 3 credits.
Historical, analytical, and aural survey of jazz from inception to present day. Looks at trends resulting from synthesis of jazz with other musical idioms. Notes: Music majors may take as free elective or part of jazz studies concentration. Offered by School of Music (p. 849). Limited to three attempts.

Mason Core: Arts (p. 142)

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 113: Aural Skills I. 1 credit.
Students taught to sing a line of music without accompaniment of instrument. Matching tones, major and minor scales, key signatures, intervals, rhythm, treble and bass clefs, and rhythmic and melodic dictation. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 113.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 114: Aural Skills II. 1-2 credits.
Continuation of MUSI 113. Alto and tenor clefs, modulation, various modes, and melodic and harmonic dictation. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 113.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 115: Introduction to Music Theory. 3 credits.
Music notation, rhythm and meter, scales, key signatures, intervals, chords, cadences, and figured bass. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: Student must be able to read music, be able to pass a fundamentals of music test (administered during first week of classes), and have some proficiency on a musical instrument or in voice.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 116: Theory II. 3 credits.
First- and second-inversion chords, modulation, nonharmonic tones, figured bass, seventh chords. Analysis of Bach chorales; composition of four-part chorales in 18th-century style. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 115 or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 171: Keyboard Skills I. 1 credit.
Study of piano keyboard as it relates to various clefs in music. Emphasis on solution of basic stylistic and technical problems. Offered by School of Music (p. 849). Limited to three attempts.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 172: Keyboard Skills II. 1 credit.
Study of piano keyboard as it relates to intermediate song and combined in various music forms. Notes: Nonmusic majors must have permission of instructor. Offered by School of Music (p. 849). Limited to three attempts.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

200 Level Courses
MUSI 213: Aural Skills III. 2 credits.
Continuation of Music 114. Emphasizes modulation, chromatic and nontonal melodies, various modes, melodic and harmonic dictation, c clefs, and improvisation. Offered by School of Music (p. 849). Limited to three attempts.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 214: Aural Skills IV. 2 credits.
Continuation on MUSI 213 with emphasis on chromatic and nontonal harmonies. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 213, or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 215: Theory for Pop and Jazz Music. 3 credits.
A study of diatonic and chromatic harmony, rhythm, and form in the context of jazz, blues, and popular music in the US and UK in the 20th and 21st centuries. Analysis and composition in each of these three styles. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 115 or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 216: Theory for 20th- and 21st-Century Music. 3 credits.

Recommended Prerequisite: MUSI 115 or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 217: Theory for 18th-Century Music. 3 credits.
Covers diatonic harmony, modulation, non-harmonic tones, and small forms in the style of 18th-century Western concert music. Analysis and composition of 18th-century music. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 115, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 221: Applied Music I. 1 credit.
Applied music studies 1. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: Audition or portfolio.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 222: Applied Music in Keyboard. 1 credit.
Applied music studies in Keyboard. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: Audition.
Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 223: Applied Music in Voice. 1 credit.
Applied music studies in Voice. Offered by School of Music (p. 849). May
be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: Audition.
Recommended Corequisite: MUSI 381, 384, or 385.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 224: Applied Music in Woodwind. 1 credit.
Applied music studies in Woodwind. Offered by School of Music (p. 849).
May be repeated within the degree for a maximum 8 credits. Equivalent to
MUSI 221.

Recommended Prerequisite: Audition.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 225: Applied Music in Brass. 1 credit.
Applied music studies in Brass. Offered by School of Music (p. 849). May
be repeated within the degree for a maximum 8 credits. Equivalent to
MUSI 221.

Recommended Prerequisite: Audition.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 226: Applied Music in String. 1 credit.
Applied music studies in String. Offered by School of Music (p. 849). May
be repeated within the degree for a maximum 8 credits. Equivalent to
MUSI 221.

Recommended Prerequisite: Audition.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 227: Applied Music in Percussion. 1 credit.
Applied music studies in Percussion. Offered by School of Music (p. 849).
May be repeated within the degree for a maximum 8 credits. Equivalent to
MUSI 221.

Recommended Prerequisite: Audition.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 228: Applied Music in Composition. 1 credit.
Applied music studies in Composition. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 8 credits. Equivalent to MUSI 221.

Recommended Prerequisite: Portfolio of recent compositions.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 229: Non-Major Applied Music I. 1 credit.
Applied music studies I. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: Audition or portfolio.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 241: Applied Music II. 2 credits.
Applied music studies 2. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

Recommended Prerequisite: Audition or portfolio.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 242: Applied Music in Keyboard. 2 credits.
Applied music studies in Keyboard. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

Recommended Prerequisite: Audition.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Applied music studies in Voice. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

Recommended Prerequisite: Audition.
Recommended Corequisite: MUSI 381, 384, or 385.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 244: Applied Music in Woodwind. 2 credits.
Applied music studies in Woodwind. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

Recommended Prerequisite: Audition.
MUSI 245: Applied Music in Brass. 2 credits.
Applied music studies in Brass. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

**Recommended Prerequisite:** Audition.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 246: Applied Music in String. 2 credits.
Applied music studies in String. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

**Recommended Prerequisite:** Audition.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 247: Applied Music in Percussion. 2 credits.
Applied music studies in Percussion. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

**Recommended Prerequisite:** Audition.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 248: Applied Music in Composition. 2 credits.
Applied music studies in Composition. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

**Recommended Prerequisite:** Portfolio or recent compositions.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 249: Non-Major Applied Music II. 2 credits.
Applied music studies II. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 16 credits.

**Recommended Prerequisite:** Audition or portfolio.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 251: Musical/Oral Communication. 3 credits.
Introduces theories, processes, and practices to achieve effective oral communication; connects those principles with expressive musical performance. Explores parallels between grammar, logic, and rhetoric and musical structure, design, and performance. Critically analyzes time, tonality, and texture, applies these concepts in pedagogical contexts related to effective performance, practice habits, communication styles, and identifying/preventing performance-related repetitive overuse injuries. Notes: Requires observing professionals in the field. Offered by School of Music (p. 849). Limited to three attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Music.

Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 252: Popular Music Arranging. 3 credits.
This course explores popular music styles and genres. Using this information to analyze popular music and arrange the music for various ensembles. Offered by School of Music (p. 849). Limited to three attempts.

**Specialized Designation:** Discovery of Scholarship.

**Recommended Prerequisite:** MUSI 215.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 254: Music and Technology. 3 credits.
Study of technology related to music, including audio synthesis and computer-based hardware and software. Offered by School of Music (p. 849). Limited to three attempts. Equivalent to MUSI 315.

**Specialized Designation:** Discovery of Scholarship.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 259: Music in Computer Technology. 3 credits.
Overview of ways computer is used in music. Topics include principles of musical instrument digital interface (MIDI); various kinds of synthesis; acoustics and sound processing; and musical composition using the computer. Explores music resources of internet and surveys current multimedia applications in music history, theory, ear training, improvisation, and notation. Offered by School of Music (p. 849). Limited to three attempts. Equivalent to MUSI 415.

**Mason Core:** Info Tech (complete) (p. 142)

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 273: Keyboard Skills III. 1 credit.
Continuation of MUSI 172. Study of techniques of harmonization at the piano keyboard. Notes: Nonmusic majors must have permission of instructor. Offered by School of Music (p. 849). Limited to three attempts.
**Recommended Prerequisite:** MUSI 172.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 274:** Jazz/Commercial Piano. 1 credit.
Introduces students to the rudiments of Jazz and commercial piano playing. After a brief review of chord construction, students will learn voicings for both pop and Jazz piano styles, ways to navigate standard chord progressions, and, ultimately, to apply the material learned to lead sheets. Offered by School of Music (p. 849). Limited to three attempts. Equivalent to MUSI 221.

**Recommended Prerequisite:** MUSI 273 or permission of instructor

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 280:** Athletic and Ceremonial Ensemble. 0-1 credits.
Students gain an understanding of American popular and other musics developing personal expression via performance and creative design. Students also learn and develop leadership and management skills. An understanding of the vital role of community outreach and service is gained through first-hand experience. Offered by School of Music (p. 849). May be repeated within the term.

**Mason Core:** Arts (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 300:** Recital Attendance. 0 credits.
Students attend 10 student recitals to be selected from departmental and music education recitals, and junior, senior, and graduate recitals. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 8 credits.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**MUSI 301:** Music in Motion Pictures. 3 credits.
Intensive study and analysis of using music tracks in motion pictures to introduce the picture, set a scene, create moods, or for musical numbers. From the silent film scores of the 1920s to the present (including electronic music). Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** Completion of 30 credits. Music and non-music majors welcome.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 302:** American Musical Theater. 3 credits.
Intensive study of the musical elements in the American musical theater from its European and later African roots to its evolution between the wars into a native form, and its continual assimilation of external influences such as new forms of jazz and rock to the eclectic form of the present day. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** 30 credit hours or permission of the instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 303:** Topics in Ethnomusicology. 3 credits.
Advanced study of theory and method in ethnomusicology with specific thematic or geographic focus. Course emphasizes critical thinking, listening, and research in the study of music from around the world. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** MUSI 103, or MUSI 431, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 304:** Topics in Musicology. 3 credits.
Designed for students with no music theory background, the course explores the intersection of music and culture in relation to specific topics. Issues addressed may include race, class, gender, economic context, aesthetics, etc. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** 30 hours completed.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 311:** Jazz Studies. 3 credits.
Musicianship course integrating jazz improvisation, theory, composition, and arranging. Focuses on concepts unique to our time in style, form, and harmony. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 379 or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
MUSI 315: Music Technology. 3 credits.
Study of technology related to music, including audio synthesis and computer-based hardware and software. Notes: There is a course fee beyond tuition charges. Offered by School of Music (p. 849). Limited to three attempts. Equivalent to MUSI 254.

Recommended Prerequisite: MUSI 100 or MUSI 115

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 316: Topics in Music Technology. 3 credits.
Selected topics in music technology with an emphasis on musical creativity. Includes consideration of recent developments in areas such as electronic composition, the science of music, recording industry and practices, and music industry. Notes: There is a course fee beyond tuition charges. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits. Equivalent to MUSI 359.

Recommended Prerequisite: MUSI 315

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 317: Baroque and Classical Forms. 3 credits.
Involves the student in the study of the architecture of music. Investigates the structural properties of small forms and eventually the organizational principles of larger forms mainly from the Baroque and Classical periods through lecture and discussion, presentation, aural comprehension, writing, analysis, and performance. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 115 and MUSI 217

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 319: Class Composition and Arranging. 3 credits.
Students write original compositions for specified instruments, voices, or combinations. They then apply compositional principles to the creative arrangement of existing music of various styles. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 214, 216 or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 323: Music Education Recital. 0 credits.
Recital on major instrument given by student during junior or senior year. Notes: Recital must be at least 25 minutes long. All recitals by arrangement. Students must consult with director of applied music studies to register and schedule dates. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: A minimum of 8 credits in Applied music instruction in major instrument.

Recommended Corequisite: Concurrent enrollment in the appropriate 2-credit Applied music course.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

MUSI 324: Junior Recital. 1 credit.
Public recital by student during junior year. Notes: Junior recital must be at least 25 minutes long. All recitals by arrangement. Students must consult with director of applied music studies to register and schedule dates. Offered by School of Music (p. 849). Limited to three attempts.

Mason Core: Capstone (p. 142)

Recommended Corequisite: Concurrent enrollment in 2-credit Applied music course.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 325: Performance Seminar and Vocal Literature for Singers and Accompanists I. 2 credits.
Students assigned vocal literature in Italian, English, German, and French from Baroque to 21st century, and perform in a weekly master class format. Designed for vocal performance and piano and accompanying majors; develops and improves artistic and performance skills, repertoire preparation and execution, diction, interpretation, style, and overall stage presence. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 4 credits.

Recommended Prerequisite: Admission to the Music major program or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 326: Performance Seminar and Vocal Literature for Singers and Accompanists II - German and French. 2 credits.
Students assigned vocal literature in Italian, English, German, and French from Baroque to 21st century, and perform in a weekly master class format. Designed for vocal performance and piano and accompanying majors; develops and improves artistic and performance skills, repertoire preparation and execution, diction, interpretation, style, and overall stage presence. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 4 credits.
Recommended Prerequisite: Admission to the Music major program or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 331: Music History in Society I. 3 credits.
Historical survey of Western music from Greek times through the late Baroque era, with emphasis on specific musical genres and composers who developed them. Musical developments are related to other aspects of society. Instruction conducted by lectures, recordings, and video. Learning process enhanced by reading, listening, writing, and analytical assignments. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 215 or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 332: Music History in Society II. 3 credits.
Historical survey of Western music from the early Classical era through mid-19th century, with emphasis on specific musical genres and composers who developed them. Musical developments related to other aspects of society. Lectures, recordings, video. Learning process enhanced by reading, listening, writing, and analytical assignments. Offered by School of Music (p. 849). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

 Recommended Prerequisite: MUSI 216 and 331 or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 333: Music History in Society A. 3 credits.
Historical survey of Western music from the late Renaissance through the Romantic era, with emphasis on specific musical genres and composers who developed them. Musical developments are related to other aspects of society. Instruction conducted by lectures, recordings, and video. Learning process enhanced by reading, listening, writing, and analytical assignments. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 215, or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 341: Diction for Singers I: Italian Diction and English Diction. 2 credits.
Increases proficiency in singing in Italian and English by teaching International Phonetic Alphabet (IPA), and strengthens performance of Italian and English art songs and operatic repertoire. Focuses on intensified, systematic study of phonetics as it applies to singing in Italian and English. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: Admission to the Music major program or permission of instructor.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 342: Diction for Singers II: German Diction and French Diction. 2 credits.
Increases proficiency in singing in German and French by teaching International Phonetic Alphabet (IPA), and strengthens performance of German and French art songs and operatic repertoire. Focuses on intensified, systematic study of phonetics as it applies to singing in German and French. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: Restricted to MUSI majors and minors. Non majors need permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 351: Keyboard Pedagogy. 3 credits.
Investigates methods, theories, techniques, and materials to teach keyboard to children and adults in individual and group situations. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 214, 216, 273 and 8 credits in piano, harpsichord, organ or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 352: Vocal Pedagogy and Lab. 3 credits.
Instruction in teaching of voice through systematic study of vocal physiology and its implications for pedagogical methods. Includes theoretical and systematic study of processes, procedures, and practices to develop art of singing. Offers technical, physiological, theoretical, and practical principals of the singing art, with emphasis on the importance
of vocal health. Offered by School of Music (p. 849). Limited to three attempts. Equivalent to MUSI 552.

**Recommended Prerequisite:** 8 credits Applied Music in Voice, or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 353: Instrumental Pedagogy and Literature.** 3 credits.
Instruction in teaching instrumental music techniques for all levels through study of pedagogical methods, standard literature, and musical instruments produced by present-day manufacturers. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** Junior standing in instrumental private music instruction or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 354: Electronic Composition.** 3 credits.
This course explores the techniques used in recording music with current software and hardware to edit, modify, and market music. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 254, MUSI 354, and MUSI 355.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 355: Recording Techniques.** 3 credits.
Explores the techniques used in recording music with current software and hardware to edit, modify, and market music. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** Scholarly Inquiry.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 358: Music Programming.** 3 credits.
The purpose of the class is to learn basic programming skills and concepts and to apply them directly to musical concepts and ideas. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 254, MUSI 354, and MUSI 355.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 359: Topics in Music Technology.** 3 credits.
Selected topics in music technology with an emphasis on musical creativity. Includes consideration of recent developments in areas such as electronic composition, the science of music, recording industry and practices, and music industry. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits. Equivalent to MUSI 316.

**Recommended Prerequisite:** MUSI 354, MUSI 355.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 361: Class Strings.** 1 credit.
Study of playing and teaching string instruments with emphasis on violin and cello through beginning method book. Study of fingerings and bowing techniques to teach and play viola and bass at beginning levels. Survey of string playing techniques to conduct rehearsals at intermediate-, advanced-, and artist-level ensembles. Notes: Three hours per week studying violin, viola, cello, and bass; one hour per week in laboratory ensemble. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 2 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.

**MUSI 363: Class Woodwinds.** 1 credit.
Study of Techniques of playing and teaching Woodwind instruments, including flute, clarinet, saxophone, oboe, and bassoon. Survey of instructional materials, and mouthpiece and instrument selection. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 2 credits.

**Recommended Prerequisite:** Admission to the Music major program or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.
**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 364: Class Woodwinds: Oboe and Bassoon.** 1 credit.
Study of techniques of playing and teaching oboe and bassoon. Survey of instructional materials, instrument selection, and reed adjustment. Notes: Three hours per week studying oboe and bassoon; one hour per week in laboratory ensemble. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 2 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.

**Recommended Prerequisite:** Admission to the Music major program or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 365: Class Brass.** 1 credit.
Study of techniques of playing and teaching trumpet and French horn. Survey of instructional materials, and mouthpiece and instrument selection. Notes: Three hours per week studying trumpet and French horn; one hour per week in laboratory ensemble. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 2 credits.

**Recommended Prerequisite:** Admission to the Music major program or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 366: Class Percussion.** 1 credit.
Study of techniques of playing and teaching percussion instruments. Survey of instructional materials and instrument selection. Notes: Three hours per week studying percussion instruments; one hour per week in laboratory ensemble. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** Admission to the Music major program or permission of instructor. Students must register for studio and lab.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 367: Class Guitar.** 1 credit.
Study of techniques of playing and teaching guitar. Survey of instructional materials and instrument selection. Notes: Three hours per week studying guitar; one hour per week in laboratory ensemble. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** Admission to the Music major program or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 368: Class Voice.** 1 credit.
Study of the human voice in artistic singing. Emphasizes practical application of basic principles. Notes: Three hours per week studying voice; one hour per week in laboratory ensemble. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** Admission to the Music major program or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**MUSI 370: Laboratory Ensemble.** 0 credits.
This class an extension of the music education techniques and methods classes. Students will meet together once a week to perform on a secondary instrument or voice. In addition, this course provides student conductors with the opportunity to teach and/or rehearse a novice ensemble. A lab fee is assessed for this course. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 0 credits.

**Recommended Prerequisite:** Admission to music major program or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 371: Techniques of Accompanying I.** 1 credit.
Development of accompanying skills through collaboration with solo singers, instrumentalists, and small ensembles. Students perform for each other; observe lectures, demonstrations, and performances by professionals; and participate in master classes. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** Restricted to piano majors and minors, or to those with permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 372: Techniques of Accompanying II.** 1 credit.
Development of accompanying skills through collaboration with solo singers, instrumentalists, and small ensembles. Students perform for each other; observe lectures, demonstrations, and performances by professionals; and participate in master classes. Offered by School of Music (p. 849). Limited to three attempts.
**Recommended Prerequisite:** Audition on a keyboard instrument for admission to a music degree program, 4 credits in undergraduate Applied Music Instruction on a keyboard instrument, or permission of instructor.

**Registration Restrictions:** Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 373:** Advanced Accompanying and Musicianship Skills. 3 credits.
Advanced study and techniques for accompanying choirs, vocal soloists, and instrumentalists. Additional instruction in keyboard reduction of orchestral scores for concertos, continuo/figured bass reading, lead-sheet reading, transposition, improvisation, transcription, and “playing by ear.” Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 372 (concurrent enrollment is permitted) or permission of instructor.

**Registration Restrictions:** Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 379:** Jazz Improvisation. 1 credit.
Study of improvisation techniques and styles, with emphasis on common practice period of jazz. Application on the student’s major instrument or voice to develop creativity and personal expression. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 116 or permission of instructor.

**Registration Restrictions:** Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 380:** Wind Symphony. 1 credit.
Students develop an understanding of major artistic works, including a consideration of how theoretical and historical insights find expression via performance. Highly selective group of instrumentalists perform works from wind symphony repertoire. Notes: Public concerts required. Offered by School of Music (p. 849). May be repeated within the term for a maximum 12 credits.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** Audition.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 385:** Chamber Singers. 1 credit.
Students develop an understanding of major artistic works, including a consideration of how theoretical and historical insights find expression via performance. Students explore their levels of artistic development through discovery, interpretation, and performance of choral music for vocal chamber music ensembles from multiple historical periods. Students bring to Mason and surrounding community musical compositions not readily accessible in regular concert repertoire. Offered by School of Music (p. 849). May be repeated within the term for a maximum 12 credits.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** Audition.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
MUSI 387: Symphony Orchestra. 1 credit.
Students develop an understanding of major artistic works, including a consideration of how theoretical and historical insights find expression via performance. Performance of works from symphony orchestra repertoire. Notes: Public concerts required. Offered by School of Music (p. 849). May be repeated within the term for a maximum 12 credits.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Audition.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 388: Fundamental Techniques of Stagecraft for Opera and Music Theater. 2 credits.
Study of basic to intermediate stage movement techniques necessary to the performance of opera and music theater roles. Emphasis on acting, improvisation, theater production, musical theater, and operatic role study. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: Admission to the Music major program or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 389: Jazz Ensemble. 1 credit.
Students develop an understanding of major artistic works, including a consideration of how theoretical and historical insights find expression via jazz performance: section work within a large aggregation, combo work, and improvisation. Notes: Public concerts required. Offered by School of Music (p. 849). May be repeated within the term for a maximum 12 credits.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Audition.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 391: Conducting I. 2 credits.
Study of basic techniques of conducting a musical ensemble. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 214, 216, 273 or permission of instructor

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 393: Music Administration and Management. 2 credits.
Prepares students to address aspects of administration and management of music programs in public and private schools. Investigates principles and concepts of management styles and planning. Covers curriculum, budget, student recruitment and retention, external relations of the music unit, and legal issues for music educators. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 116 or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 394: Ethnomusicology Internship. 1-4 credits.
Option A) Professional internship with an organization dedicated to activities related to the field of ethnomusicology; Option B) Teaching internship in an undergraduate ethnomusicology course at Mason, supervised by the minor coordinator. Notes: All internships must be approved and all arrangements made prior to he beginning of the semester in which the internship is to take place. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: MUSI 103, or MUSI 431; Permission of the Ethnomusicology Minor Coordinator.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 395: Teaching Internship. 1-4 credits.
Internship with a professional individual or organization in teaching. Introduction to teaching or augmentation of teaching skills. Students develop individual contracts defining the learning and competencies to be gained from the experience. Notes: Maximum of 9 internship credits (MUSI 395, 495, 496) can be applied toward a degree. Offered by School of Music (p. 849). May be repeated within the term for a maximum 4 credits.

Recommended Prerequisite: MUSI 251.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 396: Conducting II. 2 credits.
Advanced conducting course emphasizing techniques for instrumental and choral conducting. Refining gestures, full score analysis and interpretation, rehearsal techniques, and changing meters. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 391 or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 397:** *Music Technology Internship.* 1-4 credits.
Internship with a professional individual or organization in music technology. Develops facility with applications of music technology in various professional contexts. Students develop individual contracts defining the learning and competencies to be gained from the experience. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 4 credits.

**Recommended Prerequisite:** MUSI 254 or permission of instructor

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**MUSI 415:** *Music in Computer Technology.* 3 credits.
Overview of ways computer is used in music. Topics include principles of musical instrument digital interface (MIDI); various kinds of synthesis; acoustics and sound processing; and musical composition using the computer. Explores music resources of Internet and surveys current multimedia applications in music history, theory, ear training, improvisation, and notation. Offered by School of Music (p. 849). Limited to three attempts. Equivalent to MUSI 259, MUSI 515.

**Recommended Prerequisite:** MUSI 319 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 419:** *Orchestration.* 3 credits.
Principles of combining and balancing instruments in orchestral and chamber contexts. Attention to orchestral terminology and general notation as well as timbre, range, clefs, transposition, special effects, and scoring procedures. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 214, 216 and 319, or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 421:** *Applied Music III.* 1 credit.
Applied music studies 3. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 8 credits.

**Recommended Prerequisite:** Audition or portfolio of recent compositions.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 424:** *Senior Recital.* 1 credit.
Public recital by student during senior year. Notes: Senior recital must be at least 50 minutes long. All recitals by arrangement. Students must consult with director of applied music studies to register and schedule dates. Offered by School of Music (p. 849). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Recommended Corequisite:** Concurrent enrollment in 2-credit Applied music course.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 431:** *Music History in Society III.* 3 credits.
Studies contributions to the world of music in selected cultures such as India, Indonesia, China, Japan, Africa, Middle East, and Americas. Emphasizes comparative musical characteristics as well as sociological function. Lectures, recordings, and video. Learning process enhanced by reading, listening, writing, and analytical assignments. Offered by School of Music (p. 849). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Recommended Prerequisite:** MUSI 216, 331, 332, or permission of instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 432:** *Music History in Society IV.* 3 credits.
Historical survey of Western music from late 19th century to present, with emphasis on specific musical genres and composers who developed them. Relates musical developments to other aspects of society, and considers interaction between world music. Lectures, recordings, and video. Learning process enhanced by reading, listening, writing, and analytical assignments. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 216, 331, 332, 431, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 438:** *Music History in Society B.* 3 credits.
Historical survey of Western vernacular and classical music from 1877 to 1945, with emphasis on musical genres, composers, and performers. Musical developments are related to other aspects of society. Instruction conducted by lectures, recordings, and video. Fulfills writing intensive
requirement in the BA in music with a concentration in Music Technology. Offered by School of Music (p. 849). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Recommended Prerequisite:** MUSI 338 or permission of instructor.

**Registration Restrictions:** Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 439:** *Music History in Society C.* 3 credits.
Historical survey of Western vernacular and classical music from 1945 to present, with emphasis on specific musical genres, composers, and performers. Musical developments are related to other aspects of society. Instruction conducted by lectures, recordings, and video. Learning process enhanced by reading, listening, writing, and analytical assignments. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 438, or permission of instructor.

**Registration Restrictions:** Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 441:** *Private Music Instruction III.* 2-3 credits.
Applied music studies 3. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 27 credits.

**Recommended Prerequisite:** Audition or portfolio of recent compositions.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 442:** *Applied Music in Keyboard.* 2-3 credits.
Applied music studies in Keyboard. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 27 credits.

**Recommended Prerequisite:** Audition.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 443:** *Applied Music in Voice.* 2-3 credits.
Applied music studies in Voice. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 27 credits.

**Recommended Prerequisite:** Audition.

**Recommended Corequisite:** MUSI 381, 384, or 385.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 444:** *Applied Music in Woodwind.* 2-3 credits.
Applied music studies in Woodwind. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 27 credits.

**Recommended Prerequisite:** Audition.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 445:** *Applied Music in Brass.* 2-3 credits.
Applied music studies in Brass. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 27 credits.

**Recommended Prerequisite:** Audition.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 446:** *Applied Music in String.* 2-3 credits.
Applied music studies in String. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 27 credits.

**Recommended Prerequisite:** Audition.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 447:** *Applied Music in Percussion.* 2-3 credits.
Applied music studies in Percussion. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 27 credits.

**Recommended Prerequisite:** Audition.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 448:** *Applied Music in Composition.* 2-3 credits.
Applied music studies in Composition. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 27 credits.

**Recommended Prerequisite:** Portfolio of recent compositions.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 450:** *Jazz Improvisation I.* 2 credits.
Emphasizes improvisational materials and language developed in common practice period of jazz. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 379 or permission of instructor.

**Registration Restrictions:** Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 451: Keyboard Pedagogy II. 3 credits.
Intensive study of methods, theories, techniques, and materials to teach keyboard to children and adults in individual and group situations. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 351 or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 452: Jazz Improvisation II. 2 credits.
Emphasis on advanced improvisational techniques and contemporary tunes. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 379 or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 454: Jazz Arranging. 3 credits.
Transcription, analysis, and scoring for small and large jazz ensembles. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 311 or permission of instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 455: Music as a Healing Art. 3 credits.
Study of the relationship between musical vibrations and the natural rhythms of the body. Topics include history of music and healing, theory of sound, cymatics, toning, and performance practice as well as a survey of vibrational healing modalities and related therapies. Considers listening examples as they apply to healing with music. Students sing and play instruments in directed improvisatory performance. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Basic proficiency with instrument or voice or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 456: Pedagogy II. 2 credits.
Fundamental practical study of methods, literature, sequencing of instruction, and developmental psychology for instrumental or vocal pedagogy. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 351 or MUSI 352 or MUSI 353 or Permission of Instructor.

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 457: Pedagogy III. 2 credits.
Intermediate practical study of methods, literature, sequencing of instruction, and developmental psychology for instrumental or vocal pedagogy. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 456 or Permission of Instructor

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 458: Pedagogy IV. 2 credits.
Advanced practical study of methods, literature, sequencing of instruction, and developmental psychology for instrumental or vocal pedagogy. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 451 or MUSI 457 or Permission of Instructor

Registration Restrictions:
Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 461: The Teaching of General Music in the Elementary and Middle School. 3 credits.
Studies theory, methods, practice, and materials to teach general music in elementary and middle school. Students spend three hours per week in class and one hour per week observing and teaching in laboratory ensemble. Students also participate in field observation of music classes in the public schools. Notes: For music majors only. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: MUSI 114, 216, 273 and acceptance into the Music Education concentration.

Registration Restrictions:
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 463: The Teaching of Vocal Music in the Secondary School.** 3 credits.
Survey of repertoire and methods for teaching high school choral groups, small ensembles, and voice classes. Students spend three hours per week in class, and one hour per week observing and teaching in laboratory ensemble. Students also participate in field observation of music classes in public schools. Notes: For music majors only. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 214, 216, 273, 391 and acceptance into the Music Education concentration.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 464: Instrumental Music Methods I.** 3 credits.
Prepares students to successfully plan, organize, and administer marching band and jazz ensemble programs in secondary public school music curriculum. Students spend three hours per week in class, and one hour per week observing and teaching in laboratory ensemble. Students also participate in field observation of music classes in public schools. Notes: For music majors only. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 214, 216, 273, and acceptance into the Music Education concentration.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 466: Instrumental Music Methods II.** 3 credits.
Prepares students to teach instrumental music in elementary, middle, and secondary schools. Students spend three hours per week in class, and one hour per week observing and teaching in laboratory ensemble. Students also participate in field observation of music classes in public schools. Notes: For music majors only. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 214, 216, 273, 391 and acceptance into the Music Education concentration.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 467: Instrumental Music Methods I: Orchestra.** 3 credits.
Prepares students to successfully plan, organize, and administer string classes from the beginning levels through performing ensembles (grades 4-12), and explore teaching materials appropriate for individual and class instruction. Students spend three hours per week in class, and one hour per week observing and teaching in laboratory ensemble. Students also participate in field observation of music classes in public schools. Notes: For music majors only. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 214, 216, 273, 361 and acceptance into the Music Education concentration.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 477: Music and Consciousness.** 3 credits.
A study of the ways music has affected the mind and brain from throughout history to the present. By using principles of entrainment and resonance, the course demonstrates experientially the various methods by which music is used to alter consciousness. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Basic proficiency with an instrument or voice or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 485: Chamber Ensembles.** 1 credit.
Students develop an understanding of major artistic works, including a consideration of how theoretical and historical insights find expression via performance. Performance of works from chamber music repertoire. Notes: Public performances required. Offered by School of Music (p. 849). May be repeated within the term for a maximum 17 credits.

**Mason Core:** Arts (p. 142)

**Recommended Prerequisite:** Audition.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 489: Music Technology Capstone.** 3 credits.
This course synthesizes information gained throughout the students’ tenure at George Mason, specifically garnering the ideas and techniques found in the music technology sequence. The student will create a large scale project interfacing technology and music, present this project in a variety of different ways to different audiences, and create a portfolio for future opportunities. Offered by School of Music (p. 849). Limited to three attempts.

**Specialized Designation:** Research/Scholarship Intensive

**Registration Restrictions:**
Enrollment is limited to students with a concentration in Music Technology.
Students with the terminated from MUSI major attribute may not enroll.
**MUSI 490:** RS: Musical Communication in Context. 3 credits.
Explains nature of musical communication in a variety of contexts, and combines knowledge gained in Mason Core courses with knowledge and skills specific to the major to serve as a capstone course synthesizing both areas. How does music itself communicate, and how do musicians communicate about it with each other and with the world around them? Students address these through essays in the style of a journal or portfolio, substantial paper, and oral presentation of paper before faculty and student panel. Offered by School of Music (p. 849). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** Must be in senior year of the B.A. program in Music and have completed all other Mason Core requirements.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.

Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 491:** Musical Communication in Performance. 1 credit.
Helps student conceive of musical performance as communication in a variety of contexts, and combines knowledge in Mason Core courses with knowledge and skills specific to the major to serve as a capstone course synthesizing both areas. Students consider various aspects of musical communication to prepare senior recital. Students explore social, historical, analytical, and aesthetic aspects of the music they are to perform by composing essays in the style of a journal or portfolio. Students prepare a substantial paper on recital repertoire and present that paper before a faculty and student panel. Offered by School of Music (p. 849). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Recommended Prerequisite:** Completion of all other Mason Core courses for the BM performance concentration.

**Recommended Corequisite:** Concurrent enrollment in the appropriate 3-credit PMI course and in MUSI 424.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 492:** Selected Topics in Music. 1-3 credits.
Topics of practical interest to students in composition, music history and literature, world music, jazz studies, and performance practices. Offered by School of Music (p. 849). May be repeated within the term.

**Recommended Prerequisite:** Completion of 90 hours.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 493:** Topics in Music Theory. 3 credits.
Intensive exploration of selected topics in music theory and analysis. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 216 or permission of the instructor.

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 494:** Pedagogy Internship. 2 credits.
Internship with a professional pedagogue or educational organization with focus on private music instruction. Students develop individual contracts defining the competencies to be gained from the experience. Offered by School of Music (p. 849). Limited to three attempts.

**Recommended Prerequisite:** MUSI 451 or MUSI 457 or Permission of Instructor

**Registration Restrictions:**
Students with the terminated from MUSI major attribute may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 495:** Internship in Music Education. 6-12 credits.
Full semester of intensive student teaching experience in approved Virginia schools. Offered by School of Music (p. 849). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Recommended Prerequisite:** Completion of all other courses required for the B.M. with a concentration in music education.

**Registration Restrictions:**
Enrollment is limited to students with a major in Music.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**MUSI 496:** Internship. 2-6 credits.
Contact the department one semester before enrollment. Internships are approved work-study programs with specific employers or agencies.

Notes: Credit is determined by the department. Limited to three attempts.

**Recommended Prerequisite:** Completion of 90 hours.
Registration Restrictions: Enrollment is limited to students with a major in Music.

Schedule Type: Internship

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 497: Independent Study. 1-3 credits. Individual research and study of selected subject in close consultation with instructor. Student may choose from the musicological, ethnomusicological, theoretical, compositional, or educational areas, and produce at least one major written work based on research. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: Completion of 90 hours.

Registration Restrictions: Enrollment is limited to students with a major in Music.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

MUSI 498: Independent Study. 1-3 credits. Individual research and study of selected subject in close consultation with instructor. Student may choose from the musicological, ethnomusicological, theoretical, compositional, or educational areas, and produce at least one major written work based on research. Offered by School of Music (p. 849). Limited to three attempts.

Recommended Prerequisite: Completion of 90 hours.

Registration Restrictions: Enrollment is limited to students with a major in Music.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

MUSI 501: Graduate Theory Review. 3 credits. Vocabulary and conceptual review of diatonic and chromatic harmony, part writing, form, harmonization, 20th-century techniques. Notes: Does not count toward required credits of a graduate music degree. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Baccalaureate degree in music, graduate placement exam.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MUSI 502: Graduate Aural Skills Review. 3 credits. Music reading and aural skills including intervals, dictation (melodic and harmonic), scales, chords, rhythms, and meter. Notes: Does not count toward required credits of a graduate music degree. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Baccalaureate degree in music, graduate placement exam.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio
MUSI 525: Performance Seminar and Vocal Literature for Singers and Accompanists I. 2 credits.
Students assigned art songs or operatic arias in Italian, German, French, and English, from Baroque to 21st century, and perform in weekly master class format. Develops and improves musical and artistic preparation and performance, increases repertoire, and establishes dependable methods for creating consistently high standards of artistic performance. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 526: Performance Seminar and Vocal Literature for Singers and Accompanists II. 2 credits.
Students assigned art songs or operatic arias in Italian, German, French, and English, from Baroque to 21st century, and perform in weekly master class format. Develops and improves musical and artistic preparation and performance, increases repertoire, and establishes dependable methods for creating consistently high standards of artistic performance. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 532: Music History Review I. 3 credits.
Enhance understanding of music history and the context of musical style, chronologically through the mid-18th century. Notes: Does not fulfill course requirements for graduate degrees in music. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Baccalaureate degree in music, graduate placement exam.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 541: Diction for Singers I: Italian Diction and English Diction. 2 credits.
Increases proficiency in singing in Italian and English by teaching International Phonetic Alphabet (IPA), and strengthens performance of Italian and English art song and operatic repertoire. Intensified, systematic study of phonetics as it applies to Italian and English. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Graduate status in applied voice or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 542: Diction for Singers II: German Diction and French Diction. 2 credits.
Increases proficiency in singing in German and French by teaching International Phonetic Alphabet (IPA), and strengthens performance of German and French art songs and operatic repertoire. Intensified, systematic study of phonetics as it applies to singing in German and French. Offered by School of Music (p. 849). May not be repeated for credit.
**Recommended Prerequisite:** Graduate status in applied voice or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 551: Keyboard Pedagogy.** 3 credits.
Intensive study of methods, theories, techniques, and materials to teach keyboard to children and adults in individual and group situations. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Graduate status in applied piano or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 552: Vocal Pedagogy and Lab.** 3 credits.
Instruction in teaching voice through systematic study of vocal physiology and its implications for pedagogical methods. Includes theoretical and systematic study of processes, procedures, and practices to develop art of singing. Offers technical, physiological, theoretical, and practical principals of the singing art, with emphasis on vocal health. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Graduate status in applied voice or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 553: Instrumental Pedagogy and Literature.** 3 credits.
Instruction in teaching of instrumental music techniques for all levels through the study of pedagogical methods, standard literature, and musical instruments produced by present-day manufacturers. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Baccalaureate in music, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 555: Music as a Healing Art.** 3 credits.
Study of the relationship between musical vibrations and the natural rhythms of the body. Topics include history of music and healing, theory of sound, cymatics, toning, and performance practice as well as a survey of vibrational healing modalities and related therapies. Considers listening examples as they apply to healing with music. Students sing and play instruments in directed improvisatory performance. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Basic proficiency with instrument or voice, and bachelor's degree in music.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 557: Kodaly I.** 3 credits.
In depth study of Kodaly, concentrating in four areas: Methodology, Materials, Solfege, and Conducting. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Baccalaureate in music, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 558: Kodaly II. 3 credits.**
Continues to build on and expand Kodaly knowledge and skills in the four areas: Methodology, Materials, Solfege, and Conducting Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** MUSI 557 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 559: Kodaly III. 3 credits.**
Completion of Kodaly training, finishing Kodaly Methodology, Materials, Solfege, and Conducting Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** MUSI 558 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 561: Music Curriculum and Instructional Procedures. 3 credits.**
This graduate course is designed to prepare students for a job in the elementary or middle school general music classroom. Classes will equip students with the competencies necessary to plan, create, implement, and evaluate a general music curriculum. Current trends, materials, methods, and approaches in music education will be reviewed. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** MUSI 557 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 563: Orff Schulwerk I. 3 credits.**
Intensive introduction to Orff teaching philosophy with practical and theoretical instruction and immersion in the method itself. Students learn concepts of rhythm, harmony, solfege, modes, improvisation, and pedagogy. Students learn basic performance technique on soprano recorder, and learn to apply movement and dance in their teaching. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** MUSI 563 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 564: Orff Schulwerk II. 3 credits.**
Continues intensive study of Orff teaching philosophy with practical and theoretical instruction and immersion. Teaches further concepts of rhythm and meter including asymmetrical patterns. Reviews pentatonic modes and their transpositions, studies pentachordal and hexachordal scales, and begins intensive work with diatonic modes. Students work with a variety of percussion instruments including body percussion, unpitched instruments, and barred instruments. They sing and play soprano, alto, tenor, and bass recorders. Movement studies continue with intensive study of vocabulary of dance and mime. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** MUSI 563 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 565: Orff Schulwerk III. 3 credits.**
Continues intensive study of Orff teaching philosophy to complete certification process in Orff Schulwerk. Students continue intensive work in rhythm, melody, harmony, timbre, form, and pedagogy. Tenor, bass, and soprano recorders introduced. Movement and rhythmic studies concentrate on mixed meters and non-Western source materials and styles. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** MUSI 563 and 564 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 566: Instrumental Methods for Band.** 3 credits.
This course prepares students to teach instrumental music in elementary and secondary schools. Students spend three hours per week in class, and one hour per week observing and teaching in laboratory ensemble. Students also participate in field observation of music classes in public schools. Offered by School of Music (p. 849). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 567: Instrumental Methods, Strings.** 3 credits.
Prepares students to successfully plan, organize, and administer string classes from the beginning levels through performing ensembles (grades 4-12), and to explore teaching materials appropriate for individual and class instruction. Three hours per week spent in class, one hour per week observing and teaching in laboratory ensemble. Students also participate in field observation of music classes in public schools. Offered by School of Music (p. 849). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 568: Vocal and Choral Methods.** 3 credits.
A Survey course that introduces repertoire and methods for teaching middle and high school choral groups, small ensemble and voice classes. Students spend three hours per week in class, and one hour per week observing and teaching in laboratory ensemble. Students also participate in field observation of music classes in the public schools. Offered by School of Music (p. 849). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 577: Music and Consciousness.** 3 credits.
A Study of the ways music has affected the mind and brain from throughout history to the present day. By using the principles of entrainment and resonance, it will be demonstrated experientially the various methods by which music is used to alter consciousness. Offered by School of Music (p. 849). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 592: Topics in Music.** 1-6 credits.
Intensive study of selected topics in performance, composition, or conducting. Individual research, group discussions, and participation in related activities. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** Baccalaureate degree in music.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 593: Foundations of Music Education.** 3 credits.
This course prepares students to address aspects of administration management of music programs in public and private schools. Various principles and concepts of management styles and planning are investigated. Topics addressed include: curriculum, budget, student recruitment and retention, music facilities, external relations of the music unit and legal issues for music educators. Offered by School of Music (p. 849). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 595: Internship in Music Education.** 6-9 credits.
This course prepares students to successfully plan and implement pedagogical strategies for the effective teaching of instrumental music. Students will also gain experience administering a music program in the elementary and secondary school music curriculum. Students will participate in class teaching modules and field experiences in the public schools. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** 1. Completion of all courses required for the Graduate Certificate in Music Education Licensure for PK-12. 2. Successful completion of the Music Education "Instrumental Proficiency Exam" requirements listed in the Music Education Handbook. 3. Successful completion of the Praxis I Examination (or equivalency), and VCLA (or Praxis I equivalency).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**MUSI 610: Topics in Music Theory.** 3 credits.
Uses music analytical theories to examine repertoire from a given time period or style. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** MUSI 501, 502, and 516 or appropriate score on graduate placement exam.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
MUSI 611: Analytical Techniques. 3 credits.
Detailed formal and stylistic examination of music selected from the major style periods. Development of graduate-level analytical skills. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: MUSI 501, 502, and 516 or appropriate score on graduate placement exam.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 613: Graduate Orchestration. 3 credits.
Intensive study of instrumentation through analysis and arrangement. Includes contemporary techniques and scoring for large forces. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: MUSI 501, 502, and 516 or appropriate score on the graduate placement exam.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 614: Music Theory Pedagogy. 3 credits.
Study of materials and procedures in the teaching of undergraduate-level music theory subjects. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Baccalaureate degree in music, graduate placement exam.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 615: Advanced Jazz Improvisation. 3 credits.
Advanced techniques and applications of jazz improvisation. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Graduate placement exam or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 621: Graduate Applied Music. 1 credit.
Graduate Applied music studies Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition or portfolio.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 622: Applied Music in Keyboard. 1 credit.
Applied music studies in Keyboard. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Applied music studies in Voice. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 624: Applied Music in Woodwind. 1 credit.
Applied music studies in Woodwind. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 625: Applied Music in Brass. 1 credit.
Applied Music studies in Brass. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 626: Applied Music in String. 1 credit.
Applied Music studies in String. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 627: Applied Music in Percussion. 1 credit.
Applied Music studies in Percussion. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 628: Applied Music in Composition. 1 credit.
Applied Music studies in Composition. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Portfolio of recent compositions.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 629: Applied Music in Conducting. 1 credit.
Applied Music studies in Conducting. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 630: Topics in Music History and Literature. 3 credits.
Examination of a musical style, genre, composer, compositional school, or historical development. Primary and secondary source materials studied.
in historical and analytical contexts. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** MUSI 532 and 533 or appropriate score on the graduate placement exam.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 640: Topics in World Musics. 3 credits.**
Study of musics from selected cultures. Students will study structural, social, and cognitive foundations of the music. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Baccalaureate degree in music, graduate placement exam.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 650: Topics in Jazz Studies. 3 credits.**
Study of selected topics in performance, composition, arranging and analysis. May be repeated for up to 9 credits as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Graduate placement exam or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 651: Keyboard Pedagogy II. 3 credits.**
Develop effective teaching strategies, business practices, and investigative/diagnostic approaches in repertoire exploration to prepare/improve teaching abilities in independent studio. Examine professional role of independent piano teacher, investigate scope and sequence of repertoire development, explore creative activities and computer use in the studio, develop understanding of technical skill development, examine intermediate/advanced keyboard repertoire, explore various teaching strategies/philosophies. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Keyboard Pedagogy I.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 652: Vocal Pedagogy II. 3 credits.**
A continuation of vocal pedagogy I, which focused on teaching voice through the rudimentary and systematic study of vocal physiology and pedagogical methods, and included the process, procedures, development and practice of the art of singing. Pedagogy II provides students the opportunity to apply this information to real life situations through use of four specific scenarios and practical teaching experience. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Vocal Pedagogy I.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**MUSI 653: Instrumental Pedagogy II. 3 credits.**
Prepares students for teaching string techniques of their major instrument for all levels through study of pedagogical methods and standard literature. Develop sound business practices/policies to ensure success in setting up a private studio; become familiar with local/national professional organizations serving the string teaching community; explore teaching abilities through a case study project involving one or more students. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Instrumental Pedagogy I.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MUSI 654: Graduate Conducting. 3 credits. Classroom study of conducting, including refining gestures, rehearsal leadership, and the communication of musical style. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Baccalaureate degree in music, graduate placement exam.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MUSI 660: Topics in Music Education. 1-6 credits. Examination of specific areas of concern to music educators. Individual research, group discussions, and participation in related activities. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: Baccalaureate degree in music, graduate placement exam.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MUSI 661: Psychology of Music Teaching and Learning. 3 credits. Study of the learner's musical behaviors (affective, cognitive, and psychomotor) in an effort to devise an empirically based teaching method founded on learning principles. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Baccalaureate degree in music; graduate placement exam.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MUSI 662: Introduction to Research in Music. 3 credits. Development of skills, attitudes, and understanding to conduct and report research in music, including philosophical bases, scope and organization, stylistic practices in writing research reports, study of materials and resources in music and music education, and proper use of library and other research services. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Baccalaureate degree in music or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

MUSI 663: Aesthetics of Music Education. 3 credits. Study of philosophical foundations of contemporary music education, and critical examination of music programs and activities in aesthetic education and efforts by music education establishment to enhance them. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Baccalaureate degree in music or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)
MUSI 664: Advanced Pedagogy. 3 credits.
Advanced instruction in pedagogy including study of methods, theories, techniques, and materials for teaching children and adult students. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: MUSI 551, or MUSI 552, or MUSI 553, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 681: Graduate Choral Ensembles. 1 credit.
Performance of works from the choral repertoire. Notes: Public concerts are given. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 682: Wind Symphony. 1 credit.
Highly selective group of instrumentalists performing works from the wind repertoire. Notes: Public concerts are given. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 683: Symphonic Band. 1 credit.
Performance of works from band repertoire. Notes: Public concerts are given. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 685: Graduate Chamber Ensemble. 1 credit.
Performance of works from chamber music repertoire. Notes: Public concerts are given. Offered by School of Music (p. 849). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 687: Symphony Orchestra. 1 credit.
Performance of works from orchestral repertoire. Notes: Public concerts are given. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Studio

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 688: Opera and Musical Theater Ensemble. 3 credits.
Solo-vocal, performance-oriented ensemble class that presents operatic works or excerpts from them, from Baroque to 21st century, as well as works or excerpts from American musical theater. Offered by School of
Music (p. 849). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 689: **Jazz Ensemble.** 1 credit.
Provides practical experience in aspects of jazz performance. Participation in section rehearsals and small and large jazz groups. Jazz improvisation expected. Notes: Public concerts are given. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 690: **Graduate Lecture Recital.** 1-3 credits.
Combination of musical performance and scholarly presentation on a well-defined topic. Notes: Public presentation required. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Baccalaureate degree in music, audition.

**Recommended Corequisite:** MUSI 621 (3-credit level).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 695: **Teaching Internship.** 2 credits.
Teaching beginner, intermediate, and early advanced students in private or group lessons under faculty supervision. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 4 credits.

**Recommended Prerequisite:** MUSI 660.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 710: **Advanced Topics in Music Theory.** 3 credits.
Advanced study of specific styles and repertoire from the perspective of various analytical approaches. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** MUSI 501, 502, and 516 or appropriate score on graduate placement exam.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**MUSI 712: Composition for Conductors and Performers.** 3 credits. Advanced study of new music for various media. Notes: This course is not for students in the composition concentration. Offered by School of Music (p. 849). May not be repeated for credit.

**Recommended Prerequisite:** Baccalaureate degree in music, graduate placement exam.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**MUSI 720: Advanced Topics in Applied Music.** 3 credits. Advanced study of concepts in applied music. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Baccalaureate degree in music, graduate placement exam.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**MUSI 721: Applied Music.** 2-3 credits. Applied Music studies. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition or portfolio.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**MUSI 722: Applied Music in Keyboard.** 2-3 credits. Applied music studies in Keyboard. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**MUSI 723: Applied Music in Voice.** 2-3 credits. Applied music in Voice. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**MUSI 724: Applied Music in Woodwind.** 2-3 credits. Applied music studies in Woodwind. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**MUSI 725: Applied Music in Brass.** 2-3 credits. Applied music studies in Brass. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**MUSI 726: Applied Music in String.** 2-3 credits. Applied music studies in String. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**MUSI 727: Applied Music in Percussion.** 2-3 credits. Applied music studies in Percussion. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.
Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 728: Applied Music in Composition. 2-3 credits.
Applied music studies in Composition. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: Portfolio of recent compositions.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 729: Applied Music in Conducting. 2-3 credits.
Applied music studies in Conducting. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 730: Advanced Topics in Music History. 3 credits.
Advanced study of specific genres, composers, or repertoire from a historically analytical perspective. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: MUSI 532 and 533 or appropriate score on the graduate placement exam.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 760: Advanced Topics in Music Education. 3 credits.
Advanced study of selected issues in music education. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Baccalaureate degree in music, graduate placement exam.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 770: Advanced Topics in Pedagogy. 3 credits.
Advanced study of a specific topic in the pedagogy of music. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Baccalaureate degree in music, graduate placement exam.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 777: Music and Consciousness 2. 3 credits.
The scientific mechanisms behind vibrational healing are uncovered showing how energy medicine affects Well -Being in a positive way. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: MUSI 577 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 780: Doctoral Research Methods in Music. 3 credits.
Development of analytical skills to design and create an original contribution to music scholarship at the doctoral level, by making students aware of the varied tools available to them to write a mock dissertation proposal. Offered by School of Music (p. 849). May not be repeated for credit.

Recommended Prerequisite: Graduate Placement exam.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
MUSI 790: Graduate Recital. 1 credit.
Public performance. Repertoire and performance standards as approved by faculty. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 4 credits.

**Recommended Prerequisite:** At least three credits of graduate PMI in the appropriate instrument or voice.

**Recommended Corequisite:** MUSI 700-level PMI (3-credits).

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 796: Directed Reading/Research. 1-3 credits.
Individualized study on a topic approved by faculty. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Baccalaureate degree in music, graduate placement exam.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

MUSI 800: Studies for the Doctor of Philosophy in Education. 1-6 credits.
Program of studies designed by the student’s discipline director and approved by student’s doctoral committee that brings student to participate in research, performance, or creative activity of discipline director and results in a paper reporting original contributions. Offered by School of Music (p. 849). May be repeated within the degree.

**Recommended Prerequisite:** Open only to PhD Education students admitted to study in music.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 810: Doctoral Seminar in Analysis. 3 credits.
Seminar study of a specific genre or repertoire from various analytical perspectives. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Graduate placement examination.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 821: Doctoral Private Music Instruction. 2-3 credits.
Private instruction in performance, conducting, or composition. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition or portfolio.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 822: Doctoral Applied Music in Keyboard. 2-3 credits.
Doctoral applied music studies in Keyboard. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Private Music Instruction

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 823: Doctoral Applied Music in Voice. 2-3 credits.
Doctoral applied music studies in Voice. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

**Recommended Prerequisite:** Audition.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Private Music Instruction

**Grading:**
MUSI 824: Doctoral Applied Music in Woodwind. 2-3 credits.
Doctoral applied music studies in Woodwind. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 825: Doctoral Applied Music in Brass. 2-3 credits.
Doctoral applied music studies in Brass. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 826: Doctoral Applied Music in String. 2-3 credits.
Doctoral applied music studies in String. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 827: Doctoral Applied Music in Percussion. 2-3 credits.
Doctoral applied music studies in Percussion. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 828: Doctoral Applied Music in Composition. 2-3 credits.
Doctoral applied music studies in Composition. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: Portfolio of recent compositions.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 829: Doctoral Applied Music in Conducting. 2-3 credits.
Doctoral applied music studies in Conducting. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Private Music Instruction
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 830: Doctoral Seminar in Music History. 3 credits.
Seminar study of a specific genre, composer, or repertoire from a historically analytical perspective. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Graduate placement exam.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 860: Doctoral Seminar in Music Education. 3 credits.
Seminar study of a specific issue in music education. Notes: May be repeated as topics change. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Graduate placement exam.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

MUSI 880: Doctoral Major Ensemble. 1 credit.
Selective ensemble experience for doctoral students in music. Notes: Public concerts are given. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Studio
Grading:
This course is graded on the Graduate Regular scale. (p. 84)
MUSI 890: Doctoral Recital. 1 credit.
Public performance. Repertoire and performance standards as approved by faculty. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 4 credits.

Recommended Prerequisite: At least three credits of MUSI 821 in the appropriate instrument or voice.

Recommended Corequisite: MUSI 821 for 3 credits.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Private Music Instruction

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

900 Level Courses
MUSI 998: Dissertation Proposal. 1-3 credits.
Preparation of a proposal for a dissertation study in music under the supervision of music faculty members. Offered by School of Music (p. 849). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission to a doctoral program in music, permission of faculty.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses
NAIS 499: Independent Study. 3 credits.
Intensive study of a particular area, topic, or critical or theoretical problem related to Native American and Indigenous Studies to be conducted in close consultation with an instructor. At least one substantial, researched piece of written work required. Offered by English (p. 359). Limited to three attempts.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Neuroscience (NEUR)

100 Level Courses
NEUR 101: Introduction to Neuroscience. 3 credits.
This course is for students interested in the science of the brain from its evolutionary origins to its role in health and behavior. We examine systems that make up the brain from neurons to circuits. We explore trends in neuroscience experimentation including neuroimaging, computational neuroscience and neuropharmacology. Offered by Neuroscience (p. 781). Limited to three attempts.

Mason Core: Natural Science Overview (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses
NEUR 327: Cellular, Neurophysiological, and Pharmacological Neuroscience. 3 credits.
Basic concepts of cellular and molecular level neuroscience, including neuronal functions, cellular anatomy and membrane functions, electrical properties of neurons, and cellular basis of plasticity. Offered by Neuroscience (p. 781). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: CHEM 211C, 213C and BIOL 213C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Native American and Indigenous Studies (NAIS)

200 Level Courses
NAIS 201: Introduction to Native American and Indigenous Studies. 3 credits.
Introduction to the history, social organization, political experience, and artistic expression of indigenous peoples of the western hemisphere, focusing primarily on American Indians, using methods and materials from a number of disciplines. Offered by English (p. 359). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NEUR 335: Molecular, Developmental, and Systems Neuroscience. 3 credits.
In-depth survey of genetic and embryological development of the brain and introduction to systems neuroscience, including sections on patterning gene expression, generation and migration of neurons, axonal and dendritic outgrowth, and basic neuroanatomy. Offered by Neuroscience (p. 781). Limited to three attempts.

Recommended Prerequisite: PSYC 373 (may also be enrolled concurrently), PSYC 376.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
400 Level Courses

NEUR 405: RS: Laboratory Methods in Behavioral Neuroscience. 3 credits.
Introduction to experimental methods used in behavioral neuroscience research. Laboratory work includes surgical, histological and behavioral techniques. Proper use and handling of animals, ethical issues, evaluation of neuroscience literature, experimental design and data analysis are addressed. Requires working with laboratory rodents. Offered by Neuroscience (p. 781). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: PSYC 300, BIOL 312 or equivalent. PSYC 372 or PSYC 376 or permission of instructor.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NEUR 406: Zebrafish Neurodevelopment Laboratory. 3 credits.
Introduction to experimental methods used in neurodevelopment research, using zebrafish as a model system. Includes zebrafish embryo manipulation, microscopy, and histology, with a focus on vertebrate nervous system development and disease. Experimental design, research methods, data analysis and ethical issues are addressed. Scholarly research projects are incorporated. Notes: This requires working with live zebrafish embryos. Offered by Neuroscience (p. 781). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: PSYC 300, BIOL 312 or equivalent. BIOL 213, NEUR 327 and NEUR 335.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NEUR 410: Current Topics in Neuroscience. 3 credits.
Overview of current topics in neuroscience, focusing on research at Mason. Offered by Neuroscience (p. 781). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: PSYC 375, 376, ENGH 302. NSCI 327 recommended.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NEUR 411: Seminar in Neuroscience. 3 credits.
Advanced seminar on a selected topic in neuroscience. Includes in depth reading and discussion of current research in human and nonhuman animals, with an emphasis on critical evaluation. Notes: Course may be repeated if selected topic is different. Offered by Neuroscience (p. 781). May be repeated within the degree for a maximum 6 credits.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: PSYC 375, 376, ENGH 302, NEUR 327 and NEUR 335.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NEUR 440: Independent Study in Neuroscience. 1-3 credits.
Independent research based a laboratory or field investigation under the guidance of a faculty member, assisting with research on faculty projects, or reviewing the literature on a specific research topic. Notes: A maximum of 6 hours of independent study may be applied towards the major. Offered by Neuroscience (p. 781). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: NEUR 327, 30 hours of course work with a grade point average of 3.0, or permission of instructor.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NEUR 450: Honors Thesis Proposal. 2-3 credits.
Work on proposal for thesis based a laboratory or field investigation under the guidance of a faculty member. Notes: A total of 6 hours must be taken in NEUR 450 and 451. A minimum of 2 hours and a maximum of 3 hours may be taken in NEUR 450. Offered by Neuroscience (p. 781). Limited to three attempts.

Recommended Prerequisite: NEUR 327; 335; 410 or 411, may be taken as co-requisites. PSYC 300 or equivalent statistics course. Permission of NAC undergraduate committee and thesis director.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

NEUR 451: Honors Thesis. 3-4 credits.
Thesis based a laboratory or field investigation under the guidance of a faculty member. Notes: A total of 6 hours must be taken in NEUR 450 and 451. A minimum of 3 hours and a maximum of 4 hours may be taken in NEUR 451. Offered by Neuroscience (p. 781). Limited to three attempts.

Recommended Prerequisite: NEUR 450.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

NEUR 461: Special Topics in Neuroscience. 1-3 credits.
Selected topics reflecting in specialized areas of neuroscience. Notes: May be repeated for credit when topic is different. Offered by Neuroscience (p. 781). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: PSYC 372, 375, or equivalent or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NEUR 480: Biological Bases of Alzheimer’s Disease. 3 credits.
Recommended Prerequisite: PSYC 375; PSYC 376; PSYC 375 or equivalent or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

NEUR 592: Special Topics in Neuroscience. 3 credits.
Special topics in neuroscience reflecting specialized areas or new subfields that not covered in fixed-content neuroscience courses. Course may be repeated for credit as needed. Offered by Neuroscience (p. 781). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: NEUR 327, NEUR 335 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

NEUR 600: Chemistry and the Brain. 3 credits.
Fundamentals of general chemistry, atoms, molecules, and reactions, with emphasis on water solutions. Organic compounds and functional groups, biosynthesis and properties, and examples from nervous system. Also includes biopolymers and their roles in cellular and neuronal organization, ionic channels, neurotransmitter receptors, and psychoactive substances. Offered by Neuroscience (p. 781). May not be repeated for credit.

Recommended Prerequisite: Admission to neuroscience PhD program or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NEUR 602: Developmental Neuroscience. 3 credits.
Introduction to developmental neurobiology with overview of embryological development of the nervous system. Topics include neural induction, patterning/cell fate specification, and neural circuit assembly together with modern molecular methods for exploring neural development. Offered by Neuroscience (p. 781). May not be repeated for credit.

Recommended Prerequisite: Completion of 60 credits, including PSYC 372 or BIOL 213 or BIOL 303.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NEUR 603: Mammalian Neuroanatomy. 3 credits.
Focus on mammalian brain organization and function, emphasizing human neurobiology. Modern experimental and clinical tools explain: gross and microscopic brain organization; functional brain circuits for sensory and motor processing; higher brain organization and function; and development of selected brain areas. The knowledge gained is then used to explain the clinical symptoms occurring after specific brain insults. Offered by Neuroscience (p. 781). May not be repeated for credit.

Recommended Prerequisite: One course in neuroscience (or equivalent biology course), or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Offered by Neuroscience based on article presentation, class participation, and final written report. (p. 84)

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 604: Ethics in Scientific Research.** 1-3 credits.
Reflects on purpose of scientific research and reviews foundational principles for evaluating ethical issues. Offers skills for survival in scientific research through training in moral reasoning and teaching of responsible conduct. Discusses ethical issues in research, and teaches how to apply critical thinking skills to design, execution, and analysis of experiments. Issues include using animals and humans in research, ethical standards in computer community, and research fraud. Currently accepted guidelines for behavior in data ownership, manuscript preparation, and conduct of persons in authority may be presented and discussed in terms of relevant ethical issues. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree, Undergraduate or Washington Consortium level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 611: Philosophical Foundation of Neuroscience.** 3 credits.
This course presents the joint histories of the nature of thought, the philosophy of science, the construct of self, and the nature of mind. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** Any course in neuroscience or permission of the instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 612: Neuroethics.** 3 credits.
Neuroethics explores the implications of developments in basic and clinical neuroscience on social and ethical issues. This course will survey emerging questions raised by recent neuroscience discoveries on genetic and environmental factors that influence human behavior, decision-making, personality traits, and mental states. Grades will be based on article presentation, class participation, and final written report. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 621: Synaptic Plasticity.** 3 credits.
Course on activity-dependent modification of functional connectivity in the central nervous system as it relates to development, cognition, and disease. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** NEUR 602.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 634: Neural Modeling.** 3 credits.
Introduces the objectives, philosophy, and methodology of neuronal modeling. Instructs students in the use of some of the more popular neural modeling software packages. Students learn the syntax of several software packages, how to create neurons from subcellular components, and how to create networks by connecting neuron models. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** NEUR 602 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 651: Molecular Neuropharmacology.** 3 credits.
Provides an in-depth survey of receptor driven cell function, which includes recent topics in cell structure, membrane function, electrical properties of neurons and intracellular signaling. Enables an introduction to research tools and rends in study of neuronal systems via a reading and an analysis of the primary literature. Offered by Neuroscience (p. 781). May not be repeated for credit.
**Recommended Prerequisite:** NEUR 602 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 699: Topics in Neuroscience.** 3 credits.
Selected topics in neuroscience reflecting specialized areas or new subfields not covered in fixed-content neuroscience courses. Offered by Neuroscience (p. 781). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**NEUR 701: Neuroscience Laboratory.** 3 credits.
Advanced training in experimental techniques used in current neuroscience research. Acquaints students with the theoretical basis of multiple techniques and trains the student in the laboratory skills necessary to perform each technique. Includes work in model systems or cell culture, microscopy, histology and data analysis. Notes: This lab requires working with live zebrafish embryos. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD program in Neuroscience.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 702: Research Methods.** 3 credits.
Trains students in research methodologies for life sciences. Covers the four aspects of biological research projects: experimental design, data collection, data analysis and research ethics. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 703: Laboratory Rotation and Readings.** 3 credits.
Intensive introduction to a research laboratory in neuroscience. The student will read background material pertinent to the problem under study, learn and practice research methods of the laboratory, and formulate a short final project, which may be a proposal or an actual project, demonstrating some mastery of the techniques and approaches employed. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD program in Neuroscience.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 709: Neuroscience Seminars.** 1 credit.
Special seminar series for first year neuroscience PhD students. Detailed overview of neuroscience research at Mason. Each week, a different neuroscience laboratory and principal investigator lectures to students. The lecture includes the neuroscience basics necessary to appreciate the laboratory research theme and mission, and a more practical description of the active research program, possibly including a visit to the laboratory. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Neuroscience PhD program.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 710: Special Topics in Neuroscience.** 1 credit.
Examines topics in neurosciences, including neurogenetics, neural imaging, and the competing computational and biological approaches to understanding the mind. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Neuroscience PhD program.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 734: Computational Neurobiology.** 3 credits.
Intense review of neurobiology for graduate students interested in studying how nerve cells integrate and transmit signals, and how behavior emerges from integrated actions of populations or circuits of nerve cells. Covers electrical and biochemical properties of single neurons, and electrical and chemical communication between neurons. Emphasizes mathematical descriptions and computational techniques to study and understand neurons and networks of neurons. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** NEUR 602 and MATH 214, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 735: Computational Neuroscience Systems.** 3 credits.
Intensive introduction to systems neuroscience from quantitative perspective. Covers computational techniques used to study function of networks of neurons. Uses spike train statistics, neural encoding, and information theory to investigate behaviors that emerge from integrated actions of networks of neurons. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** NEUR 734 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 741: Introduction to Neuroimaging.** 3 credits.
Introduction to physics and techniques of magnetic resonance imaging (MRI) and their applications to clinical and basic neuroscience. Students learn about the protocols used in the acquisition of images in both structural and functional contexts, and experimental paradigms applied to the exploration of cognition, learning, and development. Students gain experience with creating an experimental design for a study and understanding practical logistics involved in imaging, such as MRI safety and subject screening. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** NEUR 602 or 603, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 742: Cognitive Neuroscience.** 3 credits.
Introduces cognitive neuroscience topics, including aspects of cognitive science covering an array of perceptual, sensory, cognitive, and affective processes. Incorporates studies of brain lesions, brain imaging, and animal and computational models. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** NEUR 602 or NEUR 603 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 751: Applied Dynamics in Neuroscience.** 3 credits.
Covers recent developments in the application of applied dynamics to neuroscience. Emphasizes dynamical system approach to the understanding of neural processes. Topics include neural synchrony and control; formation of waves; oscillations; patterns within neural ensembles; network topology and dynamics of neurons; and decoding and encoding of neural signals. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** CSI 734, PSYC 531, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NEUR 752: Modern Instrumentation in Neuroscience.** 3 credits.
Builds on knowledge of how and what things are measured and controlled in modern bioinstrumentation. Topics include fundamental instrumentation; principles of sensing; basic electronics; computer interfaces and data acquisition; signals in biological systems; biopotential and ionic concentration measurements; and optical techniques. Offered by Neuroscience (p. 781). May not be repeated for credit.

**Recommended Prerequisite:** NEUR 602 or 734, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
**Schedule Type:** Lecture  

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**800 Level Courses**

**NEUR 851: Advanced Computation and Brain Dynamics.** 3 credits.  
In-depth study of open issues and the state-of-the-art in advanced brain dynamics. Using mathematical and physical models, the course covers the neurodynamical aspects of neural nets, receptive fields, ion-channels, intercortical interactions, phase-locking, synchronicity, and the possible nontrivial role of quantum effects. Offered by Neuroscience (p. 781). May not be repeated for credit.  

**Recommended Prerequisite:** CSI 734, PSYC 531.  

**Registration Restrictions:**  
Enrollment is limited to Graduate level students.  

**Schedule Type:** Independent Study  

**Grading:**  
This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**NEUR 996: Doctoral Reading and Research.** 3,6 credits.  
Reading and research on specific topic in neuroscience under direction of faculty member. Offered by Neuroscience (p. 781). May be repeated within the degree for a maximum 12 credits.  

**Recommended Prerequisite:** Admission into the NEUR doctoral program and permission of instructor.  

**Registration Restrictions:**  
Enrollment is limited to Graduate level students.  

**Schedule Type:** Laboratory  

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 305: Application of Basic Nursing Techniques.** 1 credit.  
To be taken fall semester of accelerated second degree program. Introduces basic nursing technologies, and provides opportunities to apply these skills in simulated technology lab. Offered by Nursing (p. 289). Limited to two attempts.  

**Recommended Prerequisite:** Acceptance into accelerated nursing pathway.  

**Registration Restrictions:**  
Enrollment limited to students with a major in Nursing.  

**Schedule Type:** Laboratory  

**Grading:**  
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 309: Introduction to Basic Nursing Care.** 3 credits.  
Enrollment restricted to second-degree students only. Introduces basic fundamentals of nursing care across the life span. Emphasis on nursing process, critical thinking, and foundational technologies and skills required to practice in the health care setting. Notes: Enrollment restricted to second-degree students only. Requires acceptance into the accelerated nursing pathway. Offered by Nursing (p. 289). Limited to two attempts.  

**Recommended Prerequisite:** Admission to the Neuroscience Ph.D. program.  

**Registration Restrictions:**  
Enrollment is limited to students with a major in Nursing.  

**Schedule Type:** Dissertation  

**Grading:**  
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**NURS 310: Application of Basic Nursing Care.** 4 credits.  
Application of basic nursing care in acute care settings utilizing the nursing process. Note: Open only to second degree students. Enrollment is controlled. Offered by Nursing (p. 289). Limited to two attempts.  

**Recommended Prerequisite:** Advancement to candidacy in the Neuroscience Ph.D. program. Students must email mhayes5@gmu.edu for permission and CRN to register. Offered by Neuroscience (p. 781). May be repeated within the degree.  

**Registration Restrictions:**  
Enrollment limited to students with a class of Advanced to Candidacy.  

**Schedule Type:** Dissertation  

**Grading:**  
This course is graded on the Satisfactory/No Credit scale. (p. 84)
Enrollment limited to students in a Bach of Science in Nursing degree.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**NURS 312: Basic Nursing Care of Adults.** 4 credits.
Provides the student the opportunity to practice health assessment and fundamental nursing skills with adult medical/surgical clients, including those who are culturally diverse, vulnerable, and experiencing physiological, psychological, and social health problems. Offered by Nursing (p. 289). Limited to two attempts.

**Registration Restrictions:**
Enrollment is limited to students in a Bach of Science in Nursing degree. Enrollment limited to students with a major in Nursing.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**NURS 319: Pathophysiological Basis for Nursing Care of Individuals and Small Groups.** 4 credits.
Focuses on pathophysiological, psychological, sociocultural, and risk-reduction factors related to nursing care for clients with psychiatric conditions, as well as for child-bearing women, infants, children, and adolescents with acute health care needs. Offered by Nursing (p. 289). Limited to two attempts.

**Recommended Prerequisite:** Acceptance into accelerated nursing pathway. Enrollment is controlled.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 330: Nursing Fundamentals.** 3 credits.
Introduces nursing process and communication skills as the foundation for beginning health assessment and fundamental nursing care for culturally diverse individuals throughout the life span. Offered by Nursing (p. 289). Limited to two attempts.

**Recommended Corequisite:** NURS 312.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 333: Concepts in Professional Nursing as a Discipline.** 3 credits.
Provides an analysis of the profession and explores nursing philosophies and theories. Explores legal, ethical, political, and technological issues in health care at various nursing levels. Addresses critical thinking and its application to the collaborative nursing process. Utilizes the American Psychological Association formatting style for professional writing within the nursing profession. Notes: Must be admitted to the RN-to-BSN program. Offered by Nursing (p. 289). Limited to two attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 336: Application of Nursing Fundamental Technologies.** 1 credit.
Opportunity to practice health assessment and fundamental nursing technologies while using communication skills with culturally diverse and vulnerable populations in a variety of settings. Offered by Nursing (p. 289). Limited to two attempts.

**Recommended Prerequisite:** Junior standing.

**Recommended Corequisite:** NURS 312.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 334: Pharmacology.** 3 credits.
Covers principles of pharmacokinetics, pharmodynamics of selected drug classifications, and nursing responsibilities related to drug administration to individuals throughout life span. Offered by Nursing (p. 289). Limited to two attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 344: Intermediate Nursing Technologies. 1 credit.
Laboratory course to assist students in acquiring therapeutic nursing interventions. Technologies presented are asepsis and wound care, administration of medications including dosage calculations, and management of intravenous therapy. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: NURS 312, 330, 337, 347, 425.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 347: Adult Pathophysiology and Nursing Care. 3 credits.
Explores pathophysiology of a variety of commonly encountered diseases/disorders/illnesses in the adult population. Analyzes appropriate nursing, medical and surgical interventions. Introduces preventive strategies, including patient and family education, that maintain and maximize wellness. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: Acceptance into junior standing.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 348: Maternal-Newborn Physiology, Pathophysiology, and Nursing Care. 2 credits.
Introduces normal and abnormal processes with maternal-infant clients including cultural diversity and vulnerable populations. Focuses on normal physiological, pathophysiological, psychological, sociocultural, risk reduction, and nursing care of these clients. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: Acceptance into junior standing.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 349: Pediatric Pathophysiology and Nursing Care. 2 credits.
Focuses on changing health needs of culturally diverse and vulnerable populations. Includes nursing care, pathophysiological, psychological, sociocultural, and risk-reduction implications of frequently experienced health problems in pediatric population. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: Acceptance into junior standing.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 350: Application of Nursing Care for Individuals and Small Groups. 4 credits.
Includes five weeks of clinical experience in each specialty area, with focus on obstetric and family nursing, pediatric, and psychiatric mental health nursing. Students may also follow selected clients in clinics or home situations. Clinical consists of two full days per week in acute-care agencies. Notes: Open to accelerated second degree students Offered by Nursing (p. 289). Limited to two attempts.

Recommended Corequisite: NURS 319, 353 and 419.

Recommended Prerequisite: Acceptance into junior standing.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 351: Application of Intermediate Nursing Technologies. 1 credit.
Introduces intermediate nursing technologies and provides opportunities to apply these skills in simulated technology lab. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: NURS 305, 309, 310, 334, 419 and 425.

Recommended Corequisite: NURS 350.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 358: Health Promotion and Disease Prevention in Maternal/Infant Nursing. 2 credits.
Provides the student an opportunity to perform nursing care to the maternal/infant client, including those who are culturally diverse and vulnerable, and experiencing physiological, psychological, and social health problems in a variety of settings. Contact the department for meeting dates and times. Notes: Enrollment is controlled. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: NURS 305, 309, 310, 334, 419 and 425.
Recommended Prerequisite: NURS 348. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 359: Health Promotion and Disease Prevention in Pediatric Nursing. 2 credits.
Provides the student an opportunity to perform nursing care to the pediatric client, including those who are culturally diverse and vulnerable, and experiencing physiological, psychological, and social health problems in a variety of settings. Contact department for meeting dates/times. Notes: Enrollment is controlled. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: NURS 349. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 388: Problem-Based Clinical Inquiry. 3 credits.
Focuses on analyzing clinical problems and attempts to resolve issues using critical thinking. Students examine the data in the cases, draw inferences, make deductions, identify assumptions, generate interpretations, evaluate weakness and strengths of arguments, and document their findings. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: NURS 349. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

NURS 410: Nursing Care of Clients with Pathological Conditions. 3 credits.
Encompasses complex health problems of culturally diverse and vulnerable populations throughout the life span. Focuses on nursing care needs and pathophysiological, psychological, and sociocultural implications of complicated health problems. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: Completion of all junior year nursing courses.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 419: Pathophysiological Basis for Nursing Care of Individuals and Small Groups II. 4 credits.
Enrollment restricted to second degree students only. Explores the nursing care of adults and the implications of acute and chronic conditions on the physiological, psychological, and socio-cultural aspects of individuals and families. Analyzes medical and surgical interventions for a variety of commonly encountered diseases/disorders/illnesses. Evaluates primary, secondary and tertiary prevention strategies in order to assist adults in maximizing wellness and introduces patient teaching strategies. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: NURS 305, 309, 310, 319, 334, 425. Note: Open only to Second Degree students.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 425: Comprehensive Health Assessment. 3 credits.
Open only to RNs and LPNs. Introduces systematic health assessment across the life span, and expands that knowledge base to include knowledge and skills necessary to perform comprehensive health assessments with culturally diverse and vulnerable populations. Offered by Nursing (p. 289). Limited to two attempts.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 427: Advanced Technologies for the Accelerated Pathway. 1 credit.
Advanced technology course developing knowledge base related to acquisition of advanced skills in nursing practice. Refinement of assessment skills associated with selected advanced technologies integrated into this laboratory course. Offered by Nursing (p. 289). Limited to two attempts.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
NURS 428: Community Health Clinical for the Accelerated Pathway. 2 credits.
Clinical experience with a focus on collaborative nursing care with individuals, families, and large groups in the community. Emphasis on health promotion and disease prevention for well populations, and community-based care for individuals and families with acute and chronic illness. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: NURS 436, 440.
Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.
Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 429: Preceptorship for the Accelerated Pathway. 3 credits.
Opportunity to deliver collaborative nursing care to culturally diverse and vulnerable populations. Notes: Concentrated clinical experiences available in selected institutional settings. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: NURS 309, 310, 320, 343, 419, 436.
Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.
Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 434: Vulnerable Populations. 3 credits.
Focuses on the care of vulnerable and aging populations. Students will examine health disparities, health literacy, and multicultural issues that impact the delivery of health care. Students will analyze health care policies and health care delivery models that offer potential interventions for the identified needs of these populations. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: RN to BSN students.
Recommended Corequisite: NURS 336.
Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 435: Public Health Preceptorship for Nurses. 3 credits.
Expands nursing students' understanding of population-focused health care. Emphasis will be on prevention principles in primary, secondary, and tertiary care of health problems. Students will be exposed to concepts of community, public health, and health policy affecting culturally diverse and vulnerable populations in a selection of community and public health settings. Offered by Nursing (p. 289). Limited to two attempts.

Schedule Type: Internship
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

NURS 436: Leadership and Management of Health Care. 3 credits.
Introductory course in the leadership and management of health-related organizations. Reviews administrative issues in health-related services with particular emphasis on developing organizational strategies for effective interfacing of medical, nursing, allied health, and administrative staff. Offered by Nursing (p. 289). May be repeated within the degree for a maximum 6 credits. Equivalent to HAP 416.

Recommended Prerequisite: Completion of all junior year nursing courses or admission to RN to BSN program.
Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 440: Community Health and Epidemiology. 3 credits.
Addresses population-focused health care. Emphasis is on primary, secondary, and tertiary prevention of health problems. Concepts of community, public health, and health policy affecting culturally diverse and vulnerable populations are examined. Offered by Nursing (p. 289). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission to the Second degree or RN to BSN program.
Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 451: Advanced Clinical Preceptorship. 5 credits.
Opportunity to provide complex, collaborative nursing care to culturally diverse and vulnerable populations. Notes: Concentrated clinicals available in selected institutional settings. See http:chhs.gmu.edu for information about specific clinical locations. Offered by Nursing (p. 289). Limited to two attempts.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.
Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
NURS 453: Research in Nursing. 3 credits.
Introductory research course designed to present basic concepts and
methods of research. The research process is examined as a foundation
for scholarship. Emphasis on critique and use of current nursing and
research in clinical practice. Offered by Nursing (p. 289). May be repeated
within the degree for a maximum 6 credits.

Specialized Designation: Scholarly Inquiry.

Recommended Prerequisite: STAT 250 or equivalent; acceptance into one
of BSN nursing pathway.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 455: Advanced Technologies in Nursing. 1 credit.
Opportunity to acquire advanced skills in nursing practice. Refinement
of assessment skills associated with selected advanced technologies
integrated into this laboratory course. Offered by Nursing (p. 289).
Limited to two attempts.

Recommended Corequisite: NURS 451.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 457: Introduction to Nursing Informatics. 3 credits.
This introductory course focuses on the use of computer technology in
nursing and healthcare. The student evaluates software applications and
assesses the merit of health-related information on the Internet. Students
will engage in projects aimed at solving patient care problems in a variety
of technologically-enhanced health care settings. Offered by Nursing
(p. 289). Limited to two attempts.

Recommended Prerequisite: Admission to the RN to BSN program.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 465: Examination and Integration of Professional and Health Care
Issues. 3 credits.
Provides students with opportunities to examine issues in health care
through reflection on the natural and behavioral sciences, humanities and
other prerequisite coursework. Selected topics are examined through
reading, writing and discussion. Formal and informal writing on issues
is expected. Students receive written self-evaluation as well as formal
review by peers and faculty members involved in teaching the course.
Offered by Nursing (p. 289). Limited to two attempts. Equivalent to
HAP 465.

Mason Core: Synthesis (p. 142)

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: Required Mason Core courses (including
ENGL 302/ENGH 302).

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 466: Community Health Nursing. 2 credits.
This course addresses population-focused health care. Concepts of
public health, epidemiology, environmental health, extended roles in
nursing and health policy affecting culturally diverse and vulnerable
populations are examined. Offered by Nursing (p. 289). Limited to two
attempts.

Recommended Prerequisite: Completion of all junior year nursing
courses.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 467: Clinical in Community Health Nursing. 2 credits.
Clinical experience with a focus on collaborative nursing care with
individuals, families, and large groups in the community. Emphasis is
on health promotion and disease prevention for well populations and
community-based care for individuals and families with acute chronic
diseases. Offered by Nursing (p. 289). Limited to two attempts.

Recommended Prerequisite: Completion of all junior year nursing
courses.

Registration Restrictions:
Enrollment is limited to students with a major in Nursing.
Enrollment limited to students in a Bach of Science in Nursing degree.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NURS 468: Psychiatric and Mental Health Nursing. 2 credits.
Focuses on the nursing care, pathophysiological and psychological,
social-cultural, and risk reduction implications of health problems in
the area of mental health and psychiatric nursing. Offered by Nursing
(p. 289). Limited to two attempts.
**Recommended Prerequisite:** Completion of all junior year nursing courses.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

Enrollment limited to students in a Bach of Science in Nursing degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 469:** *Clinical in Psychiatric and Mental Health Nursing*. 2 credits.
Clinical experience with a focus on collaborative nursing care with individuals, families, and large groups in the community. Emphasis is on health promotion and disease prevention for well populations and community-based care for individuals and families with acute chronic diseases. Notes: Open to traditional and LPN students only. Offered by Nursing (p. 289). Limited to two attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

Enrollment limited to students in a Bach of Science in Nursing degree.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 488:** *Inquiry-Based Clinical Seminar*. 2 credits.
Students focus on a selected client they have provided care for during their NURS 451 clinical preceptorship. Students examine the data in the case, draw inferences, make deductions, identify assumptions, and generate interpretations regarding the client's problems. The class will participate as a group in the inquiry process to identify strengths and weaknesses of the arguments presented. Offered by Nursing (p. 289). Limited to two attempts.

**Recommended Prerequisite:** Completion of Junior Level Nursing Courses, NURS 410 and NURS 436.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

Enrollment limited to students in a Bach of Science in Nursing degree.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 491:** *Critical Thinking and Analysis of Test Taking Strategies*. 3 credits.
Increases test-taking abilities and improves critical-thinking skills related to nursing situations. Also guides the student to analyze and organize content to assist in decision making about nursing interventions. With faculty supervision, students work independently based on their learning needs. Offered by Nursing (p. 289). Limited to two attempts.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

Enrollment limited to students in a Bach of Science in Nursing degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**NURS 499:** *Independent Study in Nursing*. 1-3 credits.
Provides individual study of a particular problem area in nursing research, theory development, or education under the direction of faculty. Clinical practice may be arranged. Offered by Nursing (p. 289). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor and Assistant Dean for the Undergraduate Program.

**Registration Restrictions:**
Enrollment is limited to students with a major in Nursing.

Washington Consortium level students may not enroll.

Enrollment limited to students in a Bach of Science in Nursing degree.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

Provides overview of all aspects of HIV disease to include retrospective and current concepts and analyses of the epidemic, global, and societal impact, and cutting-edge research. Examines development of therapeutic tools and skills to educate, reduce risks, control infection, and affect care and healing of client, family, and community; and issues of increasing dilemma for health care professionals. Offered by Nursing (p. 289). May not be repeated for credit. Equivalent to GCH 571.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**NURS 605:** *Clinical Nurse Educator Academy*. 3 credits.
Integrates knowledge and skills from clinical practice with new knowledge and skills needed as a clinical nurse educator. Narratives are used to teach essential skills for clinical nurse educators, such as assessment of learning needs, writing of objectives, teaching strategies, clinical simulation, and performance evaluation. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 632: Pathogenesis of Mental Disorders.** 3 credits.
Explores biological correlates of mental illness, including neuronal function, structure and connectivity, and peripheral alterations in biological functioning that contribute to mental disorders across the lifespan. Reviews genetic heritability and specific theories of etiology and diagnostic classifications. Develops interview and differential diagnostic skills. Notes: Required course in Psychiatric Mental Health Nurse Practitioner (PMHNP) or Clinical Nurse Specialist (PMHCNS) concentrations. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Doctor of Nursing Practice program or with permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 633: Individual Psychotherapy.** 3 credits.
Explores major approaches to individual psychotherapy such as psychodynamic, humanistic, interpersonal, behavioral, cognitive, dialectical behavioral, brief, crisis, and multicultural therapies as they relate to advanced nursing practice in mental health. Applications of individual psychotherapies across the lifespan and among diverse populations are critically examined. Notes: Required course in Psychiatric Mental Health Nurse Practitioner (PMHNP) or Clinical Nurse Specialist (PMHCNS) concentrations. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Doctor of Nursing Practice program or with permission of instructor; NURS 632.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 643: Community-Oriented Primary Care.** 3 credits.
Theoretical and clinical application of community-oriented primary care concepts with a focus on health promotion and disease prevention. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to MSN or DNP Program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 648: Aging and Health.** 3 credits.
Provides an overview of normal aging and explores factors that affect health and well being in older adults; demonstrates strategies for maintaining health and managing chronic illness in older adults; examines common misconceptions about aging and healthcare issues; and explores the process of normal aging and the presentation of common health conditions in older adults. Offered by Nursing (p. 289). May not be repeated for credit. Equivalent to HHS 648.

**Recommended Prerequisite:** Admission to MSN or DNP Program or permission of instructor.

**Registarion Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 654: Nursing Administration Financial Management.** 3 credits.
Investigates managerial technologies related to financial planning and control functions of mid-level nurse administrators. Content develops knowledge and skills necessary for effective participation in financial management as related to business plan development, program budget planning, and control. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 660: Seminar in the Ethics of Health Care.** 3 credits.
Examines moral dilemmas in the health care profession, with special emphasis on patients' rights, professionals' obligations to other professionals, and issues of social justice in health care. Methods of moral deliberation based on ethical knowledge and justification are applied to ethical dilemmas in health care. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 665: Theoretical and Ethical Foundations Related to Nursing.** 3 credits.
Selected nursing and related discipline theories which impact nursing practice are analyzed and evaluated with special attention given to ethical aspects of practice and ethical decision-making frameworks. Moral dilemmas in the health care profession, with emphasis on patients' rights, professionals' obligations to other professionals, issues of social justice in health care, and methods of moral deliberation are examined. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 680: Theoretical Foundations Related to Nursing.** 2 credits.
Examination and evaluation of assumptions, concepts, and propositions inherent in selected nursing and related discipline theories. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 685: Advanced Nursing Research Methods.** 3 credits.
Examines principles and methods of research in problem identification, theoretical framework, design, data collection, and analysis. Students develop a nursing research proposal. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the graduate nursing program and a graduate level bivariate statistics course and NURS 680.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 686: Projects in Nursing Research.** 2 credits.
Applies knowledge gained in NURS 790 to implement research proposal designed in NURS 790. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 685.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
NURS 688: Organization of Nursing and Health Care Delivery Systems. 3 credits.
Provides foundational overview of U.S. nursing and health care delivery systems. Surveys key concepts, frameworks, processes, and structures related to health care delivery organizations. Notes: Lecture, discussion. Offered by Nursing (p. 289). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NURS 690: Independent Study in Nursing. 1-3 credits.
Studies in-depth a selected area of nursing theory, research, or practice under direction of faculty. Offered by Nursing (p. 289). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission to the Graduate Nursing Program and permission of Associate Dean for Academic Programs.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Special scale. (p. 84)

700 Level Courses

NURS 704: Nursing Administrative Leadership Academy. 3 credits.
Uses a leadership competency framework to integrate knowledge, skills, values, and best practices of innovative nursing leadership. Lectures, interactive collaborative discussion, written projects, and leadership self-assessment identify and teach the proficiencies specific to the administrative executive role. Offered by Nursing (p. 289). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NURS 713: Decision Making and Pharmacologic Management in Practice. 3 credits.
Analyzes clinical cases using student participation in decision-making formulation. Correlates pathophysiology with symptom manifestations across the lifespan, from prenatal to old age, including death. Evaluates family, medical and social history, physical findings, laboratory data and radiographic studies as they contribute to the decision making process. Examine the theoretical basis for selecting pharmacological and non-pharmacological therapies is explored. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Admission to MSN or DNP Program Nurse Practitioner Concentration

Recommended Corequisite: NURS 769; NURS 761.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NURS 714: Health Assessment in Clinical Practice. 2 credits.
Application of advanced health assessment skills for all body systems and clinical decision making with clients across the lifespan. Students will formulate differential diagnoses and use advanced communication techniques to motivate and change health behaviors. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Admission to MSN or DNP Program or permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NURS 715: Nursing Informatics Inquiry. 3 credits.
This course introduces theoretical and practice components of nursing and healthcare informatics for the graduate level nurse. Computer systems will be analyzed. The systems life cycle will be explored. Health care data standards, classification schemes, and the electronic health record (EHR) will be introduced. Students will evaluate informatics as it applies to patient safety, outcomes measurement, complex decision-making, consumer use, and legal and ethical issues. Offered by Nursing (p. 289). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NURS 716: Principles of Assessment and Evaluation in Nursing Education. 3 credits.
Provides opportunities for the informal assessment of learning; formal
construction, analysis, and evaluation of tests; and the evaluation of standardized tests. Examines the current research and the legal and ethical principles related to assessment and evaluation in nursing education. Offered by Nursing (p. 289). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 720: Practicum in Family Primary Care Nursing I. 4 credits.
Performance of beginning-level nurse practitioner clinical decision-making skills in assessment and management of families and individuals across the life span, with emphasis on health maintenance and health promotion. Seminar, lab, and clinical practicum. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 719, 723, 745, 747, and 756.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading: This course is graded on the Graduate Special scale. (p. 84)

NURS 721: Practicum in Assessment and Management of the Developing Family. 8 credits.
Theoretical and clinical application of health assessment, health maintenance and promotion, anticipatory guidance, diagnosis, and management of common primary health care concerns through clinical decision-making skills focused on childrearing and childbearing families. Seminar, lab, clinical practicum. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 720.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Special scale. (p. 84)

NURS 722: Practicum in Family Primary Care Nursing II. 8 credits.
Students perform advanced clinical decision making in the role of family nurse practitioner. Family primary care problems throughout the life span are assessed and managed, particularly families with elderly and medically underserved members. Seminar, lab, and clinical practicum. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 720 and 721.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 724: Health Assessment Practicum. 1 credit.
Acquisition of advanced health assessment skills for all systems across the lifespan. The student will perform advanced techniques and clinical decision making that is necessary for a comprehensive health assessment in a structured practicum environment. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Admission to MSN or DNP Program or permission of instructor.

Recommended Corequisite: NURS 714.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 725: Hermeneutic Research Methodologies in Health Care. 3 credits.
Uses seminar/discussion for in-depth exploration of interpretive phenomenology, philosophical background for hermeneutics, and hermeneutics as method in context of conducting research in health care. Uses readings from philosophers such as Heidegger, Merleau-Ponty, and Gadamer to situate hermeneutical methodologies in philosophy of science. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Graduate level qualitative research course. Concurrent enrollment is also permitted.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 726: Perspectives in Nursing Education. 3 credits.
Uses seminar approach to provide an overview of nursing education. Provides the foundation for teaching and learning in nursing with emphasis on relevant research. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)
**NURS 727: Application of Nursing Education Principles to Curriculum and Program Development.** 3 credits.

Uses seminar and discussion forums to analyze and apply theoretical principles and teaching and learning strategies in planning, developing, and evaluating nursing programs. Examines the overall creative, planned, and collaborative process of program development and evaluation. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 728: Practicum and Seminar in Nursing Education I.** 3 credits.

Uses seminar/discussion approach and practicum experience to analyze the role and functions of the nurse educator in the academic classroom. Emphasis is on the application of teaching/learning strategies, legal and ethical issues in nursing education, and role development as a nurse educator. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 714, NURS 761, NURS 769.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 729: Practicum and Seminar in Nursing Education II.** 3 credits.

Uses seminar/discussion approach and practicum experience to analyze the role and functions of the nurse educator in the clinical setting. Application of research-based teaching and evaluation strategies in the clinical setting are emphasized. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 714, NURS 761, NURS 769.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 730: Leadership Strategies for the Clinical Nurse Leader.** 2 credits.

Explores aspects of horizontal and vertical leadership central to clinical nurse leader (CNL) role. Emphasizes quality management and improvement, communication processes, evidenced-based practice initiatives in microsystem, and strategies for efficient use of resources while maintaining safe and effective patient care. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 597 and 685. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 733: Introduction to Forensic Science.** 3 credits.

Examines the introductory concepts of forensic science including the various professional roles of forensic scientists and practitioners. This course provides a broad overview of the forensic science profession. Different types of violence, as well as prevention and reduction strategies, are discussed. The forensic professional's role in policy and legal processes are explored. Forensic research is introduced. Professional certification options are explored. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 734: Role of the Sexual Assault Nurse Examiner and Interpersonal Violence.** 3 credits.

Focuses on the incidence and consequences of interpersonal violence across the lifespan. Identifies the role of sexual assault nurse examiner (SANE) as a member of the Sexual Assault Response Team (SART). Examines forensic techniques used to collect evidence. The role of the SANE in the judicial process is explored. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 735: Crime Lab and Crime Scene Investigation.** 3 credits.

Examines the components of the crime lab and the crime scene analysis process. Explores the role of the forensic scientist in crime scene investigation. This course covers the initial crime scene response and initial assessment measures needed to properly collect and handle evidence. Documentation and preservation efforts are reviewed for various types of evidence collected. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 736: Psychological and Legal Aspects of Forensic Science.** 3 credits.
Evaluates the psychological and legal aspects of forensic science. Reviews victimology and the role of the forensic professional when dealing with victimized individuals. This course reviews various types of violence and identifies the assessment criteria needed to pursue prosecution. Examines the legal process and the role of the forensic professional in providing testimony in a court of law. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 737: Investigation of Injury and Death.** 3 credits.
Explores the role of the forensic scientist in death investigation. Examines death, manners of death, and causes of death, along with the death certification process. The role of the medical office professional and autopsy procedures will be reviewed. DNA evidence and the CODIS system will be analyzed. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 738: Family Primary Care I.** 2 credits.
Theoretical application of health assessment, health management/promotion, anticipatory guidance, diagnosis and management of common primary care health care concerns through clinical decision making skills for families with a focus on adults. Lecture, student presentations and seminar. Notes: Required course in Family Nurse Practitioner concentration. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 713, NURS 724, NURS 714, NURS 643.

**Recommended Corequisite:** NURS 742.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 739: Family Primary Care II.** 4 credits.
Theoretical application of health assessment, health maintenance/promotion, anticipatory guidance, diagnosis and management of common primary health care concerns through clinical decision making skills focused on childbearing and childbearing families. Seminar, student presentations and lectures. Notes: Required course in Family Nurse Practitioner concentration. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 738, NURS 742.

**Recommended Corequisite:** NURS 744

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 740: Clinical Nurse Specialist Internship.** 3 credits.
A continuation of clinical application of theory from NURS 775 to a selected clinical specialty with attention to the health illness continuum of individuals, families, and community. Offered by Nursing (p. 289). May be repeated within the term for a maximum 6 credits.

**Recommended Corequisite:** Contact the department for meeting dates and times.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 741: Family Primary Care III.** 3 credits.
Theoretical application of assessment, diagnosis and management of primary health care problems which will enable the nurse practitioner student to assume increased responsibility in the delivery of primary care to families and individuals across the life span. Special emphasis is given to the primary care needs of families with elderly and medically underserved members. Seminar, student presentations and lectures. Notes: Required course in Family Nurse Practitioner concentration. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 739, NURS 744.

**Recommended Corequisite:** NURS 749.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 742: Family Primary Care Practicum I.** 2 credits.
Demonstrates the ability to function at a beginning level in the role of the nurse practitioner. Performance of advanced skills in assessment and the development of plans for health maintenance and promotion for families
with a focus on the adult. Clinical practicum, lab and seminar. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 713, NURS 724, NURS 714, NURS 643.

**Recommended Corequisite:** NURS 738.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 743:** Clinical Psychopharmacology. 3 credits.
Introduce psychotropic medications, including neurochemical basis, mode of action and clinical application. Discuss principles of pharmacological medication selection and use based on clinical indicators. Notes: Required course in Psychiatric Mental Health Nurse Practitioner (PMHN) or Clinical Nurse Specialist (PMHCNS) concentrations. Admission to the Doctor of Nursing Practice program or with permission of instructor. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 746.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 744:** Family Primary Care Practicum II. 4 credits.
Clinical application of health assessment, health maintenance/ promotion, anticipatory guidance, diagnosis and management of common primary health care concerns through clinical decision making skills focused on childrearing and childbearing families. Clinical practicum, seminar, lab. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 738, NURS 742.

**Recommended Corequisite:** NURS 739.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 746:** Practicum in Adult Primary Care Nursing I. 6 credits.
Demonstration of the ability to function at a beginning level in the role of the nurse practitioner. Performance of advanced skills in assessment and the development of plans for health maintenance and promotion for adults. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 719, 723, 745, 747, and 756.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**NURS 748:** Practicum in Adult Primary Care Nursing II. 8 credits.
Enables nurse practitioner student to assume increased responsibility in the delivery of primary care to adults. Special emphasis on primary care needs of elderly and medically underserved groups. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 746.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**NURS 749:** Family Primary Care Practicum III. 4 credits.
This practicum enables the nurse practitioner student to assume increased responsibility in the delivery of primary care to families. Family primary care problems across the life span are assessed and managed, particularly families with elderly and medically underserved members. Practicum, clinical lab and seminar. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 739, NURS 744.

**Recommended Corequisite:** NURS 741.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 757:** Nursing Research and Biostatistics I. 3 credits.
Provides a broad framework for understanding and applying commonly used research designs and data analysis techniques in nursing and health care research. Exposed to an overview of qualitative and quantitative research methods integrated with appropriate data analyses techniques. Univariate and bivariate statistical techniques will be used to address research questions or hypothesize as appropriate. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the graduate nursing program, and an undergraduate statistics course.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
NURS 758: Nursing Research and Biostatistics II. 3 credits.
Empirically address practice related problems using complex bivariate and multivariate statistical analysis. Using an established data set as a basis for simulation of the research process, student will identify clinical problems in research traditions to provide evidence for nursing practice. Emphasis is on evaluating the quality of research for its strength as evidence for nursing practice. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 757.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

NURS 761: Pharmacotherapeutics. 3 credits.
Describes the pharmacologic principles and pharmacodynamic actions for all broad categories of agents. Distinguishes between the major drug classes by the pharmacologic properties of drugs on the cellular, organ and whole organism level. Study of indications and contraindications of appropriate therapeutic entities for health deviations based on a thorough knowledge of drugs and their fate in the human body. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Admission to MSN or DNP Program or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

NURS 763: Administrative Theory in Nursing. 3 credits.
Uses administrative theory and management principles and processes as related to roles and functions of the nurse in management in health-related agencies. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Admission to Graduate Nursing Program or master's degree. NURS 680 and Management/Organizational Theory (concurrent enrollment is also permitted).

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

NURS 765: Practicum in Nursing Administration I. 3 credits.
Applies administrative theory and management principles and processes in a selected health-related agency. Roles and functions of the nurse in management are explored. Notes: Lab arranged. One hour of seminar and eight hours of practicum weekly. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Admission to Graduate Nursing Program, NURS 680. NURS 763 (concurrent enrollment is also permitted).

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

NURS 766: Administrative Strategies in Nursing. 3 credits.
Explores roles and functions of the nurse in management as the nurse manager develops patterns of nursing care, articulating nursing education, and nursing service. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 763 and 765.

Recommended Corequisite: NURS 768.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

NURS 768: Practicum in Nursing Administration II. 3 credits.
Implements and integrates roles and functions of the nurse in management. Emphasizes using appropriate management principles and processes in a selected health-related agency. Notes: Lab arranged. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 763, NURS 765, NURS 766 (concurrent enrollment also permitted for 766).

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

NURS 769: Physiology and Pathophysiology in Advanced Practice. 3 credits.
Analyze health deviations in the physiologic and pathophysiologic aspects of systems functioning across the life span. Students assimilate the process of systematic assessment and management of health...
deviations foundational for making clinical decisions. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to MSN or DNP or permission of instructor.

**Recommended Corequisite:** NURS 713.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 773: Clinical Applications of Theory in Advanced Clinical Nursing.** 3 credits.

Foundational theory relevant to the emerging roles in advanced clinical nursing, focusing on therapeutic nursing interventions in a variety of clinical specialties, with attention to health-illness continuum of individuals, families, and communities. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Graduate Nursing Program. NURS 550, 680 (Concurrent enrollment is also permitted for either course).

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 775: Advanced Specialty Practice I.** 3 credits.

Focuses on clinical application of theory from NURS 773 to a selected clinical specialty with attention to the health illness continuum of individuals, families, and communities. Notes: One hour of seminar and eight hours of practicum. Lab meets every other week. Offered by Nursing (p. 289). May be repeated within the term for a maximum 17 credits.

**Recommended Prerequisite:** NURS 665.

**Recommended Corequisite:** NURS 768.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 777: Development of Advanced Practice Nursing Role.** 3 credits.

Expansion of selected content included in NURS 773 for the delivery of advanced nursing care in a variety of settings. Emphasizes development and evaluation of the advanced practice nursing role in complex health care systems. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 773.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 778: Advanced Specialty Practice II.** 3 credits.

Applies concepts of the advanced practice nursing role from NURS 776 to a selected clinical specialty. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 665.

**Recommended Corequisite:** NURS 773. Electronic strategies will be used and course will meet every other week.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 782: Psychiatric Nurse Practitioner Practicum I.** 4 credits.

Develops clinical competence in comprehensive assessment, diagnosis, and management of mental health problems and psychiatric and co-morbid medical disorders, referring when appropriate. Demonstrates effective clinical interviewing skills. Applies principles of pharmacology including complementary and alternative therapies. Develops culturally sensitive plans for health maintenance, promotion and treatment. Evaluates outcomes of treatment. Manages psychiatric emergencies. Advocates for patients and families. Notes: Five clinical hours per week are required for each credit. Required course in the Family Psychiatric Mental Health Nurse Practitioner (FPMHNP) concentration. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the Doctor of Nursing Practice program or Psychiatric Mental Health Nurse Practitioner Certificate. NURS 632, NURS 633, NURS 634 and NURS 743.

**Recommended Corequisite:** NURS 783.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 783: Psychiatric Nurse Practitioner Seminar I.** 2 credits.

Analyzes the professional role of family psychiatric mental health nurse practitioners. Students share assessment, diagnostic, intervention, evaluation, teaching-coaching, cultural competence, and therapeutic relationship development techniques through case studies from their practica. Management of client cases are evaluated and discussed.
Recommended Prerequisite: Admission to the Doctor of Nursing Practice program or Psychiatric Mental Health Nurse Practitioner Certificate. NURS 632, NURS 633, NURS 634 and NURS 743.

Recommended Corequisite: NURS 782.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 784: Psychiatric Nurse Practitioner Practicum II. 5 credits. Builds on Family Psychiatric Nurse Practitioner Practicum I, improving diagnostic and clinical reasoning ability and competence in assessment, diagnosis, and management of psychiatric disorders. Enables the student to assume increased responsibility in the delivery of comprehensive mental health care. Participates in professional and community organizations to promote the health of patients while enhancing the role of practitioner. Notes: Five clinical hours per week are required for each credit. Required course in Family Psychiatric Mental Health Nurse Practitioner (FPMHNP) concentration. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Admission to the Doctor of Nursing Practice program or Psychiatric Mental Health Nurse Practitioner Certificate. NURS 782.

Recommended Corequisite: NURS 785.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 785: Psychiatric Nurse Practitioner Seminar II. 2 credits. Discusses role transition and development of advanced practice psychiatric mental health nurses. Regulatory and economic policies affecting advanced psychiatric mental health nursing practice in the evolving health care system are discussed. Students demonstrate competence in comprehensive management of acute and chronic psychiatric disorders through case presentations from their practice. Performs a comprehensive assessment of the mental health needs of a community. Notes: Required course in the Family Psychiatric Mental Health Nurse Practitioner (FPMHNP) concentration. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Admission to Doctor of Nursing Practice program or Psychiatric Mental Health Nurse Practitioner Certificate. NURS 783.

Recommended Corequisite: NURS 784.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 786: Adult Gerontology Primary Care Practicum I. 2 credits. Application of health assessment, health maintenance/promotion, anticipatory guidance, genetics/genomics, diagnosis and management of common primary health care concerns, including women's health issues. Focus is on care of adolescents and adults across the life. Clinical Practicum, lab and seminar. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 713, NURS 714, NURS 724, NURS 643.

Recommended Corequisite: NURS 787.

Registration Restrictions: Enrollment is limited to students with a concentration in Adult Ger. Nurse Pract. PC.

Enrollment is limited to Graduate level students.

Schedule Type: Internship

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 787: Adult Gerontology Primary Care I. 2 credits. Theoretical application of health assessment, health maintenance/ promotion, anticipatory guidance, diagnosis and management of common primary health care concerns, including women's health, through clinical decision making skills in adolescents, adults and older adults. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 713, NURS 714, NURS 724, NURS 643.

Recommended Corequisite: NURS 786.

Registration Restrictions: Enrollment is limited to students with a concentration in Adult Ger. Nurse Pract. PC.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 788: Adult Gerontology Primary Care Practicum II. 4 credits. Demonstration of the ability to function at a beginning level in the role of the nurse practitioner. Performance of advanced skills in assessment and the development of plans for health maintenance and promotion for adolescents, adults and older adults. Clinical practicum, lab and seminar. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 786, NURS 787.

Recommended Corequisite: NURS 789.
**Registration Restrictions:**
Enrollment is limited to students with a concentration in Adult Ger. Nurse Pract. PC.

Enrollment is limited to Graduate level students.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 789:** Adult Gerontology Primary Care II. 3 credits.
This course consists of the application of health assessment, health management/promotion, genetics and genomics, anticipatory guidance, diagnosis and management of common primary care health care concerns of the adolescent, adult and older adult through clinical decision making skills. Lecture, student presentations and seminar. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 786, NURS 787.

**Recommended Corequisite:** NURS 788.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 804:** Advanced Quantitative Data Analysis for Healthcare Research I. 3 credits.
Covers principles and methods of statistical data analysis and inference. Emphasizes the use and application of various data analysis techniques and their assumptions. Examines factorial ANOVA, factorial ANCOVA, repeated measures ANOVA, ANOVA and ANCOVA via regression approaches, and linear and logistic regression analysis. Students apply statistical techniques in analyzing health-related data sets. Offered by Nursing (p. 289). May not be repeated for credit. Equivalent to GCH 804.

**Recommended Prerequisite:** A graduate-level statistics course (by instructor approval).

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 805:** Advanced Quantitative Data Analysis for Healthcare Research II. 3 credits.
Builds upon principles and methods of statistical analysis and inference. Emphsizes the use and application of various data analysis techniques and their assumptions. Examines multivariate analysis of variance (MANOVA), multivariate analysis of covariance (MANCOVA), multiple regression, and logistic regression, and factor analysis. Students apply statistical techniques in analyzing health-related data sets. Offered by Nursing (p. 289). May not be repeated for credit. Equivalent to GCH 805.

**Recommended Prerequisite:** GCH/NURS 804 or an equivalent statistics course (by instructor approval).

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 806:** Advanced Multivariate Statistics and Data Analysis for Health Care Research. 3 credits.
Examines canonical correlation, discriminant analysis, factor analysis, and causal analysis (path models and structural equation modeling). Students analyze and interpret data using these statistical techniques. Offered by Nursing (p. 289). May not be repeated for credit. Equivalent to GCH 806.

**Recommended Prerequisite:** GCH 805 or NURS 805, or equivalent multivariate statistics course.

**Registration Restrictions:**
Enrollment is limited to students with a concentration in Adult Ger. Nurse Pract. PC.

Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 807:** Advanced Multivariate Statistics and Data Analysis for Health Care Research. 3 credits.
Examines canonical correlation, discriminant analysis, factor analysis, and causal analysis (path models and structural equation modeling). Students analyze and interpret data using these statistical techniques. Offered by Nursing (p. 289). May not be repeated for credit. Equivalent to GCH 806.

**Recommended Prerequisite:** GCH 805 or NURS 805, or equivalent multivariate statistics course.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NURS 808:** Translating Nursing and Health Care Research into Evidence-Based Policy. 3 credits.
This course prepares students to assess the policy dimensions of nursing issues in clinical practice, education, and research environments and translate nursing research into policy. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**NURS 810:** Evaluation Research in Nursing Education. 3 credits.
Uses seminar/discussion to analyze and apply theoretical models for implementing evaluation research in nursing education. Examines quantitative approaches for evaluating process and outcomes of domestic or international nursing education programs, including role of accreditation guidelines. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 920, NURS 930. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**NURS 811:** Nurse as Educator and Scholar. 2 credits.
Uses seminar/discussion to explore role of nurse educator in meeting research and scholarship expectations of college, university, or service setting. Addresses approaches to scholarship in relation to types of evidence appropriate for various scholarly expectations in academic setting. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 920; NURS 930.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**NURS 814:** Theory and Design in Health Science. 3 credits.
Analyze existing theoretical and conceptual frameworks in nursing and other biological, social, and behavioral sciences. Enables the doctoral student to critique, use, test, integrate, translate, and develop conceptual frameworks to guide scientific inquiry in a focused area of research interest. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Master's degree in nursing, social work, or health-related discipline.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**NURS 820:** Human Genetics Concepts for Health Care. 4 credits.
The study of human genetics, principles of heredity, and disease risks. Offered by Nursing (p. 289). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**NURS 860:** Measurement Theories in Healthcare Research. 3 credits.
Synthesize measurement theories and principles as a foundation for the development and evaluation of instruments for use in healthcare research. The course includes review of statistical techniques required for understanding measurement theory, reliability, validity, responsiveness, item analysis, and instrument construction. Students design, construct, administer, analyze, and evaluate an original instrument and evaluate an existing instrument in healthcare research. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** NURS 805 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**NURS 870:** Nursing and Health Care Administration I. 3 credits.
Examines the theoretical basis of scholarship and practice in leadership and management of health systems and nursing organizations. Includes discovery of concepts and forces influencing the organization and performance of health care systems. Offered by Nursing (p. 289). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the PhD or DNP program.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**NURS 871:** Nursing and Health Care Administration II. 2 credits.
Analyzes and applies selected concepts related to nursing and health system leaders and managers as well as factors influencing the performance of health systems and organizations. Offered by Nursing (p. 289). May not be repeated for credit.
Offered by Nursing analyzed within the scholarship of discovery, integration, and application. placed on the development of strategies to ensure quality improvement. mixed-methods designs will be introduced. Qualitative research will be current programs in the context of evidence-based practice. Emphasis is phenomenology, grounded theory, and ethnography. Description and new model of care, translation of evidence into practice, or evaluation of design, data collection, data analysis, and interpretation associated with processes and outcomes, evaluate research studies and systematic reviews, and develop a proposal to address issues related to the design of current programs in the context of evidence-based practice. Emphasis is placed on the development of strategies to ensure quality improvement. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: Completion of all coursework, except NURS 998.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 874: Internship in Health Care Administration/Policy/Education. 4 credits. Internship experience of at least 126 hours with leader in field of nursing, health care administration, policy, or education. Participatory activities require integration and application of principles, frameworks, and science related to executive preceptor role. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 757 and NURS 758.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Internship

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 883: Evidence-Based Practice in Nursing and Healthcare. 4 credits. Building on knowledge of research methodologies and personal expertise, student will identify practice and system problems, analyze the variations of processes and outcomes, evaluate research studies and systematic reviews, and develop a proposal to address issues related to the design of new model of care, translation of evidence into practice, or evaluation of current programs in the context of evidence-based practice. Emphasis is placed on the development of strategies to ensure quality improvement. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 804.

Registration Restrictions: Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 920: Qualitative Research in Nursing and Health Care. 3 credits. Provides the philosophical assumptions underlying qualitative research in nursing and health care. Students will examine the principles of study design, data collection, data analysis, and interpretation associated with phenomenology, grounded theory, and ethnography. Description and mixed-methods designs will be introduced. Qualitative research will be analyzed within the scholarship of discovery, integration, and application. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 804.

Registration Restrictions: Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 921: Clinical Practicum I. 1-10 credits. Students, in consultation with their academic advisor, complete supervised practicum hours to meet both the post-baccalaureate and post-masters DNP practicum requirement. A practicum course that prepares students to perform clinical decision making in their role as advance practice nurses in individualized specialty areas. They will work with advanced practice nurse preceptors to develop clinical expertise, and to develop an understanding of leadership roles in the clinical setting that can enhance the system of health care delivery. One credit hour of seminar with the remaining hours in clinical practice. Offered by Nursing (p. 289). May be repeated within the degree for a maximum 20 credits.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Internship

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 922: Clinical Practicum II. 1-10 credits. Students, in consultation with their academic advisor, complete supervised practicum hours to meet both the post-baccalaureate and post-masters DNP practicum requirement. A practicum course that continues to prepare students to practice in an expanded, advanced clinical practice role. Students will learn to become change agents in the clinical setting with a focus on health care delivery systems. The student will apply advanced health assessment skills and clinical decision making in an area of specialty practice, correlating pathophysiology with symptom manifestations. One credit hour of seminar with the remaining hours in clinical practice. Offered by Nursing (p. 289). May be repeated within the degree for a maximum 20 credits.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Internship

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 930: Quantitative Methods in Nursing and Health Care. 3 credits. Guides the student in applying principles in the design of an innovative quantitative research study to address a significant problem in nursing and/or health care. Offered by Nursing (p. 289). May not be repeated for credit.

Recommended Prerequisite: NURS 805.

Registration Restrictions: Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 940: Independent Study for the Doctoral Student. 1-6 credits. Studies in depth a selected area of nursing theory, research, or practice under direction of faculty. Offered by Nursing (p. 289). May not be repeated for credit.
Recommended Prerequisite: Admission to a doctoral nursing program. Individualized section form required.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Independent Study

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 950: Special Topics in Nursing. 3 credits. Presents selected topics analyzing specialized areas in nursing. Content varies. Lecture, seminar, laboratory, workshop. Offered by Nursing (p. 289). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 980: Practice Inquiry I. 4 credits. Synthesize the literature related to the problem. Analyze the environmental factors impacting the problem. Identify the standard of care related to the clinical problem. Assess the quality of evidence that supports the standard of care. Develop a proposal that will impact the delivery of care in the identified area of practice inquiry. Develop the appropriate outcome measures to address the specific practice inquiry area. Offered by Nursing (p. 289). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: Completion of DNP core courses.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

NURS 981: Practice Inquiry II. 4 credits. Implement the proposal developed in Practice Inquiry I. Maintain an ongoing process analysis of the project. Collect data. Analyze the findings from the practice inquiry. Disseminate the findings from the practice inquiry in a scholarly manner. Offered by Nursing (p. 289). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: NURS 980.

Registration Restrictions: Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

Recommended Prerequisite: NURS 998.

Registration Restrictions: Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Dissertation

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

NURS 999: Doctoral Dissertation. 1-9 credits. Provides continued faculty assistance on an individual basis toward completion of approved dissertation. Note: Students must contact the department at (703) 993-1961 to receive approval and a CRN to register via Patriot Web. Offered by Nursing (p. 289). May be repeated within the degree.

Recommended Prerequisite: NURS 998.

Registration Restrictions: Enrollment is limited to students with a class of Advanced to Candidacy.

Schedule Type: Seminar

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

Nutrition and Food Studies (NUTR)

200 Level Courses

NUTR 295: Introduction to Nutrition. 3 credits. Introduces students to nutrition as a scientific discipline, providing a working knowledge of basic nutrition including the sources and functions of the nutrients, the components of a healthy diet, and the relationship between diet and overall health. Students will learn about the processes of digestion, absorption, and metabolism of nutrients, and several ‘hot topics’ in the field of nutrition. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Mason Core: Natural Science Overview (p. 142)

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

NUTR 312: Experimental Foods. 3 credits. Introduces the composition and structure of food through exploration of chemical, physical, nutritional, sensory and safety aspects, with emphasis on how these aspects relate to food preparation methods. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Corequisite: NUTR 313.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
NUTR 313: Experimental Foods Lab. 1 credit.
Explores the chemical, physical, nutritional, sensory, and safety aspects of food through hands-on food preparation labs. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Corequisite: NUTR 312.

Schedule Type: Laboratory
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 315: Fundamentals of Cooking. 3 credits.
Exposes students to the fundamental concepts of food and its preparation. Students will learn and experience culinary basics, including knife skills, mother sauces, basic cooking techniques, function of ingredients, food safety, and chemical and physical transformation of food during cooking and storage. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 318: Global Nutrition and Food Security. 3 credits.
An overview of the major concepts and perspectives of food security at the local, regional, and global levels. Explore and apply the definitions, means of measurement, and policy implications of food security from a multidisciplinary approach. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 326: Food Systems. 3 credits.
Taking a systems approach, this course provides an overview of the food system from production through consumption and waste. Students will consider the complexity of issues confronting the creation of just and sustainable food systems and access to healthy food for all. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 330: Food Composition. 3 credits.
Explores the nutritional, functional, structural, and undesirable components in food, with a primary focus on the selection and use of food composition tables to obtain this data. Factors impacting food composition will be discussed, including agricultural, manufacturing, and biotechnologies. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295, NUTR 312, NUTR 313, CHEM 313

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 383: Taste and Place. 3 credits.
Examines how dietary patterns have developed and evolved in specific geographic locations. Students will analyze the role of geography, history, politics, culture and taste as essential elements in distinctive local, regional, and national foodways. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

NUTR 408: Food Security. 3 credits.
Examines the human health aspects of food security at the local, regional, and global levels. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 410: Introduction to Food Safety and Defense. 3 credits.
Examines the critical roles that food safety and food defense have on the food supply in the US and globally. Students will explore common foodborne illnesses, their causes and their means of control from both a scientific and policy perspective. Students also will gain an understanding of basic food safety practices in both commercial food production and in home food preparation. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 414: Food, Culture, Nutrition and the Mediterranean Diet. 6 credits.
Combines an understanding of foodways, culture, and sustainability with the Mediterranean diet pattern and its role in public health through classroom and experimental learning. History, traditions and contemporary issues will be explored to understand the place of Mediterranean foodways. Excursions to several cities in a Mediterranean region will explore distinctive regional specialties including tours of wineries, farms, food factories and producers as well as cooking classes with local gourmet chefs and visits to food markets. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 420: Strategies for Nutrition Education. 3 credits.
Examines methods and techniques for educating individuals about nutrition. Addresses nutrition education issues from variety of populations with respect to culture, age, religion, and specific disease states. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295 or permission of instructor.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 421: Community Nutrition. 3 credits.
Focuses on nutrition and health problems of specific community settings, and examines practices of nutrition services in various communities. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 422: Nutrition throughout the Life Cycle. 3 credits.
Focuses on nutrient needs and food habits throughout life cycle. Emphasizes nutrient needs prior, during, and after pregnancy, and nutritional requirements of infants, children, adolescents, adults, and elderly. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 423: Nutrition and Chronic Illnesses. 3 credits.
Examines nutrient needs related to specific chronic illnesses, including cardiovascular disease, cancer, obesity, and diabetes. Focuses on principles of nutritional therapy and prevention. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 430: Introduction to Wine and Beer. 3 credits.
Takes a multidisciplinary approach to understanding alcohol across time and space. Students will learn about alcohol production as well as the social and cultural dimensions of alcohol in a variety of cultures. Topics that might be covered in class include prohibition and neoprohibition, the health effects of alcohol, craft versus industrial production, among others. Students must be 21 to enroll. Notes: Fees apply. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 435: Urban Agriculture. 3 credits.
Introduces students to the opportunities, limits, and barriers of growing food in cities. Utilizing case studies from the area and around the globe, students will study the social, historical, political, environmental, and practical aspects urban agriculture. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 440: Nutrition Policy. 3 credits.
Explores US and international food and nutrition policies and programs. It is intended for undergraduate students who are interested in an in-depth analysis of policy related approaches to improving nutritional status within populations in the US and around the world. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 442: Advanced Nutrition I. 3 credits.
Explores the biological roles of the macronutrients through application of advanced nutritional concepts relating to digestion, absorption and metabolism of carbohydrates, proteins and lipids. Practical implications in the diet are emphasized. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295 and a biochemistry class

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 444: Advanced Nutrition II. 3 credits.
Examines the biological roles of the micronutrients through application of advanced nutritional concepts relating to digestion, absorption, transport and metabolism of vitamins and minerals. Practical implications in the diet are emphasized. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 442

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 451: Nutrition Assessment. 3 credits.
Introduces students to methods and tools used in assessing individuals’ nutritional status. Methods of interpretation of nutrition-related information will be examined. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.

Recommended Prerequisite: NUTR 295 or equivalent course.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 466: Nutrition and Weight Management: Obesity, Anorexia, and Bulimia. 3 credits.
Focuses on the physiological, emotional, genetic, and societal and cultural factors that influence the relationship between eating and weight regulation. Offered by Nutrition and Food Studies (p. 270). Limited to three attempts.
Recommended Prerequisite: NUTR 295, GCH 332 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

NUTR 500 Level Courses

NUTR 515: Fundamentals of Cooking. 3 credits.
Introduces students to the fundamental concepts of food and its preparation. The biological components, the chemical transformation, and sensorial properties of food are explored throughout the course. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:

NUTR 522: Nutrition Across the Lifespan. 3 credits.
Explores the nutrient needs and food habits across the lifespan. Focuses on nutrition policies, programs, and interventions across the lifespan. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Recommended Prerequisite: NUTR 295.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:

NUTR 530: Introduction to Wine and Beer. 3 credits.
Takes a multidisciplinary approach to understanding alcohol across time and space. Students will learn about alcohol production as well as the social and cultural dimensions of alcohol in a variety of cultures. Topics that might be covered in class include prohibition and neoprohibition, the health effects of alcohol, craft versus industrial production, among others. Students must be 21 to enroll. Notes: Fees apply. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:

NUTR 535: Urban Agriculture. 3 credits.
Introduces students to the opportunities, limits, and barriers of growing food in cities. Utilizing case studies from the area and around the globe, students will study the social, historical, political, environmental, and practical aspects urban agriculture. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Graduate, Non-Degree, Senior Plus or Senior.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 566: Nutrition and Weight Management.** 3 credits.
Focuses on the physiological, emotional, genetic, and societal/cultural factors that influence the relationship between eating and weight regulation. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Recommended Prerequisite:** GCH 295 or other introductory nutrition course.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 570: Food Science for Nutritionists.** 3 credits.
Explores selected topics in food science and technology as relevant to the field of nutrition. Coverage includes various food processing and preservation methods, ingredient functionality, nutrient analysis, sensory analysis, food safety considerations, toxicology, and biotechnology. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Recommended Prerequisite:** NUTR 295 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 583: Food and Culture.** 3 credits.
Examines food and eating behaviors, diet, and nutrition from a cross-cultural perspective. Focuses on how and why people choose what to eat, range and significance of cross-cultural variability in diet, how diets have changed, and health and social implications of those changes. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 594: Special Topics in Nutrition and Food Studies.** 3 credits.
In-depth study of contemporary areas of nutrition and food studies. Topics vary each semester. Students may take up to 6 credits of NUTR 594 within their degree program. Offered by Nutrition and Food Studies (p. 270). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Graduate level course.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**NUTR 608: Perspectives on Food Security.** 3 credits.
Overview of the major concepts and perspectives of food security. Explores and applies the definitions, means of measurement, and policy implications of food security from a multidisciplinary approach. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 610: Food Safety and Defense.** 3 credits.
Focuses on the possible sources of unintentional and intentional contamination of the food supply and on the roles and guiding policies of the various levels of government and the food industry, as well as individual responsibility in managing risk to ensure a safe food supply. Notes: Fees may apply. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 611: Food and Nutrition Security Policy.** 3 credits.
In-depth analysis of food security and nutrition policies and programs aimed at reducing hunger and malnutrition among individuals and populations. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 620: Nutrition Education.** 3 credits.
An overview of current nutrition education research, theories, programs, and policies. Explores how nutrition education can influence dietary behavior and food choice. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 626: Food Systems.** 3 credits.
Survey of issues surrounding food production from a processing perspective. Students will gain an understanding of various forms of food processing and the issues that surround industrial food systems. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 630: Global Nutrition.** 3 credits.
Directed at students from a variety of disciplines, this course examines what malnutrition is and how it occurs by looking at several situations from around the world. It looks at the impact of nutrition on a society and community and examines the benefits of a well-nourished population.

**Recommended Prerequisite:** NUTR 295 and undergraduate biochemistry course.

**Recommended Prerequisite:** NUTR 295 and undergraduate biochemistry equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 642: Macronutrients.** 3 credits.
Expands understanding of the biological roles of the macronutrients through application of advanced nutritional concepts relating to digestion, absorption and metabolism of carbohydrates, proteins, and lipids. Practical implications in the diet are emphasized, and particular attention is placed on the etiology and prevention of macronutrient-related diseases, including atherosclerosis, diabetes, and metabolic syndrome. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Recommended Prerequisite:** NUTR 295 and undergraduate biochemistry course.

**Recommended Prerequisite:** NUTR 295 and undergraduate biochemistry equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**NUTR 644: Micronutrients.** 3 credits.
Expands understanding of the biological roles of the micronutrients through application of advanced nutritional concepts relating to digestion, absorption, transport, and metabolism of vitamins and minerals. Practical implications in the diet are emphasized, with particular attention on the etiology and prevention of micronutrient-related diseases, including nutritional anemia and osteoporosis. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

**Recommended Prerequisite:** NUTR 295 and undergraduate biochemistry equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture
NUTR 651: Nutrition Assessment, Monitoring and Surveillance. 3 credits. Introduces students to methods and tools used in assessing nutritional status and, the practice and application of these to monitoring among individuals and population groups. Methods of interpretation of nutrition-related information will be examined. Will include off campus practice. Notes: Will include off campus practice Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Recommended Prerequisite: NUTR 630 or an introductory nutrition course.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NUTR 670: Nutrition Research Methods. 3 credits. Introduction to the fundamentals of research design and data collection methods. Students will learn about quantitative, qualitative, mixed method, participatory approaches, and ethical issues in nutrition-related research and evaluation. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Recommended Prerequisite: GCH 601 or GCH 712, NUTR 651 OR equivalent courses.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NUTR 675: Nutrition Program Development, Interventions and Assessments. 3 credits. Provides students with the knowledge and skills for planning, developing and evaluation of community nutrition programs and interventions. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Recommended Prerequisite: NUTR 670, GCH 601 and NUTR 651 OR equivalent courses.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NUTR 788: Pre-Practicum Seminar. 0 credits. Provides guidance and preparation for engaging in the capstone practicum. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Recommended Prerequisite: NUTR 788.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

NUTR 790: Nutrition Practicum. 3 credits. An in-depth supervised experience in an approved nutrition-related organization. Includes a project related to a nutrition issue within the organization. Offered by Nutrition and Food Studies (p. 270). May not be repeated for credit.

Recommended Prerequisite: NUTR 788.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)
NUTR 799: Thesis Research. 1-6 credits.
Thesis research and writing. Offered by Nutrition and Food Studies (p. 270). May be repeated within the degree.

Recommended Prerequisite: Core courses in MS program.

Registration Restrictions:
Enrollment is limited to students with the Honors College (Business), C U113 or HNRT U225.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Operations Management (OM)

200 Level Courses

OM 211: Honors Statistical Analysis for Management. 4 credits.
Introduces the application of statistical methods to support quantitative decision analysis for resolving business problems. Topical coverage includes descriptive statistics, probability, random variables, probability distributions, sampling and sampling distributions, estimation, hypothesis testing, and linear regression (both simple and multiple).
Requires extensive use of case studies to integrate, synthesize and extend the concepts presented in order to foster a "learning by doing" approach that develops and promotes critical thinking abilities. Active class discussions via individual and/or group presentations of case assignments is an important learning activity. Extensive use of computer software for statistical modeling, problem solving, and analysis of case studies is a significant component of this course. Offered by School of Business (p. 888). Limited to three attempts.

Recommended Prerequisite: Cumulative GPA of 3.5 or higher.

Registration Restrictions:
Required Prerequisites: MATH 108<sup>B</sup>, 113<sup>B</sup>, HNRT 125<sup>C</sup>, 225<sup>C</sup>, MATH U108, U113 or HNRT U225.
<sup>C</sup> Requires minimum grade of C.

Enrollment limited to students with the Honors College (Business), , Honors College (STEM). or Honors College. attributes.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OM 320: Supply Chain Management in a Global Economy. 3 credits.
Design, development, and management of supply chain systems, including production and inventory management, distribution channels, and information systems that support them. Emphasizes impact of e-business on companies and industries, including Internet's impact on the way goods and services flow through value chain from providers to customers. Offered by School of Business (p. 888). Limited to three attempts. Equivalent to OSCM 320.

Registration Restrictions:
Required Prerequisites: (DESC 301<sup>C</sup>, L301, OM 301<sup>C</sup>, L301 or 303<sup>C</sup>),
<sup>C</sup> Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OM 352: Management Science. 3 credits.
Introduces operation research and management sciences (OR/MS) techniques for supporting business management decisions. Specific mathematical programming and probabilistic topics include linear programming, integer programming, goal programming, network flow models, decision analysis, game theory, queuing models, and Monte Carlo simulation. Offered by School of Business (p. 888). Limited to two attempts. Equivalent to OSCM 352.

Registration Restrictions:
Required Prerequisites: (DESC 301<sup>C</sup>, L301, OM 301<sup>C</sup> or L301) or OM 303<sup>C</sup> or L303.
<sup>C</sup> Requires minimum grade of C.

Students with a class of Freshman may not enroll.

Non-Degree level students may not enroll.

Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

OM 435: Business Process Analysis and Simulation. 3 credits.
Introduces concepts and tools used in designing, modeling, analyzing, and improving business processes. Various business process analysis and simulation methods, such as process mapping/flowcharting, process flow and capacity analysis, service process design, theory of constraints, process modeling and simulation, and business process reengineering are discussed. Introduces methods and analytical tools such as queue theory and computer simulation used to design, model, analyze, and improve business processes. Discusses methods such as process mapping/diagramming, service process design, process modeling, and business process reengineering. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts. Equivalent to OSCM 435.

Registration Restrictions:
Required Prerequisites: (DESC 301C, L301, OM 301C or L301) or OM 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OM 452: Business Forecasting. 3 credits.
Introduces techniques for producing predictions of future business operations as aids to making planning decisions. Specific topics include judgmental forecasting, forecast accuracy, correlation analysis, smoothing methods, regression models, decomposition, and autoregressive and ARIMA models. Methods demonstrated and used through computer software. Offered by School of Business (p. 888). Limited to two attempts. Equivalent to OSCM 452.

Registration Restrictions:
Required Prerequisites: (DESC 301C, L301, OM 301C or L301) or OM 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OM 456: Quality Management. 3 credits.
Provides an understanding of the multifaceted nature of quality management by emphasizing topics such as quality philosophies, total quality management, design quality, process quality, and managing quality in information systems development. Discusses ISO 9000 and Capability Maturity Model. Uses software, case studies. A third attempt will require academic advisor approval. Offered by School of Business (p. 888). Limited to two attempts. Equivalent to OSCM 456.

Registration Restrictions:
Required Prerequisites: (DESC 301C, L301, OM 301C or L301) or OM 303C or L303.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OM 491: Seminar in Operations Management. 3 credits.
Analyzes selected topics that highlight latest developments in the operations management field, including contemporary research findings and case studies of operations management in business and other organizations. Offered by School of Business (p. 888). Limited to two attempts. Equivalent to OSCM 491.

Registration Restrictions:
Required Prerequisites: (OM 301C or OM 303C, L301 or L303.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior.
Non-Degree level students may not enroll.
Students with the terminated from BU major attribute may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OM 492: Internship in Operations Management. 3 credits.
Opportunity to gain practical, professional experience in conjunction with academic development. An internship is an important part of academic and career preparation. May be used as elective credit, but may not be repeated. Notes: No more than 6 credits of School of Business internship coursework (BUS 492 or OM 492) can be applied towards a student's 120 (BU) degree applicable credits. Students must receive departmental approval in order to register for this course; please contact the School of Business Office of Career Services for internal eligibility requirements.
Offered by School of Business (p. 888). May be repeated within the degree for a maximum 6 credits. Equivalent to ACCT 492, BUS 492, FNAN 492, MGMT 492, MIS 492, MKTG 492, OSCM 492.

**Recommended Prerequisite:** 75 credit hours

**Registration Restrictions:**
- **Required Prerequisites:** (OM 301\(^{-}B\) or 303\(^{-}B\)) and (MIS 301\(^{-}B\) or 303\(^{-}B\)).
- B\(^{-}\) Requires minimum grade of B\(^{-}\).

Students with a class of Freshman or Sophomore may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the terminated from BU major attribute may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**OM 493:** Management of Technology Projects. 3 credits.
Focuses on managerial problems associated with meeting technical, cost, and time constraints of technology projects. Discusses project management areas including organization, teams, scheduling, cost control, earned value analysis, risk management, and quality. Includes software cost estimation models and the management of IT projects. Software and case studies. Offered by School of Business (p. 888). Limited to two attempts. Equivalent to OSCM 493.

**Registration Restrictions:**
- **Required Prerequisites:** (OM 301\(^{C}\), L301, DESC 301\(^{C}\) or L301) or OM 303\(^{C}\) or L303.
- C\(^{C}\) Requires minimum grade of C.

Students with a class of Freshman or Sophomore may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the terminated from BU major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**OM 499:** Independent Study in Operations Management. 1-3 credits.
By special arrangement with instructor, and approval from associate dean for undergraduate programs. Investigates business problem according to student interest, using state-of-the-art decision science methodology. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits. Equivalent to OSCM 499.

**Registration Restrictions:**
- **Required Prerequisites:** (DESC 301\(^{C}\), L301, OM 301\(^{C}\) or L301) or OM 303\(^{C}\) or L303.
- C\(^{C}\) Requires minimum grade of C.

Students with a class of Freshman or Sophomore may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the terminated from BU major attribute may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**700 Level Courses**

**OM 721:** Seminar in Operations Management. 0-3 credits.
This course is designed to expose doctoral students to academic research in operations management. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OM 731:** Seminar in Supply Chain Management. 3 credits.
This course is designed to expose doctoral students to a broad foundation in supply chain management research including theory, quantitative and empirical tools. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OM 732:** Seminar in Innovation and New Product Development. 3 credits.
This course is designed to expose doctoral students to a broad foundation in innovation and new product development research including theory, quantitative and empirical tools. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**800 Level Courses**

**OM 893:** Special Topics in Operations Management. 3 credits.
This course is designed to expose doctoral students to a specialized topic within the operations management field through theoretical, quantitative and empirical work in the topic area. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
Operations Research (OR)

300 Level Courses

OR 335: Discrete Systems Modeling and Simulation. 3 credits.
Introduces basic concepts of modeling complex discrete systems by computer simulation. Topics include Monte-Carlo methods, discrete-event modeling, specialized simulation software, and statistics of input and output analysis. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to SYST 335.

Registration Restrictions:
Required Prerequisites: (CDS 130C or CS 112C) and (STAT 334C, 344C, 346C or MATH 351C) and (SYST 230C or CS 211C).
* May be taken concurrently.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

OR 438: Analytics for Financial Engineering and Econometrics. 3 credits.
Introduces the basic analytics for financial engineering and econometrics. Topics include financial transactions and econometric data management, correlation, linear and multiple regressions for financial and economic predictions, financial time series analysis, portfolio theory, and risk analysis. Provides a foundation of basic theory and methodology as well as applied examples with techniques to analyzing large financial and econometric data. Hands-on experiments with R will be emphasized throughout the course. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to SYST 438.

Recommended Corequisite: STAT 354
Registration Restrictions:
Required Prerequisites: STAT 250C, 260C, 334C, 344C, 346C or MATH 351C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OR 441: Deterministic Operations Research. 3 credits.
Survey of deterministic methods for solving real-world decision problems. Covers linear programming model and simplex method of solution, duality, and sensitivity analysis; transportation and assignment problems; shortest path and maximal flow problems; and introduction to integer and nonlinear programming. Emphasizes modeling and problem solving. Notes: Accelerated MS students may not receive credit for both OR/MATH 441 and OR 531 Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to MATH 441.

Registration Restrictions:
Required Prerequisite: MATH 203C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OR 442: Stochastic Operations Research. 3 credits.

Registration Restrictions:
Required Prerequisites: STAT 334C, 344C, 346C or MATH 351C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OR 481: Numerical Methods in Engineering. 3 credits.
Modern numerical methods and software. Emphasis on problem solving through software and assessing the quality of solutions obtained. Topics include computer arithmetic, linear equations and least squares data fitting, interpolation, nonlinear optimization, and differential equations. Involves extensive computer use. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to MATH 446.

Registration Restrictions:
Required Prerequisites: MATH 203C and CS 112C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

OR 498: Independent Study in Operations Research. 1-3 credits.
Directed self-study of special topics of current interest in operations research. Notes: May be repeated if topics substantially different. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Recommended Prerequisite: 60 hours; must be arranged with an instructor and approved by the dept. chair before registering.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

OR 531: Analytics and Decision Analysis. 3 credits.
Course focus is predominantly on prescriptive analytics with some parts focused on predictive analytics. Topics include operations research techniques and their application to decision making such as
Students who have taken OR 541 or OR 542 and OR MS majors do not receive credit. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** MATH 108, and STAT 250 or OM 200; or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 541: Operations Research: Deterministic Models.** 3 credits.
Survey of deterministic methods of solving real world decision problems. Covers linear programming model and simplex method of solution, duality, and sensitivity analysis, transportation and assignment problems; shortest path, minimal spanning tree, and maximal flow problems; and an introduction to integer and nonlinear programming. Emphasis on modeling and problem solving. Notes: Students who have taken OR 441/MATH 441 will not receive credit. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** MATH 203 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 542: Operations Research: Stochastic Models.** 3 credits.

**Recommended Prerequisite:** STAT 344 or MATH 351 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 540: Management Science.** 3 credits.
Operations research techniques and their application to managerial decision making. Mathematical programming, Markov processes, queuing theory, inventory models, PERT, CPM, and computer simulation are covered, as well as use of contemporary computer software for problem solving. Case-study approach to problem solving is used. Notes: Students who have taken OR 541 or OR 542 and OR MS majors do not receive credit. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** STAT 515 or STAT 544.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**OR 568: Applied Predictive Analytics.** 3 credits.

Introduces predictive analytics with applications in engineering, business, and econometrics. Topics include time series and cross-sectional data processing, correlation, linear and multiple regressions, time series decomposition, predictive modeling and case study. Provides a foundation of basic theory and methodology with applied examples to analyze large engineering and econometric data for predictive decision making. Hand-on experiments with R will be emphasized. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 568.

**Recommended Prerequisite:** STAT 515 or Graduate Standing at the MSOR or MSSE programs.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**OR 574: Quality Control and Process Management.** 3 credits.

An overview of quality control techniques widely used in a number of manufacturing industries. The course teaches students about combining engineering process quality management and traditional statistical quality control procedures that are applicable in the industry and are based on contemporary technologies such as lean Six Sigma, total quality management and predictive maintenance for achieving superior quality, reliability and maintainability. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 574.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**OR 576: Manufacturing Systems Analysis.** 3 credits.

An overview of modeling and analysis of general manufacturing systems techniques widely used in a number of manufacturing industries, such as semiconductor manufacturing. The course teaches students about best scheduling and inventory control practices, enterprise resource management principles, and details of engineering economy that are applicable in the industry. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 576.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**OR 588: Heterogeneous Data Fusion.** 3 credits.

Introduces the theory, design and implementation of multi-source information fusion systems in various domains. The course covers distinct technologies for combining data from multiple, heterogeneous sources and performing inferences in support to applications such as cyber security, Semantic Web, decision support systems, situational awareness, intrusion detection, crisis management, and others. The technical content is largely multi-disciplinary, encompassing disciplines such as knowledge engineering, ontologies, statistical learning, artificial intelligence, and data mining. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 584.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**OR 584: Financial Systems Engineering I: Introduction to Options, Futures, and Derivatives.** 3 credits.

This course is an introduction to financial engineering. Financial engineering is a cross-disciplinary field which relies on mathematical finance, numerical methods, and computer simulations to make trading, hedging, and investment decisions. This course will introduce basic
types of derivatives, such as forward, futures, swaps, and options; as well as financial models such as Brownian motion, Ito’s formula, and Black-Scholes model. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 588.

**Recommended Prerequisite:** Eng. or Math Graduate standing, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**OR 603: Sports Analytics.** 3 credits.
Cover topics in the applied analysis of sports, with a focus on supporting team decision-makers. Students will learn to apply modern, practical analytic techniques to sports data in search of actionable insight and a competitive edge. The four major team sports of North America (football, baseball, basketball, and hockey) will be the primary subjects of study, but the course’s learning objectives will universally apply to a variety of sports. Students will become familiar with the full analytic life-cycle: asking productive and relevant research questions, finding the right data, applying the appropriate tools, discovering insight, and clearly communicating results. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** (OR 531 or OR 541), and (STAT 518 or OR 568).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 604: Practical Optimization.** 3 credits.
Survey of optimization methods for students whose main focus is on application of optimization. Covers modeling, search methods, convexity, linear programming, sensitivity, networks, multivariate optimization, heuristic methods, integer programming, nonlinear programming and dynamic programming; use of modeling languages and optimization tools, including NEOS. Notes: Course cannot be counted toward MSOR degree. Students who have taken OR 541 or 644 cannot receive credit. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** OR 531 and CS 504 or higher programming course.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 610: Deep Learning for Predictive Analytics.** 3 credits.
Overview of the theoretical and algorithmic foundations of deep learning as well as practical aspects of developing deep learning predictive models. Topics include theoretical results from convex optimization and approximation theories, first and second order optimization algorithms (stochastic gradient descent, Nesterov acceleration, Newton’s), overview of popular architectures (recurrent and convolutional networks), accelerated linear algebra, GPU computing, automated differentiation and Bayesian inference. Applications in engineering, finance and artificial intelligence. Practical aspects of building predictive models, such as architecture selection, and data normalization. Extensive use of computational tools, such as the Python language, both for illustration in class and in homework problems. In addition to traditional instruction, a number of case studies and students’ model building projects provide further breadth and exposure. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** (OR 541 or OR 604) and (OR 568 or OR 664), or permission of instructor

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 635: Discrete System Simulation.** 3 credits.
Computer simulation as a scientific methodology in operations analysis, with emphasis on model development, implementation, and analysis of results. Discrete-event models, specialized software, input modeling, and output statistics are covered. Extensive computational work is required. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** OR 542, or STAT 354 or 344, or equivalent; and knowledge of scientific programming language.
Regulation Restrictions:
Enrollment is limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**OR 640: Global Optimization and Computational Intelligence. 3 credits.**
Introduction to global optimization of nonconvex mathematical programs and numerical methods for the solution of such problems. Topics covered include high-level survey of traditional mathematical programming algorithms; critical comparison of metaheuristics and artificial intelligence (AI) algorithms to traditional mathematical programming algorithms; probabilistic search, multistart methods, statistical tests of performance and confidence, simulated annealing, genetic algorithms, neural networks, Tabu search, homotopies and tunneling; the traveling salesman problem, the Steiner problem, Stackelberg-Cournot-Nash mathematical games and other classical nonconvex optimization problems. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Recommended Prerequisite: MATH 203 or equivalent, and knowledge of a scientific programming language.

Regulation Restrictions:
Enrollment is limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**OR 641: Linear Programming. 3 credits.**
In-depth look at the theory and methodology of linear programming: Computational enhancements of the revised simplex method; sparse-matrix techniques, bounded variables and the dual simplex method. Alternative interior point methods described and computational complexity of various algorithms analyzed. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Recommended Prerequisite: OR 541 or permission of instructor.

Regulation Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 644: Nonlinear Programming. 3 credits.
Nonlinear optimization theory and techniques applicable to problems in engineering, economics, operations research, and management science. Covers convex sets and functions, optimality criteria and duality; algorithms for unconstrained minimization, including descent methods, conjugate directions, Newton-type and quasi-Newton methods; and algorithms for constrained optimization, including active set methods and penalty and barrier methods. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Recommended Prerequisite: MATH 213 or equivalent and OR 541 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 645: Stochastic Processes. 3 credits.

Recommended Prerequisite: OR 542 or STAT 544 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 646: Stochastic Optimization. 3 credits.
Provides an introduction to stochastic optimization, more specifically, stochastic programming. The objectives are (i) to provide students with the ability to model and solve optimization problems under uncertainty, and (ii) to make students familiar with the state-of-the-art of stochastic programming. Homework will be used to reinforce and supplement information in each section. Through the semester we will be reading research papers to supplement the material in the text book. Papers and other course material will be provided on Blackboard. Students should be proficient with one programming language (e.g. MATLAB, Python, Java, C++) and should be able to become familiar with a math programming solver (e.g. Cplex, Gurobi.) Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Recommended Prerequisite: OR 541 and OR 542.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 647: Queuing Theory. 3 credits.
Unified approach to queuing, organized by type of model. Single- and multiple-channel exponential queues; Erlangian models, bulk and priority queues, networks of queues; general arrival and/or service times; and statistical inference and simulation of queues are covered. Extensive use of computational software. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Recommended Prerequisite: OR 542, STAT 544, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 649: Topics in Operations Research. 3-6 credits.
Advanced topic chosen according to interests of students and instructor from dynamic programming, inventory theory, queuing theory, Markov and semi-Markov decision processes, reliability theory, decision theory, network flows, large-scale linear programming, nonlinear programming, and combinatorics. Notes: May be repeated if topics substantially different. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the term.
Military Operations Research Modeling II: Effectiveness Analysis. 3 credits.

Examines issues and modeling underlying military decisions at the Military Service, Joint Staff, and Department of Defense level. Analytical methods with applications to theater campaign analysis, equipment and weapon system modernization, force structure development, strategic mobility and deployment, small-scale contingency operations, logistics, and requirements determination are considered. Optimization, simulation, and statistical techniques are stressed. Realistic problems presented and solved as case studies. Display of results and presentation techniques for military decision makers emphasized. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 660.

Recommended Prerequisite: SYST 460/560, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 660: Air Transportation Systems Modeling. 3 credits.
Introduces range of current issues in air transportation, including public policy toward the industry, industry economics, system capacity, current system modeling capability, human factors considerations, safety analysis and surveillance systems, and new technological developments. Students expected to develop broad understanding of contemporary and future issues. Knowledge evaluated through class discussions, a take-home midterm exam and a term project to be completed by the end of the semester. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 660.

Recommended Prerequisite: SYST 460/560, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 664: Bayesian Inference and Decision Theory. 3 credits.
Introduces decision theory and relationship to Bayesian statistical inference. Teaches commonalities, differences between Bayesian and frequentist approaches to statistical inference, how to approach statistics problem, and how to combine data with informed expert judgment to derive useful and policy relevant conclusions. Teaches theory to develop understanding of when and how to apply Bayesian and frequentist methods; and practical procedures for inference, hypothesis testing, and developing statistical models for phenomena. Teaches fundamentals of Bayesian theory of inference, including probability as a representation for degrees of belief, likelihood principle, use of Bayes Rule to revise beliefs based on evidence, conjugate prior distributions for common statistical models, and methods for approximating the posterior distribution. Introduces graphical models for constructing complex probability and decision models from modular components. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to CSI 674, SYST 664.

Recommended Prerequisite: STAT 544, STAT 554, or equivalent.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 670: Metaheuristics for Optimization. 3 credits.
Course on the theory and practice of metaheuristics, i.e. solution search techniques for solving combinatorial optimization problems. It will introduce the theory, applications (scheduling in manufacturing, transportation, and in other engineering and service industries), and computational aspects of directly searching for solutions to solve computationally complex optimization problems without a well-defined analytical model. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 670.

Recommended Prerequisite: OR 441/541 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 671: Judgment and Choice Processing and Decision Making. 3 credits.
How do people make judgments and decisions? Course presents an initial review of scientific literature directed toward answering this question, and emphasizes its importance when performing decision analysis and designing systems to support judgment and decision processes. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 671.

Recommended Prerequisite: STAT 344/354, OR 542 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 674: Dynamic Programming. 3 credits.
Course on the theory and practice of dynamic programming, i.e., optimal sequential decision making over time in the presence of uncertainties. Stresses intuition, the mathematical foundations being for the most part elementary. Introduces the theory, applications (finance, engineering, and biology), and computational aspects of dynamic programming for deterministic and stochastic problems. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 674.

Recommended Prerequisite: OR 442 or OR 542 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

OR 675: Reliability Analysis. 3 credits.
Introduction to component and system reliability, their relationship, and problems of inference. Topics include component lifetime distributions and hazard functions, parameter estimation and hypothesis testing, life testing, accelerated life testing, system structural functions, and system maintainability. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 675.

Recommended Prerequisite: STAT 544/554, OR 542 or permission of instructor.
OR 681: Decision and Risk Analysis. 3 credits.
Application of analytic reasoning and skills to practical problems in decision-making. Topics include problem structure, analysis and solution implementation, emphasizing contemporary approaches to decision analytic techniques. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 573.

**Recommended Prerequisite:** OR 542 or MBA 638.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

OR 682: Computational Methods in Engineering and Statistics. 3 credits.
Numerical methods have been developed to solve mathematical problems that lack explicit closed-form solutions or have solutions that are not amenable to computer calculations. Examples include solving differential equations or computation probabilities. Discusses numerical methods for such problems as regression, analysis of variance, nonlinear equations, differential and difference equations and nonlinear optimization. Applications in statistics and engineering are emphasized. Involves extensive computer use. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to CSI 690, MATH 685.

**Recommended Prerequisite:** MATH 203 and 213 or equivalent, and modern numerical methods and software.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

OR 688: Financial Systems Engineering II: Derivative Products and Risk Management. 3 credits.
Financial engineering is a cross-disciplinary field which relies on mathematical finance, numerical methods, and computer simulations to make trading, hedging, and investment decisions, as well as facilitating the risk management of those decisions. This course will focus on risk management for both market risk and credit risk. It will cover a broad range of derivatives products and hedging strategies with emphasis on how risks are managed in financial institutions. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 688.

**Recommended Prerequisite:** OR/SYST 588 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

OR 690: Optimization of Supply Chains. 3 credits.
Focuses on both supply chain optimization from an enterprise-wide perspective, and supply chain optimization from a business-to-business e-commerce concern. Concerned with optimizing the value of goods and services and assuring a reasonable return on such sales. Describes both heuristic and exact algorithms for scheduling, production, inventory management, logistics, and distribution. New software that enables such optimization is presented, as are manufacturing and service examples from the public and private sectors. New techniques to handle risk, quality of data, and robustness of solutions are presented. Students
perform case studies using state-of-the-art software. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** Mathematics through linear algebra, and STAT 344.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 699:** Masters Project. 3 credits.
Capstone project course for MS/OR program. Key activity is completion of a major applied team project resulting in an acceptable technical report and oral briefing. Student should plan to take this course in the last semester of studies. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** 21 graduate credits in OR or SYST.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**OR 719:** Graphical Models for Inference and Decision Making. 3 credits.
Theory and methods for inference and decision making in environments characterized by uncertain information. Covers graphical probability and decision models. Studies approaches to representing knowledge about uncertain phenomena, and planning and acting under uncertainty. Topics include knowledge engineering, exact and approximate inference in graphical models, learning in graphical models, temporal reasoning, planning, and decision-making. Practical model-building experience provided. Students apply what they learn to a project of their own choosing. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to CSI 775.

**Recommended Prerequisite:** STAT 652 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 735:** Advanced Stochastic Simulation. 3 credits.
Special topics and recent developments in Monte Carlo simulation methodology for discrete-event stochastic systems. Contents vary; possible topics include statistical analysis of simulation output data, random number and random variate generation, variance reduction techniques, sensitivity analysis and optimization of simulation models, distributed and parallel simulation, object-oriented simulation, and specialized applications. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 735.

**Recommended Prerequisite:** OR 635 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 741:** Advanced Linear Programming. 3 credits.
Recent developments in linear programming. Highlights advances in interior point methods and also addresses developments in the simplex method. Projective methods, affine methods, and path-following methods are examined, including Karmarkar's original work. Discusses relationships between these methods, and relationships to methods in nonlinear programming. Also discussed are advances in data structures and other implementation issues. Students test software and solve large-scale linear programs. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** OR 541 or 641.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 750:** Advanced Topics in Operations Research. 3 credits.
Special topics, applications, or recent developments in operations research. Contents vary and may include topics in optimization, stochastic methods, or decision support that are not covered in the standard OR curriculum. Notes: May be repeated when topics are distinctly different. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the term for a maximum 12 credits.
**Recommended Prerequisite:** OR 541 or 542, and 600-level course that varies with content of course.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 751: Advanced Topics in Operations Research for Planning and Scheduling.** 3 credits.
Introduces combinatorial optimization problems in scheduling and logistics. Solution techniques for various classes of such problems are developed. Topics include deterministic and stochastic scheduling algorithms with applications in manufacturing and service sectors. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** OR 541.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 760: Queuing Modeling of Computer-Communication Networks.** 3 credits.
Studies analytical modeling of computer and communication networks and performance evaluations. Topics include Markovian systems, open networks, closed networks, approximations, decomposition, simulation, sensitivity analysis, and optimal operation of systems. Presents local area networks, manufacturing systems, and other applications. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** OR 645 or OR 647, or ECE 542; or equivalents.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 782: Advanced Topics in Combinatorial Optimizations.** 3 credits.
Studies problems using most recent developments. Topics include cutting plane procedures based on polyhedral combinatorics; column-generation procedures for large, complex problems; heuristic approaches such as genetic algorithms, simulated annealing, and tabu search; study of special structures; reformulation techniques; and bounding approaches. Topics stress most recent developments in field. Notes: May be repeated when topics are distinctly different. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** OR 641 or OR 642.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 783:** Advanced Topics in Network Optimization. 3 credits.
Recent developments in solving optimization problems on networks. Prepares doctoral students to perform advanced research on network-related problems. Topics include linear, discrete, nonlinear, and stochastic problems. Several aspects of problems also studied, including computational complexity, exact algorithms, heuristics, solvable special cases, and computer implementation issues. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** OR 643.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 784:** Advanced Topics in Nonlinear Programming. 3 credits.
Studies theory and algorithms for solving nonlinear optimization problems. Contents vary; possible topics include large-scale and parallel-unconstrained optimization, theoretical issues in constrained optimization, duality theory, Lagrangian and sequential quadratic programming methods. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** OR 644.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 799:** Master's Thesis. 1-6 credits.
Research project chosen and completed under the guidance of a graduate faculty member, which results in a technical report acceptable to a three-member faculty committee, and an oral defense. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the degree.

**Recommended Prerequisite:** 21 graduate credits and permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**OR 842:** Models of Probabilistic Reasoning. 3 credits.
Survey of alternative views about how incomplete, inconclusive, and possibly unreliable evidence might be evaluated and combined. Discusses Bayesian, Baconian, Shafer-Dempster, and Fuzzy systems for probabilistic reasoning. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** STAT 544, OR 542, OR 681 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**OR 888:** Distributed Estimation and Multisensor Tracking and Fusion. 3 credits.
Centralized and distributed estimation theory, hierarchical estimation, tracking and data association, multisensor multitarget tracking and fusion, distributed tracking in distributed sensor networks, track-to-track association and fusion, and Bayesian networks for fusion. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** ECE 734 or SYST 611.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**OR 944:** The Process of Discovery and Its Enhancement in Engineering Applications. 3 credits.
Studies ingredients of imaginative reasoning as it concerns efficient discovery of new ideas and valid evidential test of them. Topics include different interpretations of Peirce's theory of abductive reasoning and other forms of reasoning, Hintikka's analysis of process of inquiry, and current attempts to design systems that provide assistance in discovery-
related or investigative activities. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to SYST 944.

Recommended Prerequisite: OR 842 or SYST 842 or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Organization Development and Knowledge Management (ODKM)

700 Level Courses

ODKM 700: Organizations, Management and Work: Theory and Practice. 3 credits.
This introduction to organizations, management, and work examines ideas and practices from two perspectives: conventional ones that go back to the industrial age and scientific management; and contemporary ones that have to do with organizing knowledge-work. Covers contributions of a range of writers and deals with foundations of OD from the standpoint of both theory and practice. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 705: Group Dynamics and Team Learning. 3 credits.
Engaging in unstructured and semi-structured learning environment, students will learn how to facilitate team learning for organizational effectiveness. By exploring various aspects of group dynamics such as power, perception, motivation, leadership, and decision making, students will develop various competencies to manage teams and enhance their emotional and appreciative intelligence. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 710: Social and Organizational Inquiry. 4 credits.
Introduces participants to the ethics, conduct and evaluation of research into human, social and organizational realities. Explores relationships between what and how we measure and what we find. Students develop the capacity to reflect on themselves as research instruments, on their own impact on the systems under study, and on the impact of the research assumptions, framing and approach both on the results obtained and on the future development of those systems. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 715: Creating Learning Organizations. 3 credits.
Focuses on the epistemological and ontological implications of organizational life in the twenty-first century. Reevaluates traditional management approaches in light of global economies, instantaneous communication, changing technologies, and diverse workgroups in knowledge economies. Special attention to developing skills for “double- and triple-loop learning” and reflection in professional lives through learning conversations, journals, narrative, autobiography, and imaginative literature. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 720: Socio-technical Systems and Collaborative Work. 3 credits.
Examines the potential of collaborative technologies for creating effective knowledge sharing in organizations. Through the use of tools such as SharePoint, students will gain a comprehensive understanding of the state of the art of virtual work and collaboration technology and other subjects related to successful design of a collaborative knowledge work environment. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 725: Knowledge Management and Strategy. 3 credits.
An in-depth look at knowledge management, both theory and practices, which distinguishes between technology-oriented KM practices and people-oriented ones, with an emphasis on leveraging and sharing knowledge to get work done well and develop more effective organizations. Examines effective ways of organizing knowledge-work, including social networks, communities of practice, and the use of collaborative technologies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 730: Special Topics. 1-3 credits.
Selected special topics in organization development and knowledge management not covered by existing ODKM courses. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 731: Consulting Skills for Organizational Change. 3 credits.
Explores various theories and practices of change management, collaborative consulting, action research, and organization development. Using class projects and case studies, students bring together their understanding of organization development, their values, and their personal style to perform more effectively in various consulting roles. Students also learn various aspects of process consulting and client relationship management. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 732: Leadership and Social Justice. 4 credits.
This course challenges participants not just to theorize leadership and social justice but to inhabit them. Reflective understanding and practice span: inner journeys, interpersonal relationships, organizations, and large scale systems. With globalization, ethical leadership requires understanding diverse perspectives and complex systems. Outward leadership relies on inner leadership. Participants cultivate personal leadership philosophy and practice through engaging real-life challenges. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 735: Organizational Development Practices. 3 credits.
Students develop applied knowledge of various organizational development practices such as action research and appreciative inquiry. Includes simulations to understand the complexities of real-world change management. Group projects with selected organizations will help students develop their diagnostic and analytical skills to become better facilitators of organizational learning. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

ODKM 740: Learning Community. 1-3 credits.
Using workshops, seminars, simulations, and structured experiences, students will learn how to build a learning Community of Practice (CoP) as practitioners of organization development. They will also reflect upon the community building experience using research findings and design practice sessions to apply the lessons learned to the work environment. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: Candidates for the M.S. in ODKM degree only.

Registration Restrictions:
Enrollment is limited to students with a major in Organiztn Dev Knowledge Mgt.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Parks, Recreation, and Leisure Studies (PRLS)

200 Level Courses

PRLS 200: Wilderness First Responder. 2 credits.
Examines the role of outdoor professionals in wilderness medicine and the response, care and rescue of outdoor participants in non-urban outdoor environments. Uses the Patient Assessment System (PAS) to assess backcountry patients in an intensive experiential course which addresses the issues of medico legal concerns, blood borne pathogens and infectious diseases. Offered by Recreation, Health & Tourism (p. 221).
May be repeated within the degree for a maximum 8 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 210: Introduction to Recreation and Leisure. 3 credits.
Traces the development of current concepts of recreation and leisure and their implications and consequences. Covers influences of philosophy, religion, science, economics, sociology, and politics on discretionary time and its uses. Notes: Open to nonmajors. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 220: Experiential Education Theory and Application. 3 credits.
Provides a broad theoretical, as well as practical, background in teaching and learning experientially. Concepts presented, experienced, and discussed include the basic premises of experiential learning according to a wide variety of educators and philosophers. The content and experience applies to recreation, education, development, and therapeutic settings. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 221: Challenge Course Facilitation. 3 credits.
Provides the fundamental principles and techniques of challenge course facilitation. Classroom learning is combined with an experiential setting through leading youth groups in the field. Students are provided with an introduction to safety, skills, and facilitation techniques for low and high elements of outdoor challenge courses. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: CPR Certification and PRLS 220.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 241: Practicum. 3 credits.
Paid or voluntary work experience in a park and recreation agency. Minimum period of 10 to 12 weeks of part-time employment or experience. Capstone course for minors, allowing for integration and application of course work, theories, and research to a work setting. Work sites chosen among four approved sites. Includes meetings and assignments prior to and during the practicum. Notes: Open to departmental majors and minors only. Serves as a capstone for minors who have completed PRLS 310, 316, and 327. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PRLS 250: Wilderness Travel and Sustainability. 2 credits.
This experiential course is designed for students with prior backpacking experience. Involves discussions, demonstrations, and activities that teach students wilderness skills, safety and judgment, leadership and teamwork, and environmental ethics. Topics covered include basic wilderness first-aid, hazard evaluation, emergency procedures, expedition behavior, self awareness, judgment and decision making, campsite selection, shelter and stove use, fire building, sanitation and hygiene, cooking, nutrition and rationing, equipment care and selection, staying warm and dry, route finding and navigation, Leave No Trace backpacking, weather, natural history, and wilderness ethics. Application of these skills will occur during the 14-day offtrail backpacking trip in a remote wilderness area. Not only will students practice these wilderness skills, but they will also develop leadership abilities by working in a collaborative team environment. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 290: Aquatic Operation and Management. 3 credits.
Covers industry standards for water quality and aquatic facility management. Includes recognizing, measuring, and preventing biological and physical hazards. Meets requirements for certification as a Certified Pool/Spa Operator through the National Swimming Pool Foundation as well as certification in CPR through the American Red Cross. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

PRLS 300: People with Nature. 3 credits.
Traces philosophical evolution of perceptions of and attitudes toward nature. Examines role of philosophers, scientists, nature-writers, and artists in the shaping of environmental thought. Includes extensive reading of Emerson, Thoreau, Muir, Leopold, Carson, Wilson, and others.
Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Specialized Designation:** Green Leaf Focused Course

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 302: Park Management and Operations. 3 credits.
Focuses on management and operations of park resources, including the management of visitors and recreation development. Emphasizes understanding of contemporary threats to park integrity and preservation of resources. Also covers maintenance management systems. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** PRLS 300

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 310: Program Planning and Evaluation. 3 credits.
Introduces fundamental principles and techniques of the planning process for sport, recreation and tourism programs, including assessment of needs and goals, objectives, and mission statement; generating solutions; planning programs for implementation and evaluation. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** PRLS 210\(^D\), SPMT 201\(^D\), PHED 200\(^D\), SRST 200\(^D\), or TOUR 200\(^D\).
\(^D\) Requires minimum grade of D.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 316: Leadership and Outdoor Education. 3 credits.
Focuses on promotion of lifelong health and fitness via noncompetitive and informal outdoor activities. Introduces safety, skills, and leadership techniques. Covers sustainable use, conservation, and stewardship of natural resources. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 317: Social Psychology of Play and Recreation. 3 credits.
Applies social psychological theories and research to the study of leisure, play, and recreation behavior, including correlates, antecedents, and consequences of and constraints to these concepts. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** PRLS 210\(^D\) or SRST 200\(^D\).
\(^D\) Requires minimum grade of D.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 327: Foundations of Therapeutic Recreation. 3 credits.
An introduction to the processes and techniques of therapeutic recreation to meet the unique needs of people with disabilities. This course examines the history, concepts, theories, and foundations of therapeutic recreation. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 360: Bill of Rights Issues in Parks, Schools, and Public Places. 3 credits.
Examines issues, particularly those involving First Amendment free speech and freedom of religion issues such as political protests, religious displays, and use permits. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 362: Cultural and Environmental Interpretation. 3 credits.
Focuses on communication processes and practices used to explain and interpret special characteristics of cultural and environmental resource sites for visitors. Conceptual principles for planning interpretive programs and multi-media delivery techniques are discussed. Methods for programming interpretive services, addressing multi-audience accessibility, and administration and evaluation of interpretive services used at recreation and tourism sites are also examined. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts. Equivalent to TOUR 362.

**Recommended Prerequisite:** PRLS 300

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 402: Human Behavior in Natural Environments. 3 credits.
Applies social and behavioral theories to management for recreational users of land and water resources. Examines deterioration and pollution of land and water, noise, crowding, and conflicts among users. Discusses strategies for mitigation of deleterious impacts and depressive 400 Level Courses

PRLS 402: Human Behavior in Natural Environments. 3 credits.
Applies social and behavioral theories to management for recreational users of land and water resources. Examines deterioration and pollution of land and water, noise, crowding, and conflicts among users. Discusses strategies for mitigation of deleterious impacts and depressive
behaviors, and attitudes toward resource conservation, preservation, and use. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:
Required Prerequisite: PRLS 300\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 405: Planning and Operation of Recreation Facilities. 3 credits.
Covers quantity, location, and design standards for facilities. Includes safety, functionality, durability, and maintenance demand criteria in planning and design; programmatic and operational objectives to be met, including user comfort and convenience, crowd management, and traffic flow, and space relationships. Includes field study of local facilities. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: 60 credits

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 410: Administration of SRT Organizations I. 3 credits.
Focuses on operation and management of sport, recreation and tourism organizations. Covers management and leadership theories and techniques, problem-solving and decision making, organizational communications, design of organizational structures and budgeting. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: 60 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 411: Administration of SRT Organizations II. 3 credits.
Focuses on program and organizational marketing principles and strategies; service quality assessment and organizational evaluation techniques; and organizational financing for the experience industry. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: PRLS 410\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 416: Trends and Programming Assessment in Therapeutic Recreation. 3 credits.
Explores the role of leisure in human development with a specific focus on needs, demands, and services for people with disabilities and illness. Presents concepts associated with leisure, aging, physical challenge, targeting leisure services, research, and public policy. Notes: Field experience required. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: PRLS 327\textsuperscript{D}.
\textsuperscript{D} Requires minimum grade of D.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 417: Processes, Techniques and Supervision in Therapeutic Recreation. 3 credits.
Exploration of processes and techniques used in Therapeutic Recreation, with a focus on the nature and diversity of recreation and leisure activities, modalities and interventions, facilitation techniques and approaches, leadership roles and tasks, communication skills, clinical supervision, health and safety considerations, and the impact of the impairment and/or treatment on the individual. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: PRLS 327\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 418: Assessment in Therapeutic Recreation. 3 credits.
Presents methods of assessment, development of treatment program plans, and evaluation of all components. Extends program design by developing competencies in the planning approaches, individual and group assessment techniques, program evaluation, and documentation strategies for people with disabilities and illness. Notes: Field experience required. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: PRLS 327\textsuperscript{D}.
\textsuperscript{D} Requires minimum grade of D.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 460: Sport and Recreation Law. 3 credits.
Emphasizes safety, liability, and risk. Covers current law and liability issues for administrators of RHT facilities and programs. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: 60 credits

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
PRLS 480: Special Topics in Recreation Management. 1-3 credits. Selected topics reflecting interest in specialized areas of parks and outdoor recreation or therapeutic recreation. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: 60 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PRLS 490: Recreation Management Internship. 12 credits. Consecutive weeks in an agency for a minimum 10-15 weeks of 30-40 hours weekly (400 total hours-parks and outdoor recreation) and (560 total hours-therapeutic recreation supervised by a Certified Therapeutic Recreation Specialist). Applies course work, theories, and research to an agency site chosen by the student after approval by Internship Coordinator. Includes meetings and assignments before and during internship. Note: Mandatory internship meeting attendance required before registration and CPR and AED certification required by start of class. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Mason Core: Capstone (p. 142)

Registration Restrictions:
Required Prerequisites: PRLS 210D, 310C, 323C, 316C, 410C, SRST 200D, PRLS 323D, 241D and 317D.

D Requires minimum grade of D.
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a concentration in Parks and Outdoor Recreation or Therapeutic Recreation.

Schedule Type: Internship

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

PRLS 499: Independent Study. 1-3 credits. Individual study of topic area in leisure research, theory, or practice under direction of faculty. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: 90 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Health Education, Health, Fitness Rec Resrcs, Individualized Study, Nursing, Physical Education (Special), Physical Education or Parks, Rec, Leisure Studies.

Washington Consortium level students may not enroll.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

PRLS 501: Introduction to Natural Resources Law. 3 credits. Selected legal issues involving conflicting use and preservation demands on our nation’s limited natural resource base, particularly those involving public lands, open space, and recreation resources. Uses case studies of recent court decisions. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: PRLS 460.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

PRLS 503: Administration and Disability Rights in Therapeutic Recreation. 3 credits. Overview of major law and policy issues related to therapeutic recreation services for people with disabilities. Primary focus is on the Americans with Disabilities Act and related federal legislation. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: PRLS 460.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

PRLS 526: Environmental Education and Resource Interpretation. 3 credits. Provides methods for communicating and disseminating information pertaining to the use of natural recreation resources. Covers design and implementation of educational materials and programs to enhance understanding and appreciation of cultural, historical, and natural resources. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)
PRLS 531: Natural Resources Recreation Planning. 3 credits.
Origins and evolution of recreation use philosophy, policies, and service of public estate management. Examines planning for a spectrum of opportunities, from wilderness to developed sites, with attention to financial consideration and sustainable use of cultural and visual resources. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PRLS 533: Visitor Services. 3 credits.
Examines motivation of resource-based recreation participants. Covers visitors' expectations and perceptions, with emphasis on implication for service quality, staff training, and other management responsibilities. Discusses use and user conflicts and placement, information and interpretive service, and human and other interpretive service resources. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PRLS 535: Evaluating Recreation Outcomes. 3 credits.
Covers application of quantitative and qualitative research methods to the evaluation of programs provided to visitors and users of public lands for outdoor recreation. Focuses on needs assessment and application of meaningful measures for formative and summative evaluations. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PRLS 598: Special Topics. 1-6 credits.
Projects related to parks, recreation, and leisure studies. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PRLS 599: Independent Study. 1-3 credits.
Study of a problem area in parks, recreation, and leisure studies research; theory or practice under the direction of faculty member. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 3 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

PRLS 601: History of Leisure and Sport in American Society. 3 credits.
Examines leisure and sport in American society from the early colonial period to the present day. Investigates the pattern of leisure and sport as America moved from a largely agrarian to a highly industrialized nation. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PRLS 610: Recreation Administration and Planning. 3 credits.
Examines recreational administration concepts regarding organizational structure and operations, personnel management, financing, policy
development, and public relations procedures. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PRLS 611: Social Psychology of Leisure.** 3 credits.
Addresses historical, theoretical, and empirical foundations of social psychological constructs relative to social behavior in park, recreation, sport, and tourism settings. Focuses on attitudinal, social, and motivational theories as applied to leisure-related contexts. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PRLS 612: Philosophy of Leisure and Sport.** 3 credits.
Investigates the phenomenon of leisure and sport from a philosophical perspective. Utilizes the philosophical approach to better explain the role that leisure and sport play in American society. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PERS 110:** Elementary Persian. 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
200 Level Courses

PERS 201: Intermediate Persian I. 3 credits.
Further development of skills in listening, speaking, and writing. Notes:
PERS 201 and 202 must be taken in sequence. Offered by Modern &
Classical Languages (p. 424). Limited to three attempts.
Recommended Prerequisite: PERS 110, or permission of department.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PERS 202: Intermediate Persian II. 3 credits.
Further development of skills in listening, speaking, and writing. Notes:
PERS 201 and 202 must be taken in sequence. Offered by Modern &
Classical Languages (p. 424). Limited to three attempts.
Recommended Prerequisite: PERS 201, or permission of department.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

PERS 330: Advanced Persian I. 3 credits.
Development of cultural and linguistic competency in written and spoken
Persian at the low advanced level, with attention to reading, writing,
listening and speaking, grammar and vocabulary pertaining to Persian
social, political and cultural issues. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.
Recommended Prerequisite: PERS 202 or equivalent.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PERS 331: Advanced Persian II. 3 credits.
Development of cultural and linguistic competency in written and spoken
Persian at the advanced level, with attention to reading, writing, listening
and speaking, grammar and vocabulary pertaining to Persian social,
political, and cultural issues. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.
Recommended Prerequisite: PERS 330, equivalent, or permission of
instructor.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Philosophy (PHIL)

100 Level Courses

PHIL 100: Introduction to Philosophy. 3 credits.
Introduction to the nature of philosophical reasoning and some of the
main problems of philosophy. Offered by Philosophy (p. 442). Limited to
three attempts.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 110: Ethics Lab. 1 credit.
Focuses on contemporary moral problems and case studies of real
world situations involving moral issues. Examines different
ways of identifying, analyzing and responding to such issues based on
different approaches to ethical thinking. Allows students to develop
their capacities for moral perception, and ethical decision-making and
action in a global setting. Offered by Philosophy (p. 442). Limited to three attempts.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 112: Ethics and the Cybersociety. 1 credit.
Examines ethical issues associated with new developments in
information technology, including privacy rights, intellectual property
rights, and the effect of information technology on society. Offered by
Philosophy (p. 442). Limited to three attempts.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 151: Introduction to Ethics. 3 credits.
Considers some perennial issues in ethical theory. Offered by Philosophy (p. 442). Limited to three attempts.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 156: What Is Art?. 3 credits.
Introduction to philosophical reflection on the arts by looking at the
critical issues in the history of aesthetics. Applies considerations to
specific works and explores these works in terms of their historical
contexts and influences. Concentrates on one form of art or one period
and always emphasizes questions of critical evaluation and art historical
analysis. Offered by Philosophy (p. 442). Limited to three attempts.
Mason Core: Arts (p. 142)
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 173: Logic and Critical Thinking. 3 credits.
Basic concepts and techniques of deduction, emphasizing the modern
treatment of such topics as quantification and rules of inference, with
study of the classical treatment. Basic principles of induction, informal
fallacies, and uses of logic in everyday life. Offered by Philosophy (p. 442). Limited to three attempts.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
200 Level Courses

PHIL 243: Global Environmental Ethics. 3 credits.
Examines the global dimensions of environmental problems. Although environmental problems are global in reach, because different societies make different philosophical and ethical assumptions, they are understood in different ways. Examines several environmental problems, including climate change, population growth, and resource depletion, from a variety of scientific, policy, and cross-cultural perspectives. Offered by Philosophy (p. 442). Limited to three attempts.

Mason Core: Global Understanding, Encore: Sustainability, Encore: Well-Being (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 251: Happiness and the Good Life. 3 credits.
Addresses the question "How do I live a happy life?" by drawing on 2,500 years of philosophy as well as the much more recent science of happiness. Encourages students to develop and live their own answer in light of some of the best available science and philosophy. Offered by Philosophy (p. 442). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 253: Philosophy and Literature. 3 credits.
Examines differences and relations between literary and philosophical texts. Examines texts from a given period in the history of literature and philosophy. Topics include the presence of common issues in literary and philosophical writings, the influence of philosophical ideas on the production of literary texts and literary theory, and the development in literary texts of issues that are possible objects of philosophical inquiry. Offered by Philosophy (p. 442). Limited to three attempts.

Mason Core: Literature (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 301: History of Western Philosophy: Ancient. 3 credits.
Classical Greek philosophy, including pre-Socratics, Socrates, Plato, and Aristotle. Offered by Philosophy (p. 442). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 303: History of Western Philosophy: Modern. 3 credits.
Figures and problems of modern philosophy. Study of philosophers such as Descartes, Locke, Berkeley, Hume, Kant, and Hegel. Offered by Philosophy (p. 442). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 305: Business Ethics. 3 credits.
Examines some moral problems that arise with regard to the responsibilities of various segments of the business community, including employers, management, stockholders; to one another; to the consumer; and to society at large. Offered by Philosophy (p. 442). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 306: Philosophy Internship. 3-6 credits.
Gives students the opportunity to apply philosophical skills in real-world settings. Internships arranged and supervised by faculty in the Department of Philosophy. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 309: Bioethics. 3 credits.
Examines some major moral issues involved in practice and research in medicine and health care. Topics to be chosen from medical experimentation, definition of death, physician-assisted dying, genetics and human reproduction, distribution of scarce resources, fertility, and organ transplants. Offered by Philosophy (p. 442). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 311: Philosophy of Law. 3 credits.
Investigation of theories of natural law, legal positivism, and legal realism as they pertain to some of the central philosophical questions about law. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 hours of PHIL or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 312: Philosophy of Religion. 3 credits.
Study of classical appeals to philosophy in support of belief in god's existence (Philo, Augustine, Anselm, Aquinas, Descartes); the fideism of Hume and the metaphysical agnosticism of Kant; the concept of religious experience in the philosophies of Hegel, Schleiermacher, and Kierkegaard; and the problem of religious language in contemporary empirical philosophy. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits of philosophy, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 323: Classical Western Political Theory. 3 credits.
Exploration through lecture and discussion of developments in the Western tradition of political thought from the time of the Greek city-state to late medieval Christendom, focusing on such topics as the nature and purpose of politics, the relationship between the individual and the state, the political significance of religion and tradition, and the concept of natural law. Offered by Philosophy (p. 442). Limited to three attempts. Equivalent to GOVT 323.

Recommended Prerequisite: GOVT 101 or three credits of Philosophy.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 324: Modern Western Political Theory. 3 credits.
Exploration through lecture and discussion of developments in the Western tradition of political thought from the Renaissance to the middle of the 19th century, focusing on such topics as the rise of individualism in political theory, early developments in social contact theory, theories of radical popular sovereignty, and early criticisms of liberal theory. Offered by Philosophy (p. 442). Limited to three attempts. Equivalent to GOVT 324.

Recommended Prerequisite: GOVT 101 or three credits of philosophy.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 325: Karl Marx's Social and Political Thought. 3 credits.
Study and evaluation of Marx's social and political ideas based on writings selected from several phases of his career. Examination of relation of Marx's thought to post-Marxian socialist theory and practice. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits of philosophy, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 327: Contemporary Western Political Theory. 3 credits.
Exploration through lecture and discussion of recent developments in the Western tradition of political thought from the middle of the 19th century to today. Different sections focus on one or another of the various political theories that have been influential during this period such as liberal, libertarian, conservative, communitarian, Marxist, feminist, and postmodern thought. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the term for a maximum 12 credits. Equivalent to GOVT 327.

Recommended Prerequisite: GOVT 101 or three credits of philosophy.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 329: Philosophy after Auschwitz. 3 credits.
Examines the philosophical questions that arise in the wake of the Nazi concentration camps concerning genocide, political modernity, and conceptions of the human. Investigates how the logic of the camp made possible systematic genocidal violence against the Jews and other groups, and the ways in which that logic manifests in other forms and on other bodies before and after Auschwitz. Draws on writers and philosophers such as Primo Levi, Giorgio Agamben, Hannah Arendt, Maurice Blanchot, and/or Adriana Cavarero to analyze the ethical and political questions posed by the camps, and uses literature, film and art to engage with the complexities of bearing witness to horror and the unrepresentable. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits of PHIL or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 332: Twentieth-Century Analytic Philosophy. 3 credits.
Examination of the attempts of 20th-century philosophers to solve philosophical problems by an analysis of language. Figures and movements covered include Russell, Moore, Wittgenstein, logical positivism, and ordinary language philosophy. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits of logic and PHIL 303, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 333: American Philosophy: Pragmatism. 3 credits.
Examines the philosophical movement of American Pragmatism, with emphasis on its origin in the late nineteenth century. Figures covered include Peirce, James, Dewey, and Mead. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits of philosophy, or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 335: Nineteenth-Century Philosophy. 3 credits.
Development of German Romanticism and Idealism during a brilliant period in the history of the West rivaled only by ancient Greece. Kant, Fichte, Hegel, Kierkegaard, Schopenhauer, and Nietzsche mount a revolt against the rationalism and scientism of the modern world. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 hours of PHIL or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
PHIL 336: Twentieth-Century Continental Thought: Existentialism. 3 credits. Examination of existential philosophy from its 19th-century origins to its 20th-century expressions. Philosophers studied include Kierkegaard, Nietzsche, Sartre, De Beauvoir, and Buber. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 hours of PHIL or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 337: Twentieth-Century Continental Thought: Phenomenology. 3 credits. Examines the phenomenological way of doing philosophy, its findings in regard to the "life-world," questions of "first philosophy," and the subject matter of the social sciences, as well as critical difficulties in its development. Texts by Husserl, Heidegger, Merleau-Ponty, Sartre, Schutz, and Derrida. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits of philosophy, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 338: Philosophy, Race, and Gender. 3 credits. Examines how concepts of gender, sexual difference, and race structure key philosophical ideas and put such ideas into question. Analyzes the ways in which patriarchal, colonial and racialized structures intersect to produce concepts of the human, the subject, and the 'Other'. Explores alternative approaches to subjectivity, sexuality, the body, and knowledge drawn from feminist philosophy, queer theory, and philosophies of race and decoloniality. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 hours of PHIL or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 339: Hermeneutic Philosophy. 3 credits. Study of the development of hermeneutic philosophy in works by Heidegger, Gadamer, and Ricoeur, as an effort toward coming to terms with the historicity of human experience. Implications for interpretive understanding of artworks, institutions, events, texts, and the human condition. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 hours of PHIL or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 340: Topics in Environmental Philosophy. 3 credits. An in-depth examination of selected environmental issues from a philosophical perspective. Such issues might include the value of nature, the moral status of animals, duties to protect wilderness areas, economics and environmental protection, environmental justice, and environmental aesthetics. Offered by Philosophy (p. 442). Limited to three attempts.

Mason Core: Encore: Sustainability, Synthesis (p. 142)

Specialized Designation: Green Leaf Related Course

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 344: Ethical Issues in Global Health. 3 credits. This course will consider ethical questions that arise in global health policy, practice and research. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: Sophomore standing or higher.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 345: Theories of Ethics. 3 credits. A critical examination of a variety of different types of classical, modern, and contemporary ethical theories, including consequentialist theories, deontological theories, and virtue theories. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 3 credits in PHIL or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 346: Philosophy of Art. 3 credits. Basic problems that arise from an inquiry into meaning and value of art and our response to art. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 hours of PHIL or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 347: Philosophy of the Social Sciences. 3 credits. Philosophical issues relating to competing methodologies for the social sciences. Analysis and critique of mainstream positivism and behaviorism; paradigm theory and scientific revolutions; interpretive understanding and hermeneutical science; phenomenology and the social construction of reality; ethnmethodology and situational meaning; analytic philosophy and action theory; the "idea" of a social science; sociology of knowledge and theory of ideology; and Western Marxism and critical theory. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits of philosophy, or permission of instructor.

Schedule Type: Lecture

Grading:
PHIL 358: Ethics and Economics. 3 credits.
Examines issues at the intersection of ethics and economics. Looks at the different ways in which ethics and economics impact each other. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits in philosophy or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 371: Philosophy of Natural Sciences. 3 credits.
One semester of logic recommended. Study of aims and methodology of science. Among the questions of concern are: What constitutes a good scientific explanation? What grounds are used for comparing rival theories? Is there a special method of scientific discovery? Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 hours of philosophy or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 373: Theory of Knowledge. 3 credits.
Discussion of basic problems concerning the nature of knowledge, with study of the relation of knowledge to perception, belief, and language. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 hours of philosophy or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 377: Philosophy of Mind. 3 credits.
Investigation of such theories as dualism, behaviorism, and materialism as they pertain to some of the central philosophical questions about mind. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: 3 credits of philosophy, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 379: Perspectives on Time. 3 credits.
Examines the variety of ways time is conceptualized in different disciplines. Influential conceptions of time from the history of philosophy are studied in order to provide a comparative framework within which to consider specialist conceptions of time drawn from the sciences and humanities, including relativistic time, geological deep time, life cycles, and time in historical narrative. Offered by Philosophy (p. 442). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: 3 credits of philosophy, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 391: Special Topics in Philosophy. 1-3 credits.
Examines topics of current interest such as death and dying, rights of children, and philosophical controversies in modern physics. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the term for a maximum 12 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 393: Humanities College to Career. 1 credit.
Focuses on career choices and effective self-presentation for soon-to-be graduating students with majors in the humanities. Explores how skills typically learned in humanities majors can be leveraged for a successful transition to post-graduation employment. Offered by Philosophy (p. 442). Limited to three attempts. Equivalent to ENGH 303, FRLN 309, HIST 385, UNIV 420.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 398: Study Abroad. 3 credits.
Study abroad under supervision of Mason faculty. Course topics, content and locations vary. Notes: A maximum of 6 credits may be applied to the
BA in philosophy. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 12 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

PHIL 411: Theories of Decision. 3 credits.
Examines from a philosophical perspective descriptive and normative theories of individual decision, with particular focus on the strengths and weaknesses of theories of rational choice, and attempts to incorporate insights from psychology into theories of decision. Explores theoretical developments and a variety of applications. Offered by Philosophy (p. 442). Limited to three attempts.

Recommended Prerequisite: Two previous courses in either Philosophy, Psychology, or Economics.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 421: Seminar. 3 credits.
Explores topics in current philosophical research in a seminar format. Topics vary. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 18 credits.

Mason Core: Capstone (p. 142)

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: Nine credits in philosophy.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 422: Honors Seminar. 3 credits.
Seminar for students enrolled in the honors program in philosophy. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the term for a maximum 18 credits.

Mason Core: Capstone (p. 142)

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: Nine credits in philosophy and acceptance to the honors program in philosophy.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 425: Independent Study. 1-3 credits.
Independent study under supervision of faculty member. Students and faculty agree on program of study to include at least a reading list and final written project. Students must arrange for independent study in the semester before they wish to enroll. Requires approval of department. Offered by Philosophy (p. 442). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: Sixty credits, including 15 credits in Philosophy and permission of the department.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHIL 460: Senior Seminar in Philosophy, Politics, and Economics. 3 credits.
Covers issues in the philosophy, economics, and political science of institutions, information, and collective action. Through case studies of existing legal and political institutions, applies the insights to problems in politics, policy making, social-choice theory, and social, moral, and political philosophy. (Specific content varies). Notes: Serves as the capstone course for the PPE program. Offered by Philosophy (p. 442). Limited to three attempts. Equivalent to ECON 460, GOVT 469.

Recommended Prerequisite: PHIL 358 and ECON 412 or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

600 Level Courses

PHIL 600: Proseminar in Philosophy. 1 credit.
Introduces MA students to the areas and methods of philosophical scholarship. Notes: Graduate students outside of the philosophy program may take this course with permission of the department. Offered by Philosophy (p. 442). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment limited to students in the LA-MA-PHIL program.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PHIL 603: Aristotle: Selected Works. 3 credits.
Close study of Aristotle's work and its place and future in history of philosophy. Topics vary by semester and include Aristotle's metaphysics, natural sciences, ethics, political thought, logic, epistemology, and psychology. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
PHIL 608: Hegel's Phenomenology of the Spirit. 3 credits.
A study of the philosophy of Hegel through a reading of the text that presents an introduction to his system. Special attention is paid to Hegel's background in the work of Kant and the German Idealists. Offered by Philosophy (p. 442). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

PHIL 615: Postmodernist Thought. 3 credits.
In recent decades, the term "postmodern," first used by art critics in the late 19th century, has been taken up by prominent contributors to the arts, social thinkers, and philosophers, to describe developments as well as the current period. Examines three thematic concerns found in work that is identified with postmodern issues: what modernity defines itself in contrast to or against, the status of "man," and status of "subjectivity." Offered by Philosophy (p. 442). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

PHIL 616: Phenomenology. 3 credits.
This major approach in philosophy is studied in regard to its basic features, the tasks to which it has been set by major contributors, certain findings of phenomenology in practice, as well as crucial problems that develop as phenomenology proceeds and how they are addressed by phenomenologists. Offered by Philosophy (p. 442). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
PHIL 643: Environmental Ethics. 3 credits.
An examination of human interactions with the natural environment from an ethical perspective. Emphasis will be placed on the strengths and weaknesses of various ethical theories and the different conceptions of the proper relationship between humans and their environment. Offered by Philosophy (p. 442). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 644: Business and Organizational Ethics. 3 credits.
Examines the application of ethics in business and organizational settings, and the necessity for ethical development within organizational culture. Offered by Philosophy (p. 442). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 645: Research Ethics. 3 credits.
Examines how ethical theories, concepts, and principles shape research guidelines. Students learn to identify ethical issues in research, to reflect on them critically, and to respond effectively. Designed for students in the humanities, social sciences, life sciences, and health sciences. Offered by Philosophy (p. 442). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 681: Figures and Topics in Ancient Philosophy. 3 credits.
Examines major philosophical authors, texts, and topics of the ancient period and their influence on philosophical thought. May cover Plato, Aristotle, or the pre-Socratic philosophers. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 682: Figures and Topics in Early Modern Philosophy. 3 credits.
Examines major philosophical authors, texts, and topics of the early modern period and their influence on philosophical thought. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 683: Contemporary Philosophical Figures. 3 credits.
Examines major recent philosophical authors, texts, and topics, and their influence on philosophical thought. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 693: Directed Readings in Philosophy. 3 credits.
Directed readings and research on a specific topic in philosophy chosen by student and instructor. Offered by Philosophy (p. 442). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 694: Special Topics in Contemporary Philosophy. 3 credits.
Topics vary. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the term for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

PHIL 720: Nietzsche and his Readers. 3 credits.
Reading of major texts of Nietzsche and some of his most influential interpreters and critics. Offered by Philosophy (p. 442). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 721: Advanced Seminar in Philosophy. 3 credits.
Close study of selected topics in current philosophical discourse. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the term.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 733: Current Issues in Cognitive Science. 3 credits.
Examines current areas of investigation in cognitive science and philosophy of mind such as nature of consciousness, and representational and connectionist theories of mind. Notes: May be repeated for credit when topic is different. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission to master's program in Philosophy, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHIL 799: Thesis. 1-6 credits.
Develop research and write an original thesis under the direction of their thesis director. Offered by Philosophy (p. 442). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Completion of 24 credits, approval of thesis proposal, and permission of instructor (thesis director).

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Physical Education (PHED)

100 Level Courses

PHED 199: Introduction to Health and Physical Education. 1 credit.
Uses best practices to introduce to potential teacher candidates current health and physical education teaching issues. Introduces terminology specific to teaching, and concepts such as standards of learning, planning, assessment, curriculum developments, and risk management. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

PHED 200: Professional Dimensions of Health, Recreation, and Physical Education. 3 credits.
Traces historical foundations of health, recreation, physical education, and sport. Notes: Open to nonmajors. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 202: Teaching Skillful Movement. 3 credits.
Covers planning and presenting lessons on numerous motor skills using varied teaching strategies in a peer teaching setting. This course must be complete within 5 years of student teaching. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 218: Technology in Health and Physical Education. 2 credits.
Develops technology skills to support health and physical education instruction in school settings. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 273: Net and Target Games. 3 credits.
Skill and content knowledge in net and target games. Includes skill progression, strategies, officiating, and authentic assessment in games such as volleyball, golf, tennis, and badminton. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 274: Dance and Educational Gymnastics. 2 credits.
Skill and content knowledge in dance, rhythms, and educational gymnastics. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 275: Field and Invasion Games. 3 credits.
Skill and content knowledge in field and invasion games. Includes skill progression, strategies, officiating, and authentic assessment in activities such as softball, basketball, soccer, field events, and Ultimate Disc. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 276: Health-Related Fitness Education. 3 credits.
Prepares future physical educators to develop, implement, and assess fitness concepts, and strategies to K12 students. Incorporates basic nutritional knowledge needed to live a healthy lifestyle. Requires fitness tests participation. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

PHED 306: Psychomotor Learning. 3 credits.
Analyzes psychological aspects, learning theory, and practice conditions for learning motor skills. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 308: Adapted Physical Education. 3 credits.
Introduces disabilities in public schools. Covers national standards, federal legislation, IEPs, and developmental inclusion models. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Enrollment limited to students in a Bach of Science in Education degree.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 320: Student Assessment in Health and Physical Education. 3 credits.
Examines assessment purposes and introduces different assessment procedures that measure student achievement in the different domains of behaviors in health and physical education. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 340: Social and Cultural Issues in Physical Education. 3 credits.
Studies contemporary and historical perspectives on socio-cultural and philosophical issues influencing American public schooling and physical education teacher preparation, including race, culture, ethnicity, nationality, globalization, socioeconomic status, gender, sexuality, ability, obesity, and urbanization. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
PHED 360: Sport Based Youth Development. 3 credits.
An interdisciplinary examination of current trends and issues in youth sport, with a focus on non-school based community programs. Emphasis is placed on the structural characteristics of sport and physical activity programs as they pertain to proper development of children and adolescents. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts. Equivalent to SRST 360.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses
PHED 403: Elementary School Instruction in Physical Education. 3 credits.
Covers content, knowledge, and teaching methods for K-6 physical education. Requires field experience. Must be taken within one year of student teaching. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: PHED 273, 274, 275, and PHED 306 (may be taken concurrently).

Registration Restrictions:
Required Prerequisite: PHED 202C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Physical Education.

Enrollment limited to students in a Bach of Science in Education degree.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 404: Middle and High School Instruction in Physical Education. 3 credits.
Examines school curriculum content, and teaching practices appropriate for middle and high school physical education programs. Requires field experience. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: PHED 403C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Physical Education.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 415: Student Teaching in Physical Education. 12 credits.
Provides supervised clinical experience for a full semester in approved schools. Requires experiences in elementary and secondary school settings. Includes participation in pre-service workshop and related activities, and weekly seminars. Note: Completion of all Mason Core and program coursework, and acceptance into Student Teaching. PHED 415 must be completed within 5 years of PHED 202. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Mason Core: Capstone (p. 142)

Registration Restrictions:
Required Prerequisites: ATEP 120D, 300D, BIOL 125D, EDRD 300D, EDUC 302C, HEAL 110C, 200D, 405C, KINE 310D, PHED 218D, 276D, 308C, 320D, 340D, 404D and PRLS 316D.
D Requires minimum grade of D.
C Requires minimum grade of C.

Schedule Type: Internship
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 480: Special Topics. 1-3 credits.
Focuses on selected topics of interest in specialized areas of exercise science, kinesiology, or health promotion. See course description in the Schedule of Classes. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHED 499: Independent Study in Physical Education and Fitness. 1-3 credits.
Study of a problem area in physical education research, theory, or practice under direction of faculty member. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: Completion of 90 hours and Permission of Chair.

Registration Restrictions:
Enrollment is limited to students with a major in Health Education, Health, Fitness Rec Resrcs, Individualized Study, Nursing, Physical Education (Special), Physical Education or Parks, Rec, Leisure Studies.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

600 Level Courses
PHED 660: Research Reading Seminar in Physical Education. 3 credits.
Provides an overview of the current and past research in the field of physical education through an in-depth analysis, synthesis, and discussion of research. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a concentration in ASTL-Physical Education.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHED 670: Analysis of Teaching in Physical Education. 3 credits.
Presents variety of research techniques for studying teacher and learner behaviors in physical education, engaging the teacher as researcher and grant writer. Goal is to prepare teachers to be leaders in their field. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.
Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHED 672: Curriculum and Assessment in Physical Education. 3 credits.
Provides knowledge of curriculum models and assessment strategies in standards-based physical education program. Studies curriculum models such as sport education and adventure education. Examines traditional and alternative assessment. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHED 673: Motor Development for Special Populations. 3 credits.
Provides knowledge that focuses on individuals with orthopedic, sensory, and learning disabilities in physical education setting. Areas of focus include development of motor patterns and skills assessment, and planning and instruction for students with disabilities. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: PHED 670.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHED 680: Mentoring and Supervising in Physical Education. 3 credits.
Prepares mentors and supervisors of preservice and in-service teachers in physical education. Topics include professional dispositions, assessment and evaluation, adult learners, counseling and communication, providing feedback, and reflection and inquiry into the profession. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: PHED 670.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 103: Physics and Everyday Phenomena I. 4 credits.
The course uses basic physics concepts from the areas of mechanics and thermodynamics to explain a wide range of everyday phenomena, such as how we walk and drive, how a ship floats, how clothing keeps us warm, and why it rains when we have a low pressure system. Notes: For nonscience majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 104: Physics and Everyday Phenomena II. 4 credits.
The course uses basic physics concepts from the areas of light, sound, electricity, magnetism, and modern physics to explain a wide range of everyday phenomena. Topics include how we speak, hear, and see, what to do if the circuit breaker keeps tripping, how your computer stores and displays data, how rainbows and northern lights form, and the basic nature of matter. Notes: For nonscience majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Recommended Prerequisite: PHYS 103.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 106: The Quantum World: A Continuous Revolution in What We Know and How We Live. 3 credits.
This course presents quantum physics that revolutionized the 20th Century and continues to evolve. In addition to presenting basic concepts, the course will discuss various applications involving quantum phenomena including quantum computers and quantum teleportation. The course will be a historical journey through the quantum science that many of its founders, such as Einstein, could not accept, and a peek into a possible future. Notes: For non-science majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science Overview (p. 142)
**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 111: Introduction to the Fundamentals of Atmospheric Science.** 3 credits.
An overview of the Earth’s atmosphere, its history, and the physical and chemical processes that determine its characteristics. The focus is on key concepts from thermodynamics, radiation, chemistry, and dynamics that are essential for understanding the state, variability, and long term evolution of the atmosphere, especially in the context of comparisons with other planetary atmospheres. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to CLIM 111.

**Mason Core:** Natural Science with Lab, Encore: Sustainability (p. 142)

**Specialized Designation:** Green Leaf Related Course

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 160: University Physics I.** 3 credits.

**Mason Core:** Natural Science with Lab (p. 142)

**Registration Restrictions:**
**Required Prerequisites:** MATH 114°C or 116°C.

* May be taken concurrently.

C Requires minimum grade of C.

**Schedule Type:** Lecture, Recitation

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 161: University Physics I Laboratory.** 1 credit.
Experiments in mechanics, including techniques for recording, graphically and statistically analyzing, and reporting data. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Mason Core:** Natural Science with Lab (p. 142)

**Registration Restrictions:**
**Required Prerequisite:** PHYS 160°C.

* May be taken concurrently.

C Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 170: Introductory Modern Physics I.** 3 credits.
The first of a two-course, calculus-based introductory physics sequence. Topics include conservation laws, special relativity, quantum physics, thermal physics, Newton’s laws, and electromagnetism. PHYS 170 does not satisfy the prerequisite for PHYS 260. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to PHYS 160.

**Registration Restrictions:**
**Required Prerequisite:** MATH 113°C.

* May be taken concurrently.

C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 171: Introductory and Modern Physics I.** 3 credits.
The first of a two-course, calculus-based introductory physics sequence. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** 24 credits and 2.5 GPA in physics and mathematics.

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**200 Level Courses**

**PHYS 225: Problems in Physics I.** 1-3 credits.
Individual study of physics problems of current interest. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 3 credits.
PHYS 243: College Physics I. 3 credits.
The first of a two-semester algebra-based physics sequence with emphasis on topics of classical and modern physics of particular importance to science majors. Topics include principles of mechanics and heat. Facility in algebra and trigonometry is assumed. PHYS 243 is prerequisite to PHYS 245. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 244: College Physics I Lab. 1 credit.
Laboratory portion of two-semester basic physics course. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 245: College Physics II. 3 credits.
The second of a two-semester algebra-based physics sequence with emphasis on topics of classical and modern physics of particular importance to science majors. Topics include principles of electricity, magnetism, optics, and atomic and nuclear physics. Facility in algebra and trigonometry is assumed. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Registration Restrictions:
Required Prerequisite: PHYS 243. C
* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 246: College Physics II Lab. 1 credit.
Laboratory portion of two-semester basic physics course. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 251: Introduction to Computer Techniques in Physics. 3 credits.
Introduction to using computers in physics based on examples from mechanics and astronomy. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Info Tech (without Ethics) (p. 142)

Registration Restrictions:
Required Prerequisite: PHYS 160. C
* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 260: University Physics II. 3 credits.
Waves, electricity, and magnetism. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to PHYS 270.

Mason Core: Natural Science with Lab (p. 142)

Registration Restrictions:
Required Prerequisites: PHYS 160 and (MATH 213 or 215). C
* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 261: University Physics II Laboratory. 1 credit.
Experiments in mechanics, electricity, and magnetism, including techniques for recording, graphically and statistically analyzing, and reporting data. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Registration Restrictions:
Required Prerequisites: PHYS 161 and 260. C
* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 262: University Physics III. 3 credits.

Mason Core: Natural Science with Lab (p. 142)

Registration Restrictions:
Required Prerequisite: C or higher in PHYS 261.

Recommended Prerequisite: PHYS 260. C
* Requires minimum grade of C.
Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 263: University Physics III Laboratory. 1 credit.
Experiments in optics and modern physics, including techniques for recording, graphically and statistically analyzing, and reporting data. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Natural Science with Lab (p. 142)

Registration Restrictions:
Required Prerequisites: PHYS 261C and 262C.
\* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 265: Intermediate University Physics Laboratory. 3 credits.
Experiments in mechanics, electricity, and magnetism with emphasis on data analysis using state-of-the-art tools. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: PHYS 251C and 260C.
C Requires minimum grade of C.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 266: Introduction to Thermodynamics. 1 credit.
Students may not receive credit for both PHYS 262 and 266. Laws of thermodynamics, kinetic theory of gases, heat engines, and entropy. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: PHYS 260C.
C Requires minimum grade of C.

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 270: Introductory and Modern Physics II. 3 credits.
The second of a two-course, calculus-based introductory physics sequence. Topics include conservation laws, special relativity, quantum physics, thermal physics, Newtons laws, and electromagnetism. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to PHYS 260.

Registration Restrictions:
Required Prerequisites: PHYS 170C and MATH 114C.
\* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

PHYS 301: Analytical Methods of Physics. 3 credits.
Analytical methods in the Physical Sciences. Provides a comprehensive introduction to the areas of mathematical physics. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: MATH 214C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 303: Classical Mechanics. 3 credits.
Motion of a particle in one, two, and three dimensions; systems of particles; noninertial coordinate systems; and equations of Lagrange and Hamilton. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: PHYS 260C and 301C.
\* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 305: Electromagnetic Theory. 3 credits.

Registration Restrictions:
Required Prerequisites: PHYS 260C and 301C.
\* May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 306: Wave Motion and Electromagnetic Radiation. 3 credits.
Vibrating string, plane waves, interference, diffraction, polarization, electromagnetic waves, dispersion, and relativity. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Recommended Corequisite: MATH 214.

Registration Restrictions:
Required Prerequisite: PHYS 305C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 307: Thermal Physics. 3 credits.
Classical concepts of energy and temperature, basic definitions, first and second laws of thermodynamics, properties of pure substances, and equations of state. Introduction to classical and quantum statistics and
their application to physical systems. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** PHYS 260\(^c\).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 308: Modern Physics.** 3 credits.
Introduces relativity, quantum mechanics, and selected topics in modern physics. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisite:** PHYS 260\(^c\).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 310: Physics of Semiconductor Materials and Processing.** 3 credits.
Survey of the electronic and structural properties of semiconductors and the physics of semiconductor processing. Topics to be discussed include crystal growth, crystal defects, thin films, thermal properties, lithography, and characterization. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** PHYS 160\(^c\), 260\(^c\) and 262\(^c\).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 311: Instrumentation.** 3 credits.
Introduction to basic analog and digital circuits, circuit design and simulation, and data acquisition. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** PHYS 251\(^c\) and 261\(^c\).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 312: Waves and Optics.** 3 credits.
Laboratory survey of wave and optical phenomena and associated instrumentation. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** PHYS 251\(^c\) and 261\(^c\).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 325: Intermediate Methods of Experimental Physics.** 3 credits.
Experiments in mechanics, electromagnetism, and optics with emphasis on data acquisition and analysis using state-of-the-art-tools. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** PHYS 251\(^c\) and 261\(^c\).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 326: Problems in Physics II.** 1-3 credits.
Individual study of physics problems of current interest. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** 60 credits and 2.500 GPA in physics and mathematical sciences.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 331: Fundamentals of Renewable Energy.** 3 credits.
Introduces the physical principles for a range of renewable energies, including solar, wind, hydropower and geothermal. Demonstrates how the application of methods and principles of physics allow us to understand the basic operation, advantages, limitations and relative merits of various renewable energy sources. Designed for students majoring in the sciences or engineering but useful for students interested in science policy, business, global change and sustainable development. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Specialized Designation:** Green Leaf Related Course

**Registration Restrictions:**
**Required Prerequisite:** PHYS 260\(^c\).
\(^c\) Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PHYS 332: Solar Cells.** 3 credits.
Covers the physics of solar cells, basics of semiconductors, pn junctions, basic structure of solar cells, the latest advances in solar cell materials, and concepts for improving the efficiency of solar cells. Solar cell design based on silicon, copper indium gallium selenide, gallium arsenide, organic solar cells, dye-sensitized solar cells, quantum dots, and nanowires will also be reviewed. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry.

**Registration Restrictions:**
**Required Prerequisites:** (PHYS 260\(^c\) and 261\(^c\)) or (PHYS 245\(^c\) and 246\(^c\)).
\(^c\) Requires minimum grade of C.
PHYS 346: Quarks to Strings. 3 credits.
An non-technical introduction to the Standard Model of Elementary Particles and String Theory, in the context of the philosophy of science. Conceptual mastery will be demonstrated through writing assignments rather than calculations. Notes: This course does not satisfy elective-category requirements for the physics and astronomy majors. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Registration Restrictions:
Required Prerequisite: PHYS 262C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 370: Molecular Biophysics. 3 credits.
Offers a broad introduction into molecular biophysics. Demonstrates that the application of methods of physics provides a unique opportunity to tackle complex biological programs. Mainly designed for students majoring in physics or chemistry but also useful for biology majors interested in bioinformatics and computational biology. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to BINF 470.

Registration Restrictions:
Required Prerequisites: (PHYS 307C) or (CHEM 331C and 332C).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 385: Materials Science with Applications to Renewable Energy. 3 credits.
Introduction to basic concepts and methods of materials science. Review of metallic alloys and compounds, ceramic materials, ionic solids, semiconductors, polymers, and nano-structured materials. Mechanical, thermal, electric, magnetic and optical properties of materials. Theoretical background and experimental methods of materials characterization. Various materials applications with emphasis on renewable energy. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Registration Restrictions:
Required Prerequisites: PHYS 262C, 266C, 307C or ME 211C or (PHYS 245C and MATH 113C).
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 390: Topics in Physics. 1-4 credits.
Selected topics in physics not covered in fixed-content courses. Offered by Physics & Astronomy (p. 757). May be repeated within the term for a maximum 9 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 391: Special Topics in Physics. 1-4 credits.
Special topics in physics not covered in fixed-content courses. Notes: This course does not satisfy elective-category requirements for the physics or astronomy majors. Offered by Physics & Astronomy (p. 757). May be repeated within the term for a maximum 9 credits.

400 Level Courses

PHYS 402: Introduction to Quantum Mechanics and Atomic Physics. 3 credits.
Experimental basis of quantum mechanics; the wave function; systems in one, two, and three dimensions. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to PHYS 502.

Registration Restrictions:
Required Prerequisites: PHYS 303C, 305C and 308C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 403: Quantum Mechanics II. 3 credits.

Registration Restrictions:
Required Prerequisite: PHYS 402C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 405: Honors Thesis in Physics I. 3 credits.
Project chosen and completed under the guidance of a faculty member, which results in a thesis. Students may receive no more than 6 credits of PHYS 405, 406, 408, and 409. Notes: PHYS 405 is a prerequisite for PHYS 406. An oral progress report is required for PHYS 405. Oral and written presentations are required for PHYS 406. Students may receive no more than 6 credits of PHYS 405, 406, 408, and 409. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: PHYS 251C, 301C, 303C and 305C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Physics.
Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 406: Honors Thesis in Physics II. 3 credits.
Project chosen and completed under the guidance of a faculty member, which results in a thesis. Students may receive no more than 6 credits of PHYS 405, 406, 408, and 409. Notes: PHYS 405 is a prerequisite for PHYS 406. An oral progress report is required for PHYS 405. Oral and written presentations are required for PHYS 406. Students may receive no more than 6 credits of PHYS 405, 406, 408, and 409. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: PHYS 405<sup>C</sup>, C Requires minimum grade of C.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 407: Senior Laboratory in Modern Physics. 4 credits.
Advanced experiments in modern physics: electronics, optics, condensed matter, and nuclear physics. Techniques for recording, graphically and statistically analyzing, and reporting data. Typical experiments include the Frank-Hertz experiment, Hall Effect, electron spin resonance, nuclear magnetic resonance and optical pumping. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Capstone (p. 142)

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: PHYS 251<sup>C</sup>, 311<sup>C</sup>, 312<sup>C</sup> and 402<sup>C</sup>, C Requires minimum grade of C.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 408: Senior Research. 2-3 credits.
Work under guidance of faculty member on research project in experimental or theoretical physics. Students may receive no more than 6 credits of PHYS 405, 406, 408, and 409. Notes: May be repeated with permission of the Physics Department. Students may receive no more than 6 credits of PHYS 405, 406, 408, and 409. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: PHYS 251<sup>C</sup>, 301<sup>C</sup>, 303<sup>C</sup> and 305<sup>C</sup>, C Requires minimum grade of C.

Schedule Type: Research

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 409: Physics Internship. 3 credits.
On-the-job experience for physics majors in industry or government laboratories including summer programs. Students may receive no more than 6 credits of PHYS 405, 406, 408, and 409. Notes: May be repeated with permission of the Department of Physics & Astronomy. Students may receive no more than 6 credits of PHYS 405, 406, 408, and 409. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: PHYS 251<sup>C</sup>, 301<sup>C</sup>, 303<sup>C</sup> and 305<sup>C</sup>, C Requires minimum grade of C.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 410: Computational Physics Capstone. 4 credits.
Applications of computational techniques to simulate, visualize, and solve numerically problems from a variety of physical systems. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Mason Core: Capstone (p. 142)

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: PHYS 303<sup>C</sup>, 305<sup>C</sup>, 251<sup>C</sup> and 265<sup>C</sup>, C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 412: Solid State Physics and Applications. 3 credits.
Crystal structures, binding, lattice vibrations, the free electron model, metals, semiconductors and semiconductor devices, superconductivity, and magnetism. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to PHYS 512.

Registration Restrictions:
Required Prerequisites: PHYS 402<sup>C</sup> or 502<sup>B</sup>, C Requires minimum grade of C, B Requires minimum grade of B-.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 416: Special Topics in Undergraduate Physics. 1 credit.
Emphasizing the breadth of physical understanding needed to approach physics problems, the course reviews undergraduate physics through assigned, GRE test-like, problems. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Recommended Prerequisite: A grade of C or better in all other Physics Core Courses (physics majors) or all other required Physics Courses (astronomy majors).

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
PHYS 417: Geophysics. 3 credits.
Basic principles of geophysics including gravity, magnetism, and seismic reflection and refraction. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to GEOL 417.

Recommended Prerequisite: GEOL 101, MATH 113, one year of PHYS or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 428: Relativity. 3 credits.
Special relativity; four-dimensional space-time; general relativity; non-Euclidean geometries, geodesics, and field equations; tests of general theory of relativity; black holes; cosmology; models of the universe; remnant blackbody radiation; big bang cosmology; thermodynamics; and the universe. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: PHYS 303C and 305C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 440: Nuclear and Particle Physics. 3 credits.
Accelerators, detectors and related electronics; nuclear and elementary particle structure; symmetries and conservation laws; the electromagnetic, weak, and hadronic interactions; nuclear models; the quark model; and nuclear science and technology. Offered by Physics & Astronomy (p. 757). Limited to three attempts. Equivalent to PHYS 540.

Registration Restrictions:
Required Prerequisites: PHYS 402C or 502B-.
C Requires minimum grade of C.
B- Requires minimum grade of B-.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 465: Planetary Atmospheres and Ionospheres. 3 credits.
An interdisciplinary introduction to the fundamental physics and chemistry of the atmosphere-ionosphere system. The focus is on the governing equations of atmospheric and ionospheric dynamics with a systems (science) approach to the atmosphere-ionosphere coupling processes. Topics include observational and modeling techniques in the Earth’s upper atmosphere as well as recent progress in planetary atmosphere-ionospheres and planetary missions. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: PHYS 260C and 301C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PHYS 475: Atmospheric Physics. 3 credits.
Introduction to basic physical and chemical processes that operate in the Earth’s atmosphere. Emphasis on those concepts that provide a global description of the current atmospheric state and those processes that relate to global change and atmospheric evolution. Topics include equilibrium structure, radiative transfer models, thermodynamics of various atmospheric layers, and the various processes defining these layers. Offered by Physics & Astronomy (p. 757). Limited to three attempts.

Recommended Prerequisite: PHYS 260 and 262.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

PHYS 502: Introduction to Quantum Mechanics and Atomic Physics. 3 credits.
Experimental basis of quantum mechanics, the wave function, and systems in one, two, and three dimensions. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: PHYS 300C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 510: Computational Physics I. 3 credits.
Study and development leading to computer simulations of various physical systems. Requires the study and development of computational techniques and numerical algorithms to obtain both numerical results and visualization of these results. Application to individual physical processes taking place in a variety of physical systems. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: PHYS 303C and 305C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
Crystal structures, binding, lattice vibrations, the free electron model, metals, semiconductors and semiconductor devices, superconductivity, and magnetism. Offered by Physics & Astronomy (p. 757). May not be repeated for credit. Equivalent to CSI 687, PHYS 412.

Registration Restrictions:
Required Prerequisites: PHYS 402$^C$ or 502$^B$.
\(C\) Requires minimum grade of \(C\).
\(B\) Requires minimum grade of \(B\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Classical electromagnetic theory with applications. Topics include electrostatics, magnetic fields and materials, electromagnetic wave propagation, waveguides, transmission lines, radiation, and antennas. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: PHYS 305$^C$, 306$^C$, MATH 313$^C$ and 314$^C$.
\(C\) Requires minimum grade of \(C\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 515: *Modern Instrumentation*. 3 credits.
Topics include sensors for radiation, particles, electric and magnetic fields, pressure, and motion; electronic instruments, computer data collection, instrumentation noise and noise reduction methods; and specialized instrumentation systems for various areas of applied physics. Offered by Physics & Astronomy (p. 757). May not be repeated for credit. Equivalent to CHEM 620.

Registration Restrictions:
Required Prerequisite: PHYS 513$^B$.
\(B\) Requires minimum grade of \(B\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 540: *Nuclear and Particle Physics*. 3 credits.
Accelerators, detectors and related electronics; nuclear and elementary particle structure; symmetries and conservation laws; the electromagnetic, weak, and hadronic interactions; nuclear models; the quark model; and nuclear science and technology. Offered by Physics & Astronomy (p. 757). May not be repeated for credit. Equivalent to PHYS 440.

Registration Restrictions:
Required Prerequisites: PHYS 402$^C$ or 502$^B$.
\(C\) Requires minimum grade of \(C\).
\(B\) Requires minimum grade of \(B\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 575: *Atmospheric Physics I*. 3 credits.
Introduction to basic physical and chemical processes that operate in the Earth’s atmosphere. Emphasis on those concepts that provide a global description of the current atmospheric state and those processes that relate to global change and atmospheric evolution. Topics include equilibrium structure, radiative transfer models, thermodynamics of various atmospheric layers, and the various processes defining these layers. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: PHYS 305$^C$, 262$^C$ and 260$^C$.
\(C\) Requires minimum grade of \(C\).

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 580: *Selected Interdisciplinary Topics*. 3 credits.
Selected interdisciplinary topics with a strong physics content not covered in fixed-content courses. Notes: PHYS 580 cannot be used to satisfy degree requirements for PHYS (PhD), PHAE (MA) in the standard, applied physics, and engineering physics emphases. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PHYS 581: Topics in Renewable Energy.** 3 credits.
The course covers the physical principles for a range of renewable energies, including solar, wind, hydropower and geothermal using mathematical and other types of analysis. The course demonstrates how the application of methods and principles of physics allow us to understand the basic operation, advantages, limitations and relative merits of various renewable energy sources. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: PHYS 262C and 266C.
C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PHYS 590: Selected Topics in Physics.** 1-6 credits.
Selected topics from recent theoretical or experimental developments and applications. Satisfies needs of professional community to keep abreast of current developments. Offered by Physics & Astronomy (p. 757). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Required Prerequisites: (PHYS 502B- or 684B-) and (PHYS 513B- or 685B-).
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PHYS 600: Special Topics in Physics.** 1-6 credits.
In-service course to strengthen and update teachers' knowledge of physics and astronomy. Offered by Physics & Astronomy (p. 757). May be repeated within the term.

**Registration Restrictions:**

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**600 Level Courses**

**PHYS 600: Special Topics in Physics.** 1-6 credits.
In-service course to strengthen and update teachers' knowledge of physics and astronomy. Offered by Physics & Astronomy (p. 757). May be repeated within the term.

**Registration Restrictions:**

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**PHYS 611: Electro-optics.** 3 credits.
Optical modulators, display devices, types and operation of lasers, mode locking, Q-switching, photodetectors, optical fibers. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: PHYS 502B- or 684B-.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PHYS 612: Physics of Modern Imaging.** 3 credits.
Study of imaging methods using acoustic and electromagnetic waves to probe extended objects, and mathematical transformations to produce images from scattered waves. Topics include classical imaging, physical optics, Fourier transform, holography, tomography, seismic mapping, underwater acoustic imaging and mapping, side-looking radar, antenna arrays, applicable computer methods. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: PHYS 513B- or 685B-.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PHYS 613: Computational Physics II.** 3 credits.
Study of diverse physical systems with emphasis on modeling and simulation. Study and development of numerical algorithms and techniques to obtain both numerical results and visualization of these results. Projects undertaken will draw from such areas as many-body orbital dynamics, molecular interactions, quantum systems, radiative
transfer in high-temperature plasmas, stellar interiors, hydrodynamics, and cosmology. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: PHYS 510B.
B Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 614: Thermodynamics and Kinetics of Materials. 3 credits.
Advanced thermodynamics and physical kinetics with applications to materials science. The course covers an axiomatic formulation of thermodynamics, theory of phase transformations, kinetic theory of reactions and diffusion processes in solids, and interface phenomena. Possible applications considered in the course include processing and fabrication of semiconductor materials, metal oxidation and corrosion, diffusion-controlled phase growth in solid solutions, shape memory alloys, and small-size effects in physical properties of materials. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (MATH 113C, 114C, 213C and 307C) and (PHYS 262C or 266C).
C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 628: Relativity. 3 credits.
Special relativity; four-dimensional space-time; general relativity; non-Euclidean geometries, geodesics, and field equations; tests of general theory of relativity; black holes; cosmology; models of the universe; remnant blackbody radiation; big bang cosmology; thermodynamics; and the universe. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: PHYS 303, 305, or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 630: Introduction to Biophysics. 3 credits.
Introduces biophysics, focusing on physical and chemical concepts and their relation to rapidly expanding interdisciplinary interfaces among
biology, chemistry, and physics. Reveals multiscale nature of biophysics, and includes exploration of macroscopic and microscopic applications. Offered by Physics & Astronomy (p. 757). May not be repeated for credit. Equivalent to BINF 740.

**Recommended Prerequisite:** Undergraduate degree in physics, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PHYS 640: Finite Element Analysis of Solids and Fluids.** 3 credits.
Introduction to fundamentals of finite element analysis of solid, structural, fluid, and heat transfer problems. Topics include governing equations for heat transfer, solid and fluid mechanics; finite element formulation and solution procedures; appropriate use of finite element methods including setting up an appropriate model, interpreting results, and assessing solution error. Students are expected to develop their own finite element code. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Recommended Prerequisite:** PHYS 620 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PHYS 665: Planetary Atmospheres and Ionospheres.** 3 credits.
An interdisciplinary introduction to the fundamental physics and chemistry of the atmosphere-ionosphere system. The focus is on the governing equations of atmospheric and ionospheric dynamics with a systems (science) approach to the atmosphere-ionosphere coupling processes. Topics include observational and modeling techniques in the Earth's upper atmosphere as well as recent progress in planetary atmosphere-ionospheres and planetary missions. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

**Recommended Prerequisite:** PHYS 262, MATH 214.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 690: Engineering Thermodynamics. 3 credits.
Introduction to the basic concepts used in engineering when dealing with thermodynamic problems. Topics include equations of state, phase changes, latent heat, internal energy, enthalpy, entropy, and analysis of basic thermodynamic cycles such as Carnot cycles, power generation, internal combustion engines and refrigeration processes. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: PHYS 620 or PHYS 705 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 694: Applied Mechanics of Solids. 3 credits.
Introduction to the physical laws, mathematical formulations, and computer algorithms that are used to predict material and structural response subjected to mechanical or thermal loading. Topics covered includes mathematical description of solids, equations of motion and equilibrium, constitutive equations, principle of virtual work, and fracture mechanics. Analytical technique and numerical method are also covered. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 695: Applied Fluid Mechanics. 3 credits.
Introduction to concepts of fluid mechanics and solving its equations using numerical techniques. The concepts and methods of computational fluid dynamics (CFD) will be introduced. Topics include fluid mechanics equations, spatial and temporal discretization, finite difference and finite volume schemes, accuracy and convergence. This course requires writing of code to solve the governing equations of fluid mechanics. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: PHYS 620 or PHYS 705 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

PHYS 701: Theoretical Physics. 3 credits.
Study of the physical basis for selection of particular mathematical tools in physics; topics include curvilinear coordinates, tensors, matrices, differential equations, special functions, complex variables, and group theory. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: Undergraduate degree in physics or permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 703: Seminar in Physics. 1 credit.
A general seminar course that combines invited seminars from faculty (both internal and external) with graduate student seminars. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PHYS 705: Classical Mechanics. 3 credits.
Study of classical mechanics; topics include variational principles, constrained motion, Lagrangian and Hamiltonian mechanics, canonical transformations, and applications (central forces, rigid-body motion, oscillations). Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: Undergraduate degree in physics or permission of instructor.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 711: Statistical Mechanics. 3 credits.
Topics include thermodynamics, kinetic theory, ensemble theory, quantum statistics, and applications. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Recommended Prerequisite: Undergraduate degree in physics or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 736: Computational Quantum Mechanics. 3 credits.
Study of the fundamental concepts of quantum mechanics from a computational point of view, review of systems with spherically symmetric potentials, many-electron-atom solutions to Schrodinger’s equation, electron spin in many-electron systems, atomic structure calculations, algebra of many-electron calculations, Hartree-Fock self-consistent field method, molecular structure calculations, scattering theory computations, and solid-state computations. Offered by Physics & Astronomy (p. 757). May not be repeated for credit. Equivalent to CHEM 736, CSI 783.

Registration Restrictions:
Required Prerequisites: PHYS 502B- and 510B-.

B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 760: Space Plasma Physics. 3 credits.
Covers plasma processes involved in today’s space physics research, including different regimes of plasma; basic concepts in kinetic, fluid, and MHD plasmas; and existent waves in these media. Also covers basics of shocks, discontinuities, transport and acceleration of particles such as cosmic rays, reconnection, and MHD instabilities. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: PHYS 513B- or 685B-.

B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 780: Advanced Selected Topics in Physics. 3 credits.
Selected topics in physics not covered in fixed-content physics courses. Offered by Physics & Astronomy (p. 757). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 784: Quantum Mechanics II. 3 credits.
Advanced topics in quantum mechanics. Covers density and tensor operators, approximation methods, scattering theory, and identical particles. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: PHYS 684B-.

B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 785: Classical Electrodynamics II. 3 credits.
Advanced topics in electrodynamics. Covers radiation, scattering and diffraction, special relativity, relativistic particle dynamics, Lorentz transformation, 4-vectors, transformation of fields, charges and currents, Thomas precession, retarded potentials, and radiation from moving charges. Offered by Physics & Astronomy (p. 757). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: PHYS 685B-.

B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PHYS 786: Quantum Field Theory of Particles and Condensed Matter. 3 credits.
Introduction to quantum field theory and its applications in particle and condensed matter physics. Topics: second quantization, scalar bosonic and fermionic fields, symmetries and conserved currents, Dirac equation, gauge theory, quantum electrodynamics, Feynman diagrams, renormalization, Fermi liquid, symmetry breaking, superconductivity, magnetism, path integral, quantum phase transitions to topological order,
PHYS 796: Directed Reading and Research. 1-12 credits. Reading and research on a specific topic in physics or related field under the direction of a faculty member. Offered by Physics & Astronomy (p. 757). May be repeated within the term.

Required Prerequisite: PHYS 684

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

PHYS 798: Research Project. 3 credits. Project chosen and completed under the guidance of a graduate faculty member, which results in an acceptable technical report. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 6 credits.

Required Prerequisite: 9 graduate credits, and permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Research

Grading: This course is graded on the Graduate Special scale. (p. 84)

PHYS 998: Doctoral Dissertation Proposal. 1-12 credits. Covers development of a research proposal under the guidance of a dissertation director and the doctoral committee. The proposal forms the basis for the doctoral dissertation. Notes: No more than 24 credits in ASTR/PHYS 998 and ASTR/PHYS 999 may be applied toward satisfying doctoral degree requirements in the physics PhD program. Out of the 24, no more than 12 credits of ASTR/PHYS 998 may be applied. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 21 credits.

Recommended Prerequisite: Admission to physics doctoral program and permission of advisor.

Schedule Type: Dissertation

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

PHYS 999: Doctoral Dissertation. 1-12 credits. Doctoral research performed under direction of dissertation director. Notes: No more than 24 credits in ASTR/PHYS 998 and ASTR/PHYS 999 may be applied toward satisfying doctoral degree requirements in the physics PhD program. Offered by Physics & Astronomy (p. 757). May be repeated within the degree for a maximum 24 credits.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

Policy and Government (POGO)

500 Level Courses

POGO 511: Introductory Data Analysis for Policy and Government. 3 credits. Introduces fundamental statistical analysis for analyzing policy, government and other social science data. Focuses on problem definition, problem solving, and how to communicate results to general audience under conditions of uncertainty in public sector. Provides the core foundation for advanced graduate work in data analytics using contemporary statistical software packages. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to PUBP 511.

Registration Restrictions: Required Prerequisite: minimum score of 1 in 'Statistical Screening Exam'.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Graduate Regular scale. (p. 84)

POGO 550: Topics in Policy and Government. 1-3 credits.
Focuses on selected topics in policy and government not covered in fixed-content Schar school courses. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

POGO 580: Topics: Advanced Skills for Policy Professionals. 1-3 credits.
Practical seminar focusing on development of advanced qualitative and quantitative skills for the professional policy world. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 18 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

POGO 611: Advanced Data Analysis for Policy and Government. 3 credits.
Introduces advanced statistical techniques to analyze policy, government and other social science data. Covers classical regression methods and their application to public policy analysis. Covers linear and non-linear regressions using cross sectional, time-series and panel data, and problems associated with applications including specification error, multicollinearity, qualitative variables, heteroskedasticity, serial correlation, and structural identification. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to GOVT 712, PUAD 612, PUBP 705.

Registration Restrictions:
Required Prerequisites: POGO 511C, PUAD 511C, PUBP 511C, GOVT 511C, HAP 502C or 719C.
C Requires minimum grade of C.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

POGO 646: Policy and Program Evaluation. 3 credits.
Practical exploration of assessment techniques used in studying results of public programs and policies, including evaluation of implementation strategies and impacts. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to PUAD 646, PUBP 713.

Registration Restrictions:
Required Prerequisites: POGO 511C, PUAD 511C, PUBP 511C, GOVT 511C, HAP 502C or 719C.
C Requires minimum grade of C.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

700 Level Courses

POGO 730: Global Economic and Human Development. 3 credits.
Interdisciplinary examination of economic and human development in world economy. Introduces alternative concepts and theories of economic and human development, and analytical frameworks for assessing important issues that arise in development process. Topics include colonialism, economic growth, population, health, education, industrialization, and rural development. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to ITRN 718.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

POGO 731: Business and Politics in Emerging Markets. 3 credits.
Examines developing countries that are major destination points for international financial flows and foreign direct investment. Emerging markets have become a major influence in the world economy both because of the potential for growth and the downside risks from economic crises. The course uses the new institutional economics to analyze the interplay of political, economic, and business conditions. Institutional economics is a combination of economics, economic history, and political science. Topics covered include the politics of economic reform, drivers of globalization and investment, the informal sector, and relationships of risk and reward. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to ITRN 757.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)
POGO 750: Topics in Policy and Government. 1-3 credits.
Focuses on selected topics in policy and government not covered in fixed-content Schar school courses. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

POGO 794: Internship. 1-3 credits.
Provides practical work experience in state, federal, or international agencies, or the private or non-profit sector. Requires written project integrating work experience and academic program. Requires permission of program director. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to ITRN 780, PUBP 794.

Recommended Prerequisite: 12 graduate credits in the program or permission of program director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

POGO 796: Directed Readings and Research. 1-3 credits.
Independent reading and research at master's or doctoral level on specific topic related to policy or government as agreed to by student and faculty member. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 12 credits. Equivalent to BIOD 996, ITRN 790, PUAD 796, PUBP 796.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

200 Level Courses
PORT 201: Intermediate Portuguese I. 3 credits.
Further development of skills in listening, speaking, and writing. Notes: PORT 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: PORT 110, or permission of department.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PORT 202: Intermediate Portuguese II. 3 credits.
Further development of skills in listening, speaking, and writing. Notes: PORT 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: PORT 201, or permission of department

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Professional Development in Education (EDPD)

400 Level Courses
EDPD 402: Professional Development in Elementary Literacy, and Secondary Education. 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in elementary, literacy and secondary education. Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

EDPD 406: Professional Development in Special Education and Disability Research. 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in special education and disability research. Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

500 Level Courses
EDPD 501: Professional Development in Advanced Teacher Research and Practice. 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in advanced teacher research and practices. Notes: Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**EDPD 502: Professional Development in Elementary, Literacy, and Secondary Education.** 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in elementary, literacy and secondary education. Notes: Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Lecture**

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDPD 503: Professional Development in Individual and Organizational Transformation.** 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in individual and organizational transformation. Notes: Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Lecture**

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDPD 504: Professional Development in Learning Technologies.** 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in learning technologies. Notes: Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**EDPD 505: Professional Development in Educational Psychology, Research Methods and Education Policy.** 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in educational psychology, research methods and education policy. Notes: Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Lecture**

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDPD 506: Professional Development in Special Education and Disability Research.** 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in special education and disability research. Notes: Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type: Lecture**

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDPD 507: Professional Development in Health and Human Performance.** 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in health and human performance. Notes: Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**EDPD 508: Professional Development in Sport, Recreation and Tourism.** 1-6 credits.
Provides opportunity for focused study on selected topics or emerging issues in sport, recreation and tourism. Notes: Course may not be applied to a degree program. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 15 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

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**Provost (PROV)**

**100 Level Courses**

**PROV 110: Special Topics.** 1-3 credits.
Exploration of leadership in a specific career field(s); changing nature of that industry; understanding of organizational structures in the field(s); and introduction to career and internship opportunities for students who aspire to a career in that field. Offered by Provost's Office (p. 1190). May be repeated within the term.

**Registration Restrictions:**
Enrollment limited to Non-Degree or Undergraduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Non-Degree Undergraduate Special scale. (p. 84)

**PROV 150: International Experience: Global Understanding.** 0 credits.
This course is designed for students studying abroad for a full semester (e.g. 12-15 credits and not a three week course) to fulfill their Mason Core Global Understanding requirement. Offered by Provost's Office (p. 1190). Limited to three attempts.

**Mason Core:** Global Understanding (p. 142)

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**200 Level Courses**

**PROV 210: Comprehensive Topics in Leadership.** 1-3 credits.
Comprehensive exploration of leadership in a specific career field(s); changing nature of that industry; understanding of organizational structures in the field(s); and introduction to career and internship opportunities for students who aspire to a career in that field. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 3 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**300 Level Courses**

**PROV 301: Great Ideas in Science.** 3 credits.
Nontechnical introduction to ideas that have shaped the growth of science, from the building of Stonehenge to modern theories of the Big Bang. The idea behind each major advance is treated in its historical context, with special attention to its importance in mankind’s understanding of the nature of the universe. Intended for nonscience majors; uses little mathematics. Offered by Provost's Office (p. 1190). Limited to three attempts.

**Mason Core:** Natural Science Overview (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PROV 342: The George Mason Debates in Current Affairs.** 3 credits.
In-depth investigation of one or more contemporary public policy issues. Examines the selected topics as discussed by scholars, public interest groups and think tanks, government officials, and the news media. Texts and guest lecturers presenting a wide range of perspectives are an important feature. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 6 credits.

**Mason Core:** Synthesis (p. 142)

**Recommended Prerequisite:** Completion or concurrent enrollment in all other required general education courses.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**600 Level Courses**

**PROV 601: Thriving in Your Graduate Program.** 1 credit.
Gaining greater insight into student learning theories, the nature of research and scholarship, higher education trends, and the various career paths available to individuals with graduate degrees is important for students in the early stages of their academic programs. This seminar is designed for early career MFA and doctoral students to facilitate their success as graduate students at Mason. Offered by Provost's Office (p. 1190). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

700 Level Courses

PROV 701: Preparing for Academic Careers. 1 credit.
This seminar will be devoted to helping doctoral students explore and prepare for future academic careers and to strengthening their instructional effectiveness. The seminar will provide a clearer understanding of the roles and responsibilities of being a faculty member. Participants will learn how to construct a meaningful statement of teaching philosophy and plan for a course through syllabus design.
Notes: This course does not apply to required credits for doctoral degrees. Offered by Provost’s Office (p. 1190). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Psychology (PSYC)

100 Level Courses

PSYC 100: Basic Concepts in Psychology. 3 credits.
Introduces psychology as scientific discipline. Examines concepts and methods in learning, motivation, development, personality, and measurement. Offered by Psychology (p. 454). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture, Recitation

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

PSYC 211: Developmental Psychology. 3 credits.
Review of major developmental theories including perspectives of childhood, adolescence, adulthood, and old age. Offered by Psychology (p. 454). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 231: Social Psychology. 3 credits.
Study of human behavior development in a social matrix, including such topics as socialization, cultural behavior, group norms, and attitude formation. Offered by Psychology (p. 454). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 260: Basic Research Methods in Psychology. 1-3 credits.
Introduction to research methods in psychology in the context of assisting faculty with research; individualized sections by arrangement with faculty. Methods taught vary but generally include basic data collection and recordkeeping methods in research. Notes: Course culminates in a paper describing techniques learned. No more than 6 credits in PSYC 260, 350, and 460 can be used toward a psychology major. Offered by Psychology (p. 454). May be repeated within the term.

Recommended Prerequisite: A 3.0 overall G.P.A., and a written proposal approved before registration by the instructor and the department chair.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

PSYC 300: Statistics in Psychology. 4 credits.
Descriptive and inferential statistics in design, analysis, and interpretation of psychological research with practical application using computers in laboratory. Notes: Students are strongly encouraged to take PSYC 301 concurrently. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: 6 credits of PSYC and 3 credits of MATH course work or permission of instructor.

Recommended Corequisite: Students are strongly encouraged to take PSYC 301.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 301: Research Methods in Psychology. 4 credits.
General research design in psychology, with emphasis on experimental design and control. Topics include use of human participants in research, reliability and validity, observational methods, and survey and longitudinal designs. Notes: Students are strongly encouraged to take PSYC 300 concurrently. Laboratory work will include designing and running research studies and writing manuscripts using appropriate style and format. Offered by Psychology (p. 454). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: PSYC 100 and either PSYC 300, STAT 250, or STAT 350 or equivalent.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 304: Principles of Learning. 4 credits.
Principles of animal learning, including such topics as classical and operant conditioning, discrimination learning, and animal cognition. Notes: Laboratory projects require working with computer simulations. Offered by Psychology (p. 454). Limited to three attempts.

Specialized Designation: Writing Intensive in Major
Recommended Prerequisite: PSYC 300 or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 309: *Sensation, Perception, and Information Processing.* 4 credits.
Principles of perception, including topics such as psychophysics, perceptual organization, perceptual learning, and perceptual constancies. Notes: Laboratory projects demonstrate and investigate perceptual phenomena. Offered by Psychology (p. 454). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: PSYC 300 and PSYC 301.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 311: *Educational Psychology.* 3 credits.
Enables students to apply psychological principles to the learning process in the classroom context. Examines the theoretical and applied aspects of learning, motivation, human development, personality, assessment, and evaluation in educational settings. Corresponding implications for effective teaching will be discussed. Offered by Psychology (p. 454). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 312: *Child Development.* 3 credits.
Study of human psychological development from conception to adolescence including such topics as genetic factors, emotional and intellectual growth, and environmental influences. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100 or equivalent.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 313: *Adolescent Development.* 3 credits.
Study of the biological and cultural changes accompanying adolescence, including the effect of these changes on emotional, intellectual, and social development. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100 or equivalent.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 317: *Cognitive Psychology.* 3 credits.
An in-depth overview of important topics in cognitive psychology, including memory, attention, pattern recognition, problem solving, reasoning, and psycholinguistics. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: Six credits of psychology or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 320: *Psychological Tests and Measurements.* 4 credits.
Examination and application of principles underlying the theory, interpretation, and administration of psychological tests, including a study of tests of intelligence, achievement, and ability. This course may count for both the Applied Psychology and Experimental Psychology lab requirements or for both the Applied Psychology and Technical Writing requirements. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 300 or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 321: *Clinical Psychology.* 3 credits.
Exames evidence-based psychological assessment and psychotherapy techniques to understand, prevent, and treat psychological distress and dysfunction and promote well-being. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 325 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 322: *Behavior Modification.* 3-5 credits.
Examination of experimental principles of human and animal learning within theoretical framework of applied behavior analysis, including design, implementation, and evaluation of operant intervention programs across a wide variety of human situations. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 324 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 324: *Personality Theory.* 3 credits.
Introduction to classical and contemporary theories of personality, and comparative evaluation of major theories in terms of relevant studies. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 325: *Abnormal Psychology.* 3 credits.
Study of development of abnormal behavior patterns, including such topics as methods of diagnosis and prevention of serious mental disorders such as psychosomatic disorders, psychoses, character...
disorders, and mental retardation. Offered by Psychology (p. 454). Limited
to three attempts.

**Recommended Prerequisite:** PSYC 100 and either PSYC 211, 231, or 324
or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 326: Therapeutic Communication Skills.** 3 credits.
Introduction to understanding and use of basic therapeutic
communication skills used in clinical and counseling psychology. Offered
by Psychology (p. 454). Limited to three attempts.

**Registration Restrictions:**
**Required Prerequisites:** (PSYC 325 C or L325).
C Requires minimum grade of C-.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 327: Psychology in the Community.** 3 credits.
Individual placements in applied psychology settings. Notes: A maximum
of 6 credits of PSYC 327, 328, 421, and 422 can be applied to the
psychology major. Offered by Psychology (p. 454). May be repeated
within the degree for a maximum 6 credits.

**Recommended Prerequisite:** PSYC major with 6 hours of PSYC and
permission of associate chair for undergraduate studies.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 328: Psychology in the Community Laboratory.** 1 credit.
Consists of a one-hour service learning component linked to selected
psychology courses. Notes: A maximum of 6 credits of PSYC 327, 328, 421, and 422 can be applied to the
psychology major. Offered by Psychology (p. 454). May be repeated
within the degree for a maximum 6 credits.

**Recommended Prerequisite:** PSYC major with 6 hours of PSYC and
permission of instructor and associate chair for undergraduate studies.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 333: Industrial and Organizational Psychology.** 3 credits.
Examination of application of psychological principles and methods to
problems commonly encountered in business and industry. Offered by
Psychology (p. 454). Limited to three attempts.

**Recommended Prerequisite:** PSYC 100 and PSYC 300; or permission of
instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 335: Psychology of Creativity and Innovation.** 3 credits.
Creativity and innovation take place in many domains such business,
science and the arts. Learn the distinction between creativity and
innovation. Apply findings from the scientific literature about the
antecedents of creativity and innovation including emotions, cognition,
individual differences, and social contexts. Experiment with ways to
enhance your creativity and skills for innovation. Offered by Psychology
(p. 454). Limited to three attempts.

**Recommended Prerequisite:** PSYC 100 or permission of instructor.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 340: Human Factors Psychology.** 3 credits.
Reviews history and current practice of optimal product and system
design as a function of psychology. Includes a brief history of human
factors psychology, a review of human memory and attentional systems
as they relate to product and system design, and an introduction to
current methods used to analyze and redesign products and systems for
optimal human interaction. Offered by Psychology (p. 454). Limited
to three attempts.

**Recommended Prerequisite:** PSYC 100 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 350: Directed Reading and Research in Psychology.** 1-3 credits.
Library research in psychology, culminating in a substantial formal paper;
individualized sections by arrangement with faculty. Notes: No more
than 6 credits in PSYC 260, 350, and 460 can be used toward psychology
major. Offered by Psychology (p. 454). May be repeated within the term.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 362: Psychology of Gender.** 3 credits.
Behavior and attitudes of women; influence of chromosomes and
hormones on behavior, influence of culture on sex role differentiation, and
theories of sex role development. Offered by Psychology (p. 454). Limited
to three attempts.

**Recommended Prerequisite:** PSYC 100, BIOL 103, and BIOL 104 or
permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 372: Biopsychology.** 3 credits.
Survey of neuroscience, including basic neuroanatomy, neural and
synaptic transmission, neural mechanisms underlying normal and
abnormal behavior, and biological mechanisms of drug action. Students
may earn credit for PSYC 372 and either PSYC 375 or PSYC 376, but they
may not earn credit for all three. Offered by Psychology (p. 454). Limited
to three attempts.
Recommended Prerequisite: PSYC 100, BIOL 103 with BIOL 106 & BIOL 107; or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 373: Biopsychology Laboratory. 2 credits.
Functionality anatomy and physiology of the brain, including dissection of brain and eye, and a demonstration and practice in research methods for studying physiological mechanisms underlying behavior. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 372 or 375, or permission of instructor. Concurrent enrollment is also permitted.

Schedule Type: Laboratory

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 375: Brain and Sensory Processes. 3 credits.
First half of comprehensive survey of neuroscience, including basic neuroanatomy, neural and synaptic transmission, neural mechanisms underlying normal and abnormal behavior, and biological mechanisms of drug action. Notes: Students may earn credit for 372 and either 375 or 376, but they may not earn credit for all three. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100 with a grade of C or better, and BIOL 103, BIOL 106 & 107, or BIOL 213; or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 376: Brain and Behavior. 3 credits.
Second half of comprehensive survey of neuroscience, including neural mechanisms underlying normal and abnormal behavior. Notes: Students may earn credit for 372 and either 375 or 376, but they may not earn credit for all three. Offered by Psychology (p. 454). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: PSYC 372C, L372 or L375.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 379: Applied Cross-Cultural Psychology. 3 credits.
A review of important landmarks in cross-cultural research, showing how this research impacts psychology as a discipline. Emphasizes an empirical approach to cross-cultural study and includes topics such as theoretical and empirical developments in cross-cultural psychology, development of coherent schemas to guide cross-cultural research and interventions, comparison of psychology’s goals and assumptions in Western and other cultures, and integration of course materials into educational and career goals of students. Offered by Psychology (p. 454). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 380: Introduction to Forensic Psychology. 3 credits.
Explores the differing, yet varied facets of the field of forensic psychology including landmark legal cases relevant to psychology, potential careers in forensic psychology, police psychology, expert testimony, forensic psychological assessment, psychopathy, homeland security, ethics, correctional psychology, and issues in working in the juvenile justice system. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 325.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 381: Mental Illness and Criminal Justice. 3 credits.
Examines the frequent intersection of individuals diagnosed with severe mental illness and the criminal justice system. Includes case studies that demonstrate possible judicial, therapeutic, correctional, and post-adjudication outcomes. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 325.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 382: Psychology of Crime Victims. 3 credits.
Explores short-term and long-term psychological effects of crime on victims through interviews with survivors of childhood abduction, elder abuse, intimate partner violence, and child abuse, among others. Evaluates roles and responsibilities of mental professionals and law enforcement when interacting with crime victims. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 325.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 389: Psychology: College to Career. 3 credits.
Emphasizes development and readiness for a profession in the social sciences through self-assessment and professional skill acquisition. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: At least 30 hours of completed college coursework and a declared major in the social sciences or permission of the instructor.

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)
400 Level Courses

PSYC 405: Mystery, Madness, and Murder. 3 credits.
Multidisciplinary approach to taboo topics that fascinate and frighten us. Instructors from disciplines across the arts and sciences bring expertise and diverse perspectives to provocative issues such as cannibalism and serial murder. Students learn to think critically and objectively while examining use in myth, literature, and popular culture. Offered by Psychology (p. 454). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 406: Psychology of Communication. 3 credits.
An examination of the behavior of communicating across species and sensory modalities, with an emphasis on the evolutionary basis for the various communication strategies used by animals and humans. Offered by Psychology (p. 454). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 408: Psychological Fitness. 3 credits.
Evaluates and applies scientific research on psychological exercises to increase one's cognitive, behavioral, emotional, and physical health. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 414: Behavior Disorders of Childhood. 3 credits.
Review of the theories, methods, and research dealing with emotional and behavioral disorders of children. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 313 and 325 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 415: Psychological Factors in Aging. 3 credits.
Examination of the sensory, perceptual, intellectual, personality, health, and familial changes that occur as people age and adjust into their later years. Common and more serious adjustment difficulties and developments are discussed with attention to impacts on the individual and the family. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 417: Science of Well Being. 3 credits.
This course will examine and interpret the latest research in social, personality, and clinical psychology on well-being, character strengths, and personal growth. Emphasis will be placed on the ways in which scientists generate hypotheses regarding the nature of positive psychological traits and processes and the methods by which these ideas are tested. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 418: Death, Dying, and Grieving. 3 credits.
Advanced survey of processes of grieving and their relationship to death and dying. Topics include ways of dying, effects of death on loved ones, and care for the terminally ill. Offered by Psychology (p. 454). Limited to three attempts. Equivalent to PSYC 518.

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 423: Group Psychotherapy Techniques. 3 credits.
Review of theory and methods of group therapy with emphasis on humanistic and interpersonal approaches, including applications to family therapy, alcoholism, and drug abuse. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 324 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 427: Community Engagement for Social Change. 3 credits.
Explores social problems and interpersonal, intrapersonal, and social aspects of addressing them. Addresses both theoretical aspects of social problems through readings and class discussion and application through community service. This course may count for both Applied Psychology and Professional Development requirements. Offered by Psychology (p. 454). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 430: Clinical Practicum in Psychology. 3 credits.
Gain professional experience in a clinical setting. This course takes place at the GMU Center for Psychological Services, a mental health
training center that serves the community. Enrolled students provide reception room service to clients at the center, learning aspects of the center administration and acquiring relevant skills in the field. This course may count for both Applied Psychology and Professional Development requirements. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Fieldwork

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 435: Personnel Training and Development: A Psychological Perspective. 3 credits.
Overview and critique of training methods used in industry from viewpoint of psychological theory, including simulations, on-the-job training, supervisory/leadership skills training, computer-assisted instruction, and programmed texts. Principles of needs analysis, program development, and program evaluation are discussed within framework of industrial psychology. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 333, PSYC 320 (may be taken concurrently) or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 440: Forensic Psychology: Science and Pseudoscience. 3 credits.
Provides a critical, evidenced-based, examination of common psychological practices and constructs in the field of forensic psychology including psychological assessments, expert testimony, risk assessment, hypnosis, criminal profiling, polygraph examination, and methods of interrogation. Offered by Psychology (p. 454). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 441: Criminal Behavior: Psychological and Neurological Aspects. 3 credits.
Considers the psychological factors and structural and functional neurological differences that influence criminal behaviors including murder, sexual assault, fraud, intimate partner violence, and arson. The predictive and explanatory abilities of neuroimaging with respect to the criminal acts in question, as well as the role of neuroimaging in the judicial system, will also be explored. Offered by Psychology (p. 454). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 460: Independent Study in Psychology. 1-4 credits.
Advanced research methods in psychology in context of individual student projects or assisting with research on faculty projects; individual sections by arrangement with faculty. Notes: No more than 6 credits in PSYC 260, 350, and 460 can be used toward psychology major. Offered by Psychology (p. 454). May be repeated within the term.

Recommended Prerequisite: 18 credits of PSYC, including PSYC 301 (grade of C or better), a 2.500 GPA in PSYC, and a written proposal approved before registration by the instructor and the department.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 461: Special Topics. 1-3 credits.
Selected topics reflecting interest in specialized areas. Notes: Topic announced in advance. May be repeated when topic is different. Offered by Psychology (p. 454). May be repeated within the term.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 462: Selected Topics in Forensic Psychology. 3 credits.
Selected topics reflecting interest in forensic psychology. Notes: May be repeated for credit when topic is different. Offered by Psychology (p. 454). May be repeated within the term.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 465: Pioneering Ideas in Psychology. 3 credits.
Historical background and major theoretical systems in modern psychology. Approaches include behaviorism, cognitive/information processing approaches, and psychodynamic theories. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 466: Psychology of Intimate Relationships. 3 credits.
Advanced survey of theories and research related to intimate relationships, including romantic relations and those among family members and friends in diverse cultural and relationship contexts. Offered by Psychology (p. 454). Limited to three attempts.

Recommended Prerequisite: PSYC 100 and PSYC 231; PSYC 324 recommended.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

PSYC 467: The Psychology of Working in Groups and Teams. 3 credits.
Teaches knowledge and the skills to meet communication, interpersonal, and task-related challenges that arise when functioning in work teams. Through readings, classroom activities, and applied problem-solving exercises, students acquire or refine team-related competencies. Students study theory of group and team processes while gaining insight from feedback on their behavior in exercises to become more effective team members. Offered by Psychology (p. 454). Limited to three attempts.
**Recommended Prerequisite:** 60 credit hours, including PSYC 100, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 472: Current Topics in Brain and Behavior.** 3 credits.
Rotating topics. Physiological mechanisms underlying behavior. Selected topics include neuronal bases of learning and memory, Alzheimer’s disease, and biological bases of addiction. Notes: May be repeated with approval of instructor. Offered by Psychology (p. 454). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** PSYC 372 or PSYC 375, and PSYC 376; or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 480: Biological Bases of Alzheimer’s Disease.** 3 credits.

**Recommended Prerequisite:** PSYC 375, PSYC 376, equivalent course, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 490: Psychology Honors I.** 3 credits.
Review of topics and issues in psychology, including historical overview, theory and supporting data, and influences on behavior. Notes: Topics vary. Offered by Psychology (p. 454). Limited to three attempts.

**Specialized Designation:** Impact Associated.

**Recommended Prerequisite:** Admission to psychology department Honors program.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 491: Psychology Honors II.** 3 credits.
Introduces advanced statistics, research methodologies, statistics packages, computing and information technology, and library technology appropriate for psychological research and pedagogy. Notes: Students required to complete proposal in preparation for admission to Psychology Honors III. Offered by Psychology (p. 454). Limited to three attempts.

**Specialized Designation:** Impact Associated.

**Recommended Prerequisite:** PSYC 300, 305 and 490.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 492: RS: Psychology Honors III.** 3 credits.
Completion of final honors project or thesis. Students must complete project or thesis, and present oral defense to committee and poster to class. Students also expected to prepare proposal to present project or thesis at regional or national conference, or prepare manuscript for publication in appropriate journal. Offered by Psychology (p. 454). Limited to three attempts.

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** PSYC 491 and approval of final honors project for thesis.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**PSYC 499: Senior Thesis.** 3 credits.
Directed research on topic agreed on by student and advisor. Notes: Students should take PSYC 460 with same advisor to develop thesis proposal before registering for PSYC 499. Students must complete thesis and defend it orally before advisor and two faculty members. Offered by Psychology (p. 454). Limited to three attempts.

**Recommended Prerequisite:** Psychology major with 84 hours, an experimental psychology laboratory course, PSYC 460, Permission of Instructor, and prior approval of thesis proposal.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**PSYC 518: Death, Dying, and Grieving.** 3 credits.
Advanced survey of processes of grieving and their relationship to death and dying. Topics include ways of dying, effects of death on loved ones, and care for the terminally ill. Offered by Psychology (p. 454). May not be repeated for credit. Equivalent to PSYC 418.

**Recommended Prerequisite:** PSYC 100

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 527: Introduction to Neurobiology.** 2 credits.
Introduction to neurobiology with overview of embryological development of nervous system in evolutionary context. Introduces regional and systems neuroanatomy by studying mammalian visual system with comparative perspective. Offered by Psychology (p. 454). May not be repeated for credit.
Application of cognitive theory to understand and predict interactions among human cognition, artifact, and task. Discusses recent research and case studies that emphasize empirical research, analytical modeling techniques, systems design, and development of tools and methods. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: An experimental lab course or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Recommendations: Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 552: Histology/Histochemistry of the Brain. 4 credits.
Explores conceptual basics and provides hands-on experience in techniques for studying brain tissue, including stereotaxic surgery, perfusion, sectioning, Nissl and myelin stains, enzyme histochemistry, immunohistochemistry, in situ hybridization, and quantitative receptor autoradiography. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 372 or equivalent.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Recommendations: Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 555: Neuroimaging. 3 credits.
Covers functional magnetic resonance imaging (fMRI) methods, experimental design and analysis issues in fMRI, structural MRI techniques and how they can contribute to cognitive neuroscience, and event-related potential methods. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: Graduate enrollment in either Cognitive & Behavioral Neuroscience or Human Factors & Applied Cognition programs, or instructor approval.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Recommendations: Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 557: Psychometric Methods. 3 credits.
Examines concepts of psychological measurement with emphasis on predictor test and criterion development. Discusses reliability, validity, and specialized techniques to develop tests of ability, interest, and personality. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 611 or permission of instructor

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
PSYC 558: Neuronal Bases of Learning and Memory. 3 credits.
Examines neuronal mechanisms involved in learning and memory, in animals ranging from invertebrates to humans. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 372, or 375 and 376; or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 559: Behavioral Chemistry. 3 credits.
Neurochemistry and neuroendocrinology, including neurotransmitter synthesis, genetic aspects of neural functioning, mechanisms of action of neurotransmitters and second messenger systems, regulation of neuroendocrine systems, neuroendocrine effects on behavior, and neuroimmunology. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 372, or 375 and 376; or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 561: Behavioral Biology of Substance Abuse. 3 credits.
Overview of biological effects of substance abuse, and biological mechanisms underlying addiction. Topics include alcohol, cocaine, marijuana, and other drugs; genetics of addiction; and neural systems underlying addiction and withdrawal. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 372 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 562: Research Methods in Human Experimental Psychology. 3 credits.
Hands-on approach to selected current and/or classical human experimental psychology research methods. Course topics include experimental design, including psychophysical and physiological experimentation. In addition, mathematical, cognitive modeling and simulation, as well as advanced statistical techniques will be covered. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: Graduate enrollment in either Cognitive and Behavioral Neuroscience or Human Factors and Applied Cognition programs.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 563: Laboratory Methods in Behavioral Neuroscience. 3 credits.
Laboratory work, to be completed in groups, will include surgical, histological and behavioral techniques. Proper use and handling of animals, ethical issues, evaluation of neuroscience literature, experimental design and data analysis are addressed in lecture. This course requires working with laboratory rodents. Offered by Psychology (p. 454). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 566: Cognitive and Perceptual Development. 3 credits.
Survey of theory and the research on development of perception, memory, concepts, problem solving, intelligence, and academic skills in children. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: 6 credits of child psychology and course in experimental psychology or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.
Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 592: Special Topics.** 1-6 credits.
Special topics reflecting interests in specialized areas. Notes: Topic announced in advance. May be repeated when topic is different. Offered by Psychology (p. 454). May be repeated within the term for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 597: Directed Reading and Research.** 1-6 credits.
Independent reading or research on topic agreed on by student and faculty member. Notes: Directed reading or research for MA students in psychology. Offered by Psychology (p. 454). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**PSYC 601: Applied Data Analysis in Psychology I.** 3 credits.
Introduces fundamental statistical concepts for applied psychological research. Concepts include descriptive statistics, inferential statistics and hypothesis testing, Analysis of Variance, and Linear Regression. The course presents these topics from an applied perspective and also covers data visualization and presentation of results to clients. Offered by Psychology (p. 454). Limited to three attempts.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 602: Applied Data Analysis in Psychology II.** 3 credits.
Covers advanced statistical concepts and approaches for applied psychological research, such as multivariate techniques, longitudinal analyses, and other more complex approaches. A key emphasis will be on using these techniques to assess applied issues, such as return on investment of interventions and utility analyses. Offered by Psychology (p. 454). Limited to three attempts.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 603: Psychological Research Methods.** 3 credits.
Covers basic principles of research methods for applied psychology contexts. The focus on this course is on learning how to interpret and design research studies and survey measures. Topics include basic concepts important to survey design and research methods, and overview of types of research design, and basic issues related to communication of research to lay audiences. Offered by Psychology (p. 454). Limited to three attempts.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 611: Advanced Statistics.** 4 credits.
Integrates basic psychological statistics and measurement issues from advanced perspective. Lab work includes using computer packages for data handling and analyses. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Corequisite:** Open only to degree students.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Psychology.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**PSYC 612: Advanced Statistics.** 4 credits.
Open only to degree students. Integrates basic psychological statistics with overview of research methodology including experimental, quasi-experimental, field approaches, and measurement issues from advanced perspective. Lab work includes use of computer packages for data handling and analyses. Notes: Students must enroll in 611 and 612 in sequential semesters. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Corequisite:** Open only to degree students.

**Registration Restrictions:**
Enrollment limited to students with a major in Psychology.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**PSYC 611**: Requires minimum grade of B.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 614: The Psychology of Aging. 3 credits.**
Review of the experimental literature in psychology of aging, including intellectual functioning, personality and adjustment, minor and major adjustment problems, and role changes in later life. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 100 and undergraduate or graduate course in aging.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 615: Language Development. 3 credits.**
Seminar covering theory and research on acquisition of language, including biological and environmental influences and constraints; research methods; role of parents; individual and cultural differences; links between language and other domains of development including cognitive, behavioral, social, and emotional; language and the brain; animal language; bilingualism; and atypical language development. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: 3 credits graduate Developmental Psychology or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 616: Employee Selection. 3 credits.**
Study of administration, scoring, and interpretation of standard tests used by industry for selection and assessment of personnel. The focus is on understanding and applying evidence-based best practices. Offered by Psychology (p. 454). Limited to three attempts.

Registration Restrictions: Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 617: Child Psychopathology. 3 credits.**
Intensive survey of major types of psychopathological disturbances of infancy and childhood. Offered by Psychology (p. 454). May not be repeated for credit. Equivalent to SPSY 617.

Recommended Prerequisite: PSYC 211 or 313 and 325.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 618: Applied Leadership and Teamwork. 3 credits.**
Covers major theories of leadership and teamwork in organizations. Includes a focus on strategies for leadership assessment, selection, and development, and also examines strategies for staffing and building high performance teams. Offered by Psychology (p. 454). Limited to three attempts.

Registration Restrictions: Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 619: Applied Behavior Analysis: Principles, Procedures, and Philosophy. 3 credits.**
Focuses on basic principles and procedures of applied behavior analysis; identification of factors that contribute to behavioral problems and improved performance; and procedures that can be used to minimize behavioral problems, improve performance, teach new behaviors, and increase probability of behaviors occurring under appropriate circumstances. Offered by Psychology (p. 454). May not be repeated for credit.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.
PSYC 620: Motivation and Well-Being. 3 credits.
Covers major theories of work motivation and well-being, with an emphasis on understanding valid tools for measuring motivation and well-being and evidence-based approaches for enhancing motivation and well-being in organizational contexts. Offered by Psychology (p. 454). Limited to three attempts.

Registration Restrictions:
Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 626: Organizational Change and Development. 3 credits.
Covers principles and strategies for facilitating effective organizational change and growth. Topics include principles of organizational growth, organizational diagnosis, the design of effective organizational interventions, leading and managing organizational change, and strategies for evaluating and calibrating organizational change. Offered by Psychology (p. 454). Limited to three attempts.

Registration Restrictions:
Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 627: Performance Management. 3 credits.
Focuses on developing competencies in designing, implementing, and evaluating systems that measure and evaluate employees’ individual performance within the organizational context, as well as the performance of organizational units. Includes developing skills and knowledge to develop tools for providing feedback at the individual and the group/organizational level. Emphasis will be on evidence-based management practices and the dynamic nature of workplaces. Offered by Psychology (p. 454). Limited to three attempts.

Registration Restrictions:
Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 628: Benefits and Compensation. 3 credits.
Provides an understanding of a variety of approaches for rewards, recognition, and compensation systems. Covers the underlying theoretical frameworks for the design and implementation of such systems on attraction, retention, motivation, and performance of employees, as well as the existing empirical evidence to support these propositions. Offered by Psychology (p. 454). Limited to three attempts.

Registration Restrictions:
Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 629: Workplace Training. 3 credits.
Covers principles and strategies of effective training. Topics include assessment of training needs, development of effective instructional designs, strategies for facilitating training transfer, and techniques of program evaluation. Offered by Psychology (p. 454). Limited to three attempts.

Registration Restrictions:
Enrollment limited to students with a class of Graduate.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 630: Developmental Disabilities. 3 credits.
Lectures, seminars discuss state-of-the-art and evidence-based information about developmental disabilities across life span with emphasis on mental retardation. Includes epidemiology, etiology, diagnoses, risk factors, treatment, supports, and prevention of developmental disabilities. Pertinent philosophical, ethical, and legal issues concerning this special-needs population will be discussed. Notes: In addition to course work and assigned reading, students sign up for a 20-hour per semester practicum. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: 3 credit hours of graduate level developmental psychology courses or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 631: Industrial and Personnel Testing and Evaluation. 3 credits.
Study of administration, scoring, and interpretation of standard tests used by industry for selection and assessment of personnel. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 300 and 320.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.
PSYC 633: Evaluative Research in Psychology. 3 credits. Examine research techniques specifically designed to evaluate human effectiveness of organizations and mental health programs. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 300 or Permission of Instructor.

Registration Restrictions:
Enrollment limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 636: Survey of Industrial Psychology. 3 credits. Intensive survey of historical and current issues in major areas of applied (nonclinical) psychology. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 300 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 638: Training: Psychological Contributions to Theory, Design, and Evaluation. 3 credits. Focuses on applying learning principles derived from psychological research in development of training models and techniques of skill acquisition. Discusses research designs and empirical results appropriate to training evaluation. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 636 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 639: Survey of Organizational Processes. 3 credits. Trains at conceptual/theoretical and empirical levels in organizational processes. Includes individual, interpersonal, intra-group, and intergroup phenomena as they exist in context of organizational settings. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 333 or 632.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 640: Techniques in Industrial/Organizational Psychology. 3 credits. Skills-oriented course enabling students to construct instruments and perform functions critical to both researchers and practitioners in industrial/organizational psychology. Focuses on conducting job analysis interviews, developing and scoring task inventories, using critical incident and KSAO methods, and constructing performance appraisal and selection instruments. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 300 or Permission of Instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
PSYC 644: Methods for Social Research. 3 credits.
Examines issues in basic and applied social science methodology including internal validity, causal generalization, and construct validity. Offered by Psychology (p. 454). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 645: Research Methods in Human Factors and Applied Cognition. 3 credits.
Hands-on approach to selected current or classical human factors/ applied cognition research methods; exact methods announced in advance. Potential methods include cognitive task analysis, usability evaluation methods, critical incident analysis, reliability analysis, workload measures, verbal protocol analysis, and engineering models of human performance. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 530 and 611.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 646: Longitudinal Data Analysis. 3 credits.
Examines techniques for measuring developmental change across lifespan. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 611

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 648: Developmental Psychopathology. 3 credits.
In-depth look at emerging discipline of developmental psychopathology. Discusses specific disorders and contexts to illustrate how knowledge of normal development, deviant development, and maladaptive behavior illuminates principles underlying adaptive functioning. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: 6 credits graduate developmental psychology.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 652: Quantitative Methods II: Analysis of Variance. 3 credits.
Basic concepts in experimental design, fundamental assumptions in analysis of variance, and analysis of variance and covariance designs. Reviews multiple comparison tests. Offered by Psychology (p. 454). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: PSYC 611B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 654: Naturalistic Methods in Psychology. 3 credits.
Theory and techniques involved in studying people in their natural environment. Primary emphasis on quasiexperimental designs and methods of systematic observation. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 300 and either 304, 305, or 309.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 667: Behavior in Small Groups and Teams. 3 credits.
Theories, methods, and topics relevant to individual behavior in small group setting. Includes effects of individual on group, effects of group
on individual, and interaction effects among individuals. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** PSYC 231.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Psychology.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 668: Personality: Theoretical and Empirical Approaches.** 3 credits.

Presents comprehensive overview of current theoretical and empirical approaches to personality. Emphasizes areas of special relevance to clinical, developmental, and industrial/organizational psychology. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** PSYC 324 (or equivalent) or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 669: Social and Emotional Development.** 3 credits.

Surveys theory and research relevant to development of social relationships, emotional expressiveness and regulation, aggressive and altruistic behaviors, sex roles, and morality. Emphasizes influences on such development, including parents, other adults, peers, siblings, and broader culture. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** Six hours of developmental psychology or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 671: Role and Function of the School Psychologist.** 3 credits.

Considers roles, functions of school psychologist in educational environment, including certification and ethical standards, issues, and trends. Notes: Open only to school psychology MA students, or by permission of instructor. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** PSYC 231.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 673: Prevention, Intervention, and Consultation in Schools.** 4 credits.

Examines theory and practice of behavior modification and consultation in school environment. Notes: Open to practicing school psychologists and students in school psychology, or by permission of instructor. Offered by Psychology (p. 454). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 685: Cognitive Neuroscience.** 3 credits.

Provides an overview of the neural basis of human mental functions. Uses neuroimaging (PET, fMRI, ERPs, TMS, etc.), computational, and information-processing methods to examine functions such as attention, memory, language, emotion, and decision making. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** PSYC 231.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Psychology.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.
700 Level Courses

**PSYC 701: Cognitive Bases of Behavior.** 3 credits.
Surveys concepts in learning, cognitive, and affective processes, including theories and supporting data and their influences on behavior. Notes: Open only to degree students. Offered by Psychology (p. 454). May not be repeated for credit.

**PSYC 702: Biological Bases of Human Behavior.** 3 credits.
Surveys biological bases of behavior, including such topics as neural conduction, role of specific neurotransmitters, cortical functioning, and brain disorders. Notes: Open only to degree students. Offered by Psychology (p. 454). May not be repeated for credit.

**PSYC 703: Social Bases of Behavior.** 3 credits.
Surveys social influences on behavior, including group processes, person perception, and attitude formation. Notes: Open only to degree students. Offered by Psychology (p. 454). May not be repeated for credit.

**PSYC 704: Life-Span Development.** 3 credits.
Surveys theories and research regarding lifespan development and personality formation. Notes: Open only to degree students. Offered by Psychology (p. 454). May not be repeated for credit.

**PSYC 709: The Measurement of Intelligence.** 4 credits.
Administration, scoring, and interpretation of major infant, child, and adult intelligence tests, with emphasis on individual tests. Development of IQ tests, theories of intelligence, and current trends and developments in intellectual assessment. Notes: Open only to school psychology MA student. Offered by Psychology (p. 454). May not be repeated for credit.

**PSYC 710: Psychological Assessment.** 4 credits.
Study of major instruments used in clinical assessment and nature, problems, and predictive value; administration and scoring of major techniques for evaluation of personality; and principles of interpretation of these procedures. Notes: Open only to school psychology MA students. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** PSYC 617, 709, 822, or 810; and permission of director of School Psychology Program.

**Recommended Corequisite:** PSYC 611.
PSYC 722: Advanced Child Assessment. 4 credits.
Problems involved in diagnostic assessment of children with various handicapping conditions such as learning disabilities, retardation, and emotional disturbances. Notes: Open only to school psychology MA or PhD students. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 709 and 710 or PSYC 810 and 811, and five intellectual assessments in the Psychology Clinic.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 730: Practicum in Applied Psychology. 1-6 credits.
Practical experience in organizational setting as assigned. Notes: PhD students may repeat course for a maximum of 15 credits; MA students for a maximum 6 credits. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 15 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Adv Grad Studies in Sch Psych or Psychology.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

PSYC 733: Issues in Personnel Psychology. 3 credits.
Examines psychological literature on job analysis, job evaluation and compensation, performance appraisal, training, and EEOL selection issues. Methodological and psychometric issues in interpretation and evaluation of personnel psychology research receive particular attention. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 636 or permission of instructor.

Registration Restrictions:
Enrollment limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 734: Seminar in Human Factors and Applied Cognition. 3 credits.
Emphasizes current research and application of human factors, ergonomics, applied cognition, and applied perception. Notes: May be repeated when topic is different. Offered by Psychology (p. 454). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: Six graduate credits in Human Factors and Applied Cognition or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 737: Psychology of Human-Technology Interaction. 3 credits.
Emphasizes current research and development in human-computer interaction, cognitive systems engineering, cognitive ergonomics, and cognitive engineering. Notes: May be repeated when topic is different. Offered by Psychology (p. 454). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: 6 graduate credits in human factors and applied cognition or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 739: Seminar in Industrial/Organizational Psychology. 3 credits.
Rotating topics such as leadership theories and management development, and performance appraisal. Notes: Topics announced in advance. May be repeated when topic is different. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: PSYC 333 and 636, or permission of instructor.

Registration Restrictions:
Enrollment limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 741: Psychology of Work Motivation. 3 credits.
Examines psychological literature of need, cognitive, and reinforcement theories of motivation; organizational attachment (commitment, absenteeism, and turnover); job design and quality of work issues.
Emphasizes methodological and psychometric issues in interpreting and evaluating work-motivation research. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** PSYC 333 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students in the LA-MA-PSYC or LA-PHD-PSYC programs.

Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 750:** School Psychology Practicum I. 1 credit.
Practical experience in school psychology. Notes: Open only to school psychology MA students. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** Admission to school psychology concentration and PSYC 709.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**PSYC 751:** School Psychology Assessment Practicum II. 2 credits.
Practical experience in school psychology. Notes: Open only to School Psychology MA students. Apply in writing for permission of department 60 days prior to beginning of semester. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 4 credits.

**Recommended Prerequisite:** PSYC 750.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 754:** Quantitative Methods III: Psychological Applications of Regression Techniques. 3 credits.
Reviews psychological applications of regression techniques in variety of contexts including experimental, field, and survey settings. Offered by Psychology (p. 454). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: PSYC 611B.

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 756:** Quantitative Methods IV: Multivariate Techniques in Psychology. 3 credits.
Surveys multivariate statistical techniques as applied to psychological research. Emphasizes analysis of complex designs and interpretation of multivariate data analyses resulting from computer processing. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** PSYC 611

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate.

Non-Degree level students may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 757:** Advanced Topics in Statistical Analysis. 3 credits.
Focuses on noncognitive individual differences that predict performance. Published work discussed in seminar format with emphasis on conceptual development, methodological adequacy, and new directions. Notes: May be repeated for credit when topic is different. Offered by Psychology (p. 454). May be repeated within the degree.

**Recommended Prerequisite:** PSYC 754.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 758:** Advanced Topics in Cognitive Science. 3 credits.
Emphasizes current research in cognitive science. Topics may include computational cognitive models, nature of expertise, diagrammatic reasoning, display-based problem solving, visual attention, decision making, goal-based versus event-based cognition, and situated action. Notes: May be repeated when topic is different. Offered by Psychology (p. 454). May be repeated within the term for a maximum 12 credits.

**Recommended Prerequisite:** PSYC 530 or 701.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may **not** enroll.

**Schedule Type:** Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 780: Applied Developmental Psychology. 3 credits.
Examines how developmental theory, knowledge base, and methodology can be used to promote health and welfare of individuals across lifespan. Topics include contemporary social issues and child development. Research in applied settings, developmental assessment and intervention, and program evaluation. Offered by Psychology (p. 454). May not be repeated for credit.

Recommended Prerequisite: PSYC 704 or 3 credits of other graduate developmental psychology courses and permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 790: School Psychology Internship. 3-6 credits.
Supervised field experience of one school year. Advanced school psychology student functions as full-time staff member in school system. Student completes paper on practical research project involving alternative school psychology role in school system. Notes: Enrollment is for total 9 credits (thesis option) or 12 credits (nonthesis option) in increments of 3 credits according to placement. Students enrolled in PSYC 799 are not required to complete the practical research project. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Completion of required courses in school psychology and permission of program coordinator.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Special scale. (p. 84)

PSYC 792: Psychology Practicum. 1-6 credits.
Supervised experience working in applied, school, or agency settings.
Notes: For School Psychology, interested students must apply to area coordinator 60 days before registration. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Admission to psychology graduate program.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Internship
Grading:

This course is graded on the Satisfactory/No Credit scale. (p. 84)

PSYC 794: Developmental Assessment. 1-6 credits.
Introduces considerations and methods needed for evaluating young children (ages two - six). Focus on the skills necessary for formulating, conducting, and reporting comprehensive developmental evaluations. Emphasizes evaluation of preschool children and includes information relating to infants, as well as older children functioning at lower developmental levels. Offered by Psychology (p. 454). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: Admission to applied developmental psychology program.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Schedule Type: Thesis
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PSYC 798: Thesis Proposal. 1-6 credits.
Work on a proposal for master's thesis. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Permission of program coordinator.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PSYC 799: Master's Thesis. 1-6 credits.
Research on approved master's thesis topic under direction of thesis committee with approval of chair. Offered by Psychology (p. 454). May be repeated within the degree.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

PSYC 810: Psychological Assessment I. 4 credits.
First of required two-course sequence that provides comprehensive coverage of principles, strategies, and techniques of psychological assessment. Emphasizes empirically supported methods. Notes: Open to clinical psychology PhD students, or other students with permission of instructor. Offered by Psychology (p. 454). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 811: Psychological Assessment II.** 4 credits.
Second of required two-course sequence that provides comprehensive coverage of principles, strategies, and techniques of psychological assessment. Emphasizes empirically supported methods. Notes: Open to clinical psychology PhD students, or other students with permission of instructor. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** PSYC 810.

**Registration Restrictions:**
Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 822: Scientific Foundations of Clinical Psychology I.** 3 credits.
First of required two-course sequence that provides comprehensive coverage of major psychological problems, including review of empirically supported interventions. Notes: Open to clinical psychology PhD students, or other students with permission of instructor. Offered by Psychology (p. 454). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 823: Scientific Foundations of Clinical Psychology II.** 3 credits.
Second of required two-course sequence that provides comprehensive coverage of major psychological problems, including review of empirically supported interventions. Notes: Open only to clinical psychology PhD students. Offered by Psychology (p. 454). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 830: History, Systems, and Theories of Personality and Psychotherapy.** 3 credits.
Review of history, systems, and theories of clinical psychology emphasizing traditional theories of personality and psychotherapy. Notes: Open to clinical psychology PhD students, or other students with permission of instructor. Offered by Psychology (p. 454). May not be repeated for credit.

**Recommended Prerequisite:** Admission to doctoral concentration in clinical psychology.

**Registration Restrictions:**
Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 833: Social And Cognitive Foundations Of Clinical Psychology.** 3 credits.
Review of theory and research in social psychology (particularly social cognition) relevant to understanding psychological adjustment, adjustment problems, and clinical interventions. Notes: Open to clinical psychology PhD students, or other students with permission of instructor. Offered by Psychology (p. 454). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PSYC 850: Teaching Practicum in Psychology.** 1 credit.
Workshop in effective teaching of selected undergraduate psychology courses. Required of and designed to guide graduate teaching assistants assigned to teach undergraduate course (not a lab) for first time. Topics include course planning, syllabus development, lecture resources, effective lecturing skills, use of audio visuals, leading of classroom discussion, construction and grading of exams, student writing, instructional technology, and handling of student questions and problems. Individual critiques of teaching. Offered by Psychology (p. 454). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Psychology.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

**PSYC 860: Introductory Helping Skills and Motivational Interviewing.** 3 credits.
Teaches fundamental interviewing skills and the theory, research, and practice of motivational interviewing. Offered by Psychology (p. 454). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
PSYC 861: Cognitive Behavioral Therapy for Youth. 3 credits.
Teaches the selection, evaluation, and application of empirically supported interventions for children and adolescents with a focus on cognitive-behavioral interventions. Instruction in evidence based assessments, cognitive-behavioral case conceptualization, outcome evaluation, and consultation. Supervision of cognitive-behavioral therapy with youth. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PSYC 862: Cognitive Behavioral Therapy for Adults. 3 credits.
Teaches the principles of cognitive-behavioral theory, conceptualization and psychotherapy techniques for psychological problems with adults. Supervision of cognitive-behavioral therapy with adults. Offered by Psychology (p. 454). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PSYC 881: Practicum in Clinical Psychology. 1-3 credits.
Supervised clinical work in a professional psychological services setting. Usually includes practice in psychological assessment and clinical interventions, but can also include supervision, consultation, and program evaluation. Offered by Psychology (p. 454). May be repeated within the term for a maximum 21 credits.

Recommended Prerequisite: Admission to doctoral concentration in clinical psychology and permission of director.

Registration Restrictions:
Enrollment is limited to students with a major in Psychology.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PSYC 883: Ethical and Professional Issues in Clinical Practice. 3 credits.
Examines ethical principles and professional guidelines to help develop ethical decision-making and behavior to meet the appropriate standards of care in providing clinical services. Notes: Open to clinical psychology PhD students, or other students with permission of instructor. Offered by Psychology (p. 454). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 885: Clinical Externship. 0 credits.
Individual placements in psychological assessment or psychotherapy service settings. Notes: Open only to clinical psychology PhD students in the third year or more of training. Offered by Psychology (p. 454). May be repeated within the degree.

Registration Restrictions:
Enrollment is limited to students with a major in Psychology.

Enrollment is limited to Graduate level students.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Special scale. (p. 84)

PSYC 890: Seminar in Professional Psychology. 1-3 credits.
Each section limited to students in one concentration of MA or PhD program. See area coordinator for requirements for section in each track. Offered by Psychology (p. 454). May be repeated within the term for a maximum 3 credits.

Recommended Prerequisite: Student in psychology.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PSYC 892: Special Topics in Psychology. 1-6 credits.
Selected topics reflecting specialized areas in psychology. Notes: Open only to PhD students. Content varies. May be repeated when topic is different. Offered by Psychology (p. 454). May be repeated within the term for a maximum 17 credits.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 897: Directed Reading and Research. 1-3 credits.
Independent reading on topic agreed on by student and faculty member. Notes: PhD students in the clinical psychology concentration may not take this course for elective credit. May not be repeated for credit towards a degree by students who also register for PSYC 799. Offered by Psychology (p. 454). May be repeated within the term.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PSYC 998: Doctoral Dissertation Proposal. 1-6 credits.
Work on research proposal that forms basis for doctoral dissertation. Notes: No more than 24 credits of PSYC 998 and 999 may be applied to

900 Level Courses

PSYC 998: Doctoral Dissertation Proposal. 1-6 credits.
Work on research proposal that forms basis for doctoral dissertation. Notes: No more than 24 credits of PSYC 998 and 999 may be applied to
doctoral degree requirements. Offered by Psychology (p. 454). May be repeated within the degree.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**PSYC 999: Doctoral Dissertation.** 1-9 credits.
Research on approved dissertation topic under direction of dissertation committee. Notes: Students must complete a minimum of 3 credits of 999. No more than 12 credits of PSYC 998 and 999 may be applied to doctoral degree requirements. Offered by Psychology (p. 454). May be repeated within the degree.

**Recommended Prerequisite:** PSYC 998.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**Public Administration (PUAD)**

**500 Level Courses**

**PUAD 502: Administration in Public and Nonprofit Organizations.** 3 credits.
Graduate introduction to field of public administration. Focuses on structure, functions, and processes of executive branch agencies of national, state, and local governments. Emphasizes nonprofit organizations as co-actors with government in policy-making/policy implementation nexus. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 504: Managing in the International Arena: Theory and Practice.** 3 credits.
Theoretical and empirical examination of international system that both affects and is affected by decisions, behaviors, and subsystems of state and nonstate (organizational) actors. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**PUAD 505: Introduction to Management of Nonprofits.** 3 credits.
Examines nonprofit organizations and their role in contemporary society. Explores unique aspects of nonprofits including voluntary governance, tax-exempt status, nonprofit corporation law, accounting practices, fund raising, finance, and management of volunteers. Emphasizes board/executive relationship, and value of establishing and maintaining nonprofit organization's reputation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 509: Justice Organizations and Processes.** 3 credits.
Examines structures, practices, and performance of organizations involved in administration of justice (law enforcement, courts and legal agencies, corrections, regulatory and related agencies, private organizations) Explores applicability of various theoretical perspectives on organizational processes, and considers extent to which processes operate as a system. Focuses on comparing formal goals and system expectations to actual practice. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 509.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 520: Organization Theory and Management Behavior.** 3 credits.
Considers behavior in context of public organization, and consequent changes required in management. Focuses on such issues as perception, attitude formation, motivation, leadership, systems theory, communication and information flow, conflict theory, and decision theory. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 540: Public Policy Process. 3 credits.
Processes of making public policy, including detection of public issues, consideration of alternatives, and adoption and implementation of solutions. Highlights major actors in policy process, and environment within which they work. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 502.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

PUAD 613: Economic Analysis in Public Administration. 3 credits.
Covers major economic issues about role of markets and government in global world. Applies fundamental economic concepts such as cost benefit analysis to public sector. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: PUAD 511B, GOVT 511B or PUBP 511B.
B- Requires minimum grade of B-

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 615: Administrative Law. 3 credits.
Covers law as guiding and controlling force in public-sector operations. Includes application of legal processes to administrative practices and situations, and administrative determination of private rights and obligations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Major management theories applicable to American federal system. Emphasizes organization, structure, and operations. Explores relationship of theories to management practices in contemporary American administration. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 520.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 622: Program Planning and Implementation. 3 credits.
Practical exploration of implementing public law in American federal system. Studies construction of organizational apparatus, development of operational plans, and systems of control and evaluation necessary to implement government programs. Emphasizes coordinating tasks and resources required for effective program implementation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 520.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 623: Managing Government Contracting. 3 credits.
Explores unique management and administrative challenges of providing public goods and services through contracts. Examines debates over privatization, and explores tools managers need to address unique
accountability challenges associated with this governance tool. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 624: Public and Private Partnerships. 3 credits.
Emphasizes entrepreneurial efforts where governments, nonprofit organizations and private companies establish goals and combine resources and talents. Issues of efficiency, accountability, and democratic responsiveness will be examined. Various tools for promoting and implementing such partnerships will be explored. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 631: Disaster Response Operations and Recovery. 3 credits.
Explores the principles and practices that promote effective disaster response operations and management. Examines nature of disasters, models for response operations in the United States and roles and responsibilities of various emergency management-related organizations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.
nature of the terrorist threat, and counterterrorism strategies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 633: Hazard Mitigation Policy. 3 credits.**
Examines the complex interplay and policy approaches to hazard prevention and protection of known hazards in terms of land use, zoning, infrastructure, and building code management. Focuses on understanding the relative roles of proactive policy design and implementation at the federal, state, and local levels of government. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 634: Management of International Security. 3 credits.**
Examines theory and practice of managing international security. Emphasizes interplay of organizational structure and bureaucratic dynamics in international context. Presents theory and practice of crisis management, and coordination and comparison of security methods and techniques. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 635: Emergency Preparedness: Interagency Communication and Coordination. 3 credits.**
Considers complex relationships within governments and across sectors and levels of government for effective emergency management in planning, response, recovery, and mitigation phases. Explores intergovernmental management and network management theories and research to understand the nature of interorganizational problems and potential models for collaboration. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**PUAD 642: Environmental Policy.** 3 credits.
In-depth examination of environmental policy making. Examines U.S. efforts from 1970 to present to mitigate pollution of nation's air, land, and water; and addresses issues of global concern including biodiversity loss, ozone depletion, and climate change. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to EVPP 642.

**Specialized Designation:** Green Leaf Focused Course

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 644: Public Policy Models.** 3 credits.
Approaches to modeling policy problems. Includes analysis and comparison of dominant paradigms in policy sciences. Reviews assumptions and implications of different models and their utility for analysis, implementation, and evaluation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** PUAD 540.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 645: Policy Analysis.** 3 credits.
Introduces concepts and techniques for formal policy analysis, development of skills in applying policy analysis techniques through case studies, and exploring legitimacy and utility of policy analysis. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** or GOVT 511\textsuperscript{B} or PUBP 511\textsuperscript{B}: \textsuperscript{B} Requires minimum grade of B-

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 649: Advocacy and Lobbying.** 3 credits.
Explores how nonprofit organizations advocate and lobby for social change. Considers the different steps in the advocacy process and the broad range of strategies used by non-profits seeking to influence public policy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 651: Virginia Politics, Policy, and Administration.** 3 credits.
Covers governmental agencies, legislative functions, executive leadership, staff agencies, state-local relationships, intrastate regionalism, administer customs peculiar to Virginia. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** PUAD 502.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 652: Leading in the Nonprofit Sector.** 3 credits.
Introduces students to a broad range of nonprofit leadership issues. Examines the challenges leaders face within nonprofit organizations and considers how nonprofit staff lead in communities. Also explores critical nonprofit issues which those aspiring to leadership in the nonprofit sector should be informed and have opinions about, such as the argument that there are too many nonprofit organizations or that more philanthropy should be directed to helping the poor. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
PUAD 654: The Community, Marketing, and Public Relations. 3 credits.
Focuses on marketing concepts and communications issues of nonprofit organization as they apply to identifying market, ability to formulate public image and reputation, and capability to raise money and retain membership or volunteers. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 502 or 505.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 655: Nonprofit Fund Raising and Resource Development. 3 credits.
Explores how nonprofit organizations raise funds from a variety of sources, including: fees for service and other enterprise activity; federal, state, and local governments; and private donations from individuals, foundations, and corporations. Also considers how nonprofits manage the fundraising process within their organizations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 502 or 505.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 657: Association Management. 3 credits.
Practical application of management theory in context of professional and trade associations. Covers legal structures, tax-exempt status, and general organizational structure. Topics include volunteer management, budgeting and accounting practices in associations, fund raising, media relations, media and event planning, and human resource management. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 502 or 505.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 658: Social Entrepreneurship and Social Enterprise. 3 credits.
Explores innovative approaches for addressing social problems. Organized around the steps in the entrepreneurial process: identifying social needs, formulating program strategies, mobilizing resources, managing growth tracking results, and maximizing impact. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 502 or 505.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 659: Nonprofit Law, Governance, and Ethics. 3 credits.
Overview of nonprofit governance as well as basic contract, labor, and tax law issues within nonprofit corporation law. Covers relationship between board and executive, and ethics topics typical to nonprofit organizations such as self-dealing, fiduciary responsibility, and human resource issues. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 502 or 505.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 660: Public and Nonprofit Accounting and Finance. 3 credits.
Studies fundamental normative debates in public and nonprofit financial management arena with focus on resulting implementation principles and techniques in governmental accounting, financial reporting, budget and revenue decisions, debt management, cash and investment management, pensions and employee benefits, and risk management. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: Course open only to admitted MPA or Association/ Nonprofit Management Certificate students.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to students with a major in Association Management, Nonprofit Management or Public Administration.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUAD 661: Public Budgeting Systems. 3 credits.
Survey focusing on policy and theoretical framework of revenue and expenditure choices at all levels of government. Topics include development, theories, structure of budgeting; political, economic, and managerial aspects of public budgeting; public policy implications; and budgetary reform movements and successes and failures. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUAD 662: National Budgeting. 3 credits.
Examines formulation of overall national fiscal policy and budgetary priorities through presidential and congressional budget processes, including decisions over spending and revenues. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUAD 663: State and Local Budgeting. 3 credits.
Introduces state and local government budgeting including principal actors and institutions inside and outside state and local governments that play role in budget development, appropriation, implementation, and auditing. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
of future developments. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 672:** Human Resources Reforms for Public Administration. 3 credits.
Explores recent reforms in human resources management in federal, state, and local governments. Covers pay for performance systems, flexible assignment patterns, incentives for productivity, work-life balance, job design, and changes resulting from higher levels of contracting for government programs. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 679:** Leadership Skills for the 21st Century. 3 credits.
The class is premised on the belief that an individual’s leadership capabilities can be enhanced by better understanding and practicing day-to-day leadership skills which can be used in the workplace. The academic literature on leadership will also be discussed. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 680:** Managing Information Resources. 3 credits.
Examines how managerial and analytical functions in public organizations can be performed via end-user computer applications. Provides in-depth coverage of selected database and decision support packages, and gives attention to logic and integration of application software. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** Admission to MPA program or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 700:** Ethics and Public Administration. 3 credits.
Topics of ethical dimensions including constitutionalism, democratic values and traditions, standards of conduct and ethics, and conflicting values of public officials and social equity of public programs. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 701: Cross-Cultural and Ethical Dimensions of International Management.** 3 credits.
To be taken in final two semesters of MPA program. Examines normative issues in management of programs in international context. Emphasizes interplay of cultural, sociopolitical, legal, and ethical factors, and management and policy problems arising from conflicting goals, values, and inequities among nations and regions. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** To be taken during final semester of student’s MPA program.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 703: Third-Party Governance.** 3 credits.
Examines design and management of government programs relying on other levels of government and private sector for delivery, with focus on such governmental tools as contracts, grants, loans, regulation, and tax credits. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** (PUAD 502$^B$) and (PUAD 511$^B$ or 611$^B$) and (PUAD 520$^B$ or 620$^B$) and (PUAD 540$^B$ or 640$^B$).

$^B$ Requires minimum grade of B.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 727: Seminar in Risk Assessment and Decision Making.** 3 credits.
Examines decision making under risk and uncertainty. Readings introduce major intellectual perspectives on topic and are drawn from variety of disciplines, including biology, economics, law, and psychology. Emphasizes making actual decisions under uncertainty. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** 12 graduate credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 729: Issues in Public Management.** 3 credits.
Current issues in management of public organizations in contemporary American government. Includes practical applications of theories and analysis to managerial problems. Emphasizes competence in improving management in selected government settings. Notes: May be repeated for credit when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

**Recommended Prerequisite:** PUAD 502 and 9 graduate credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 730: Professional Development Workshop.** 1-3 credits.
Explores external and internal factors reshaping public and nonprofit organizations. Investigates processes and techniques that managers and staff can use to respond to rapid environmental change. Emphasizes case studies and application of techniques and processes. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 731: Homeland/Transportation Security Administration.** 3 credits.
Examines the terrorist attacks of 9/11, the vulnerabilities of the aviation security system at that time, reasons why elected leaders and officials did not act more decisively to improve security before 9/11, and the policy and administration responses to the 9/11 attacks, including the creation of the Transportation Security Administration and the Department of Homeland Security. Includes the development of radical Islam and the rise of Osama bin Laden and Al Qaeda. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.
Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 738: Issues in International Security. 3 credits.
Examines issues of topical interest in general area of international security. Possible topics include nuclear strategy, disarmament, American defense policy, and international terrorism. Notes: May be repeated for credit when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

Recommended Prerequisite: PUAD 502 and 9 graduate credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 739: Issues in International Management. 3 credits.
Examines significant current issues in public international management. Emphasizes practical applications of theories and analysis of problems in public international management area, and competence in improving management practices in international management settings. Notes: May be repeated for credit when topic is different. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

Recommended Prerequisite: PUAD 502 and 9 graduate credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 749: Issues in Public Policy. 3 credits.
Examines significant issues in public policy in contemporary American government. Emphasizes practical applications of theories and analysis to policy problems, and competence in improving policy analysis in selected government settings. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

Recommended Prerequisite: PUAD 502 and 9 graduate credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 750: Federalism and Intergovernmental Relations. 3 credits.
Examines broad trends in governance, including theory and practice of federalism, with particular focus on intergovernmental relations and changing roles of federal, state, and local governments. May include privatization, devolution, mandating, regulatory reform, and comprehensive federalism reform. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUAD 502 and 9 graduate credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 758: Environmental Politics. 3 credits.
Evolution and current state of environmental policy making. Includes history, strengths, and weaknesses of key U.S. environmental laws and central international environmental agreements. Introduces analytical approaches, including cost-benefit and risk analysis. Discusses economic incentives and normative considerations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 759: Issues in Local Government Administration. 3 credits.
Management and policy formulation in American local governments. Addresses environments, institutions, and actors involved. Examines contemporary problems such as education, criminal justice, transportation, land use, economic development, and environmental impact. Notes: May be repeated with different topic. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

Recommended Prerequisite: PUAD 502 and 9 graduate credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 769: Issues in Public Financial Management. 3 credits.
Current issues in budgeting and financial management in contemporary American government. Emphasizes practical applications of administration and management issues and policy choices at all levels of government. Notes: May be repeated for credit when topic is different.
Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 15 credits.

**Recommended Prerequisite:** PUAD 502 and 9 graduate credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 781: Information Management: Technology and Policy.** 3 credits.
Examines challenges that organizations encounter as they move to a more technologically sophisticated information and communication environment. Studies organizational policy issues evolving from new technologies, including privacy, security, authentication, content control, intellectual property, and taxation, focusing on effectiveness of previous policy solutions and analyzing proposed solutions. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** PUAD 680 or Permission of Instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 790: Justice Organization and Administration.** 3 credits.
Examines organization and administration of justice and security organizations. Covers organization theory and behavior as applied to justice and security organizations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 740.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 791: Justice Program Evaluation.** 3 credits.
Practical exploration of assessment techniques used to study need for and consequences of justice programs and policies. Covers needs assessments, process, and impact evaluations. Includes design and measurement issues for assessing performance of justice programs, and interpreting and presenting results. Emphasizes designing program evaluation for justice agency. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 781.

**Recommended Prerequisite:** PUAD 511 and 612.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**PUAD 792: Advanced Seminar in Applied Public Administration Research.** 3 credits.
An applied research experience. Students will apply skills in problem definition, issue framing, collection of data and information, interviewing, selection and analysis of alternatives, presentation of findings and recommendations, design of implementation tools and administrative procedures and organizations, report writing and oral presentation to policymakers. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** 30 PUAD credits and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 793: Conduct of Justice Organizations at the Street Level.** 3 credits.
Explores how justice organizations behave at lowest levels, where service is delivered and discretion is greatest. Includes suspects, victims, witnesses, police officers, prison guards, parole officers, attorneys, and others who interact with the justice system. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 741.

**Recommended Prerequisite:** CRIM 740/PUAD 790 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUAD 794: Internship.** 3 credits.
Open only to MPA students. Contact internship coordinator one semester before enrollment. Credit determined by the department. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** 12 PUAD credits or permission of instructor.

Open only to MPA students. Enrollment is controlled. See http://pia.gmu.edu/internships for registration application.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

PUAD 795: Leadership in Justice and Security Organizations. 3 credits.
Examines leadership theories, and explores fundamental questions about leadership in justice and security organizations today. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: CRIM 740, PUAD 790, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 797: Changing Justice and Security Organizations. 3 credits.
Examines challenges of changing justice organizations, how changes have been successfully and unsuccessfully implemented in the past, and what change strategies appear to be most effective. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 743.

Recommended Prerequisite: CRIM 740, PUAD 790, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

800 Level Courses

PUAD 821: Doctoral Seminar in Theories of Organization and Bureaucracy. 3 credits.
Examines key issues in organization theory and behavior. Issues include organization design; interorganizational coordination, intelligence and decision-making systems; leadership and motivation theories; and theories or organizations as agents of political and social change. Uses case studies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to CRIM 743.

Recommended Prerequisite: PUAD 520 or equivalent, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 840: Research Seminar in Policy Governance I. 2-4 credits.
Surveys major institutions that formulate and implement public policy in United States. Examines translation of public preferences into public policy, and decisions about which societal and economic functions are most appropriately carried out by governments, and which are best accomplished by private institutions and individuals. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to PUBP 840.

Recommended Prerequisite: Admission to the doctoral program or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 841: Research Seminar in Policy Governance II. 2-4 credits.
Second of two-semester sequence (PUAD 840, 841) in governance and public management policy concentration. Focuses on division of responsibilities among several levels of government, and between public and private sectors. Explores impact of these divisions on development of public policy in several policy areas, such as urban governance, environmental policy, and health care. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to PUBP 841.

Recommended Prerequisite: Admission to doctoral program.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Public Policy (PUBP)

500 Level Courses

PUBP 500: Theory and Practice in Public Policy. 3 credits.
Introduces tools and concepts to navigate the world of public policy. Explores theories and assesses their strengths, weaknesses and applicability to public policy in order to understand different varieties of theory, their uses and application. Introduces several perspectives on and tools for the practice of policy analysis, and provides an opportunity to engage in an analytical policy project. Strong ethical and international components are built into the course. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: Admission to doctoral program.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUAD 840: Research Seminar in Policy Governance I. 2-4 credits.
Surveys major institutions that formulate and implement public policy in United States. Examines translation of public preferences into public policy, and decisions about which societal and economic functions are most appropriately carried out by governments, and which are best accomplished by private institutions and individuals. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to PUBP 840.

Recommended Prerequisite: Admission to the doctoral program or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
PUBP 501: Policy and Organizational Analysis. 4 credits.
Prepares students to engage in systematic analysis, both qualitative and quantitative, and constitutes the basis for advanced analytical techniques. Emphasis on research design, information acquisition, application of data analysis techniques, and presentation, including writing for professional and lay audiences. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 502: Governance and Policy Processes. 1-4 credits.
Assesses governance processes in public and private organizational settings on the basis of economic and political standards such as efficiency, accountability, and responsiveness to societal needs in a rapidly changing global environment. Using cases, simulations, and fieldwork, students learn to evaluate the quality of institutional governance in specific venues and appraise implications for public policy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 503: Culture, Organization, and Technology. 1-4 credits.
Focuses on the dynamic interplay of technology, organization and culture in societal, political, and economic processes, nationally and internationally. Using theory and case studies, students learn pertinent approaches to the study of culture, including digital culture, from the analysis of organization and social networks to that of belief systems and identities. Key issues of technological politics, the role of values and identity, cultural bases of intergroup conflict, and the political implications of globalization and technological change are addressed. Students develop practical skills in observation and become familiar with appropriate tools, methods, and frameworks for analyzing public policy and its context. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)
**PUBP 533: Topics in Public Policy Processes.** 1-3 credits.
Focuses on selected topics in public policy processes and procedures on an introductory level. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 550: Topics in Public Policy.** 1-3 credits.
Focuses on selected topics in public policy not covered in fixed-content public policy courses. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Not Gradeable (NG) scale. (p. 84)

**PUBP 555: Economics Math Workshop.** 0 credits.
Short course covering math and calculus skills required for master's level managerial economics course PUBP720. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Not Gradeable (NG) scale. (p. 84)

**PUBP 570: Policy Writing Fundamentals.** 3 credits.
Designed for entering students whose writing skills and style must satisfy the demands of a rigorous graduate program; aims to give students the ability and confidence to write clearly and concisely for a variety of policy audiences; reviews basic rules and develops essential techniques for effective writing in graduate school and beyond. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 601: Theory and Practice of Regional Economic Development.** 3 credits.
Helps students develop real-world skills to be a successful economic developer, consultant, policymaker, or change agent in this rapidly changing environment. Designed to provide a framework for understanding regional and national economic growth and prosperity, and provide tools to conduct concrete analyses to help decision makers, clients, and constituents make better-informed decisions. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
Introduces range of methods for tracking the performance of metropolitan economies, identifying opportunities for economic development, and assessing effectiveness of public and private investments designed to achieve region's economic growth. Also examines strategies and case results of economic development plans and projects. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Examines state and local government policies and processes to promote local economic development, including institutional arrangements, financing and tax incentives, nonfinancial strategies and approaches, land use, environmental and other relevant regulations, and relationships across government and nongovernmental organizations. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

This introduction to organizations, management, and work examines ideas and practices from two perspectives: conventional ones that go back to the industrial age and scientific management; and contemporary ones that have to do with organizing knowledge-work. Covers contributions of a range of writers and deals with foundations of OD from the standpoint of both theory and practice. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 611: *Critical Infrastructure Protection in Theory, Policy and Practice*. 2 credits.
Introduces critical infrastructure protection as a policy field, examines its institutional framework, and considers its foundations in political and economic theory. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

First course of two-semester sequence on international peace operations. Focuses on emerging theory of peace operations, including peacemaking activities of United Nations and other diplomatic initiatives; peace-building activities of international organizations and nongovernmental organizations; and peace support provided by international militaries. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 651: *Peace and Stabilization Operations*. 3 credits.
Second course of two-semester sequence on international peace operations. Focuses on application of emerging theory of peace operations, including peace-making activities of United Nations and other diplomatic initiatives; peace-building activities of international organizations and nongovernmental organizations; and peace support provided by international militaries. Several guest lectures from past and present peace operations provide practical information for future staff of peace operations. Offered by Schar School of Policy & Gov't (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 652: Strategies for Peace and Stabilization Operations. 4 credits.**
This course concentrates on the institutional mindsets, characteristics, and behaviors of the actors involved in peace operations. Readings, role-plays, and research underpin the class. Special attention is also paid to developing students' graduate-level research and writing skills. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 653: Interagency Operations in Conflict and Post-Conflict Settings. 3 credits.**
Examines the U.S. Interagency process as it relates to peace operations. Various departments and agencies maintaining equities in overseas missions will be identified and explored. Case studies highlight instances of success or failure in application of a "whole-of-government" approach to intervention. Examines significant problems hampering Interagency cooperation today and recent policy directives, frameworks, and initiatives developed to address this situation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 654: Analysis for Peace Operations. 3 credits.**
Examines theories of human behavior and social systems as they relate to conflict at the interpersonal, community, and international level. The class provides a foundation of academic thinking about the role of conflict in violent and peaceful social change. At the end of the course, students should be able to think systematically and critically about conflict, and engage in practical application of conflict analysis techniques to peace operations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 655: State- and Institution-Building. 4 credits.**
Ending prolonged civil conflicts often necessitates building stronger state institutions as well as addressing broader social, economic, and political issues affecting particular places and peoples. This course examines the literatures on state formation and state building from a historic, regional, and functional perspective paying special attention to polities exiting civil conflicts. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 700: Theory and Practice in Public Policy. 1-4 credits.**
Theories of public policy emphasizing historical intellectual development, and role theory and ethics may play in public policy making. Assumptions made by policy professionals examined against broad range of philosophical, social, political, and economic imperatives affecting public policy environment. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 702: Comparing Political Institutions. 3 credits.**
Examines political institutions and processes from comparative and international perspectives, and role of political environment in economic trade and investment policy decisions. Examines how generalizability, objective knowledge and understanding, and nature of evidence impact public policy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 704: Statistical Methods in Policy Analysis. 3 credits.
Graduate-level introduction to statistical methods and techniques used in policy sciences. Topics include descriptive statistics, sampling and probability theory, graphical data display, estimation and significance testing, contingency tables, bivariate regression and correlation, and multiple regression, with introduction to computer based statistical analysis. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Studies analytical concepts and techniques used in public-sector overall budgetary and specific project decision making. Includes conceptual concerns and quantitative techniques used in benefit-cost analysis, capital budgeting, financial analysis, and various specialty applications, such as economic and fiscal impact analysis. These are all interrelated by the desire to measure the benefits versus the costs of various alternative public decisions. Attention is given to measuring results over time and the use of present value techniques. Assesses strengths and weaknesses of analytical techniques. Emphasizes the process of defining the appropriate stakeholders affected by decisions, the sources and quality of data, and the rigor of conducting studies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 709: Professional Writing for Policy. 3 credits.
Professional Writing teaches effective writing for the professions. The course includes the fundamentals of writing – grammar, word usage and paragraphing and instruction in selected genres, including news stories, editorials, and research writing. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may not enroll.

Enrollment limited to students in the Schar School of Policy and Gov college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 710: Topics in Public Policy. 1-3 credits.
Focuses on selected topics in public policy not covered by fixed-content public policy courses. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 15 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 712: Policy Systems Analysis and Management Science. 3 credits.
Introduces analytical models and analysis to support decisions. Primary emphasis on understanding techniques of operation research and management science, cost benefits, and cost effectiveness for public decision making. Using mathematical details of algorithms to solve models not emphasized except as it contributes to understanding reliability and validity of methodologies. Through case studies and computer solutions, offers appreciation of when, where, and how to use models. Students demonstrate their understanding of techniques by applying them to term research project on government program. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 714: Topics in Transportation Policy, Operations, and Logistics. 1-3 credits.
Issues in transportation policy, operations and logistics in United States and abroad. Includes practical applications of theories and analysis to policy problems, and emphasizes competence in improving policy in selected domains. May be taken up to three times and simultaneously for sections addressing different subject matter. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
PUBP 715: Introduction to Transportation Systems. 3 credits. Transportation is a service that contributes substantially to well-being of advanced economies. Resource requirements and byproducts of transportation also pose sobering environmental challenges for society. Course examines history and development of transportation systems; contribution to and impact on society; institutions and practices that govern planning, design, construction, operation, maintenance, and retirement from service; and policy and managerial challenges, and tools and techniques for addressing them. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUBP 716: Transportation Operations and Logistics. 3 credits. Provides survey of issues, methods, problems, and strategies. Topics include origins of logistics, industry structure, pricing, underwriting, rate making, compliance, inventory effects, just-in-time inventory management (JIT), materials requirements planning (MRP), customer service and order processing operations, sales functions and operations, dispatch and fleet management functions and operations, rate-setting among three parties, typical electronic and paper document flow, routing and scheduling, route selection, satellite load tracking through dispatch-customer web inquiry, role of ITS in route selection, toll system use, congestion, training activities, and logistics markets. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUBP 717: Analysis for Transportation Managers. 4 credits. Introduces basic methods of transportation analysis and evaluation relating them to policy framework. Covers descriptive statistics, hypothesis testing, contingency tables (Chi-Square analysis), regression, optimization, demand elasticities, and gravity model. Also covers sources of transportation data and research design. Teaches mathematical base and logic of each technique, but primary emphasis is applying methods to relevant policy and management problems. Students required to complete series of assignments along with research proposal focused on applying one or more methods to problem of their own interest. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUBP 718: Transportation Planning and Policy. 3 credits. Introduces highway, rail, air, and water transport planning in United States. Teaches legislative, organizational, fiscal, legal and political environment within which planning for transportation facilities and services takes place. Introduce technical and analytical methods for transportation planning. Focus is largely on public sector, but also considers commercial transport planning and role of private sector in helping to design, manage, and finance transport systems. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUBP 719: Transportation Law. 3 credits. Examines legal environment of transportation. Topics include basic legal concepts and institutions, history and evolution of price and service regulation, environmental law and regulation, labor relations, and property. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUBP 720: Managerial Economics and Policy Analysis. 3 credits. Introduces microeconomics theory and its application in analyzing public policy issues. Provides capability to understand economic literature and theories. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Graduate Regular scale. (p. 84)

PUBP 721: Transportation Economics. 3 credits. Provides basis for understanding economics of transport system, and how transportation relates to urban and regional development. Treats transport generically, but includes case studies of specific modes. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students. Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 722: Practicum in Transportation Policy, Operations, and Logistics. 3 credits.
In-depth field study of ongoing transportation policy, operations, or logistics situations; and design and delivery of actions to manage or resolve problems and opportunities. Range of application areas depends on interests of student body and opportunities faculty identify for “clients” or real-world projects. Illustrative domain areas include surface transportation (highways and transit), airports, and aviation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 723: Metropolitan Transportation Policy. 3 credits.
Recent changes in federal legislation have led to renewed importance for transportation policy and planning. Considerations of clean air, economic development, congestion management, and changing urban form have greatly increased importance of well-planned transportation facilities and policies. Course introduces basic methods of transportation policy analysis and evaluation. Topics include data collection, simplified demand estimation techniques, transportation choice modeling, transportation supply analysis, and ex-ante and ex-post evaluation methods. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 726: Telecommunications Policy. 3 credits.
Examines salient issues associated with telecommunications and electronic commerce in context of public policy questions facing decision makers in government, education, and business. Examples include privacy, electronic signatures, digital divide, bandwidth auctions, IP telephony, CRM, Bluetooth, and Internet taxation. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 730: US Institutions and the Policy Process. 3 credits.
Explores the United States constitutional system of government, including the principal governmental and non-governmental institutions shaping American public policy. Investigates the national policy making process and the interplay between politics and policy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 731: Macroeconomic Policy Assessment. 3 credits.
Covers monetary theory, theories of consumption and saving, budget deficits, economic growth, international finance, and monetary and fiscal policy. Investigates national income and product accounts, savings, employment, and investment, and alternatives to Keynesian principles. Evaluates theories of inflation, investment, capital accumulation, and nonproportional growth. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 732: Labor Markets and Policies. 3 credits.
Analysis of labor market issues and policies, including those affecting employment, wages, working conditions, and unemployment – issues central to current policy debates on job creation, inequality, discrimination, immigration, education, and social programs. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 733: Urban Politics and Policy. 3 credits.
This course explores the factors that guide and affect urban politics and policy including, but not limited to, housing, public education, criminal justice, employment, and economic development. It is designed to provide students with an introduction to the major theories and some of the significant research in urban politics and policy. The primary focus will be on large American cities. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 734: Administrative Law and Public Policy.** 3 credits.
Covers administrative discretion, rule-making and agency proceedings, public participation, political accountability, regulatory processes, oversight, formal adjudication and informal action, lobbying agency administrators, and political and legal nature of the administrative process. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 735: Lobbying and Interest Representation.** 3 credits.
To work effectively within a democratic political environment, policy analyst must understand contemporary methods used to influence policy. Course focuses on roles and techniques of organized influence, and its impact on policy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 736: International Migration and Public Policy.** 3 credits.
Examines demographic, economic, political, and social forces driving international migration on a global basis in the twenty-first century. Considers policy responses within sending and receiving countries and at the global level, including the role of international cooperation and institution-building. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 737: Cases and Concepts in E-Government.** 3 credits.
Electronic government has become a significant public policy issue worldwide. It offers the prospect of dramatic improvements in delivering government services, but also portends major debate about government intrusion. Course covers emerging public policy issues associated with electronic government: job displacement in public sector, privacy, procurement and supply chain management, voter profiling, scope of government services, challenges to "digital democracy," Internet-based voting, land management, the "digital divide," and others. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 739: Media and Public Policy.** 3 credits.
Explores complex relationship between media and public policy. Examines how these forces collide in our modern media, how coverage decisions regarding public policy are made in newsrooms, how advocates use and rely on the media to advance message, and how different media reflect different strengths and vulnerabilities. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 740: U.S. Foreign Policy: Formulation and Practice.** 3 credits.
Focuses on policy formulation and policy implementation. The principal arenas of foreign policy are explored, including the White House, the State Department, the defense and intelligence communities, and the Congressional committees. These arenas are both affected by and influential upon the exogenous systems, such as the media, public opinion, interest groups, foreign governments, and international organizations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Examines the design and operation of expenditure and revenue systems and programs at federal, state, and local levels of U.S. government. Covers a variety of public finance topics including mobilization of resources through planning, adoption, and execution of budget; theory, policy objectives, and microeconomic impact of tax policy and spending programs; and financial controls, cash and debt management, and accounting and financial reporting systems. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** PUBP 720.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 742: Transportation Safety and Security. 3 credits.
Examines transportation safety and security from multimodal perspective for both passenger and freight. Topics include historical context and policy framework, regulation, institutional issues, new security arrangements for preventing organized terrorist attacks, infrastructure design, vehicle design, operating protocols, and information systems. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 743: National Security Management and Policy. 3 credits.
Examines hierarchies in national security from the president to military establishment, including National Security Council, secretary of defense, joint chiefs of staff, commanders-in-chief of unified and specified commands, and intelligence agencies. Covers policies involving national defense, peace-keeping operations, embargoes and other sanctions, defense conversion, and military acquisition policy. Also covers significant legislation affecting national security, such as National Security Act of 1947 and Goldwater-Nichols Act of 1986. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 744: Federal Institutions and Management. 3 credits.
Covers management and policy in federal government, examining policy problems within context of national system of governance, including political environment, evolution and constitutional framework of American government, U.S. Congress, executive branch from White House to agencies, and role of interest groups and political parties. Special attention to implementing legislation, regulatory process, and intergovernmental relations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 745: Transportation and the Environment. 3 credits.
Multidisciplinary examination of implications of transportation and ways public policy has attempted to handle them, and how policy may move in the future. Explores all modes of transportation and most environmental ramifications. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 747: Air Transportation Policy, Operations and Logistics. 3 credits.
Reviews evolution of various forms of air transport such as airlines, general aviation, and military aviation; and includes basics of airline economics, especially as they intersect with airline operations and the management of hub and spoke networks; air traffic control technologies and operations and their intersection with airline economics; safety and security technologies and regulations; future of various elements of air transportation; and effects of deregulation on air travel. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 748: Public Transportation Policy, Operations and Logistics. 3 credits.
Provides general system description for components comprising typical publicly funded transit property. Topics include organizational structure, historical context, budget development including operating and capital budgets, personnel and labor relations, regulatory framework, operations management (bus and commuter rail), reporting structure, customer service, and contracted operations. Also discusses current topics of interest, such as security of transit systems and transit’s role in air quality. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 750: History of Military Operations Other than War. 3 credits.
Focuses on history of military activity in support of noncombat missions. Uses historical examples of early days of United States and colonial histories of Western and Eastern powers. Also touches on use of military force in support of multinational peace operations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 751: International Police Operations. 3 credits.
Analyzes role of international police monitors and domestic police forces in international peace operations. Focuses on how using international police monitors and developing indigenous law-enforcement capabilities can improve prospects for success of international peace operations. Examines origins, mandates, planning, and deployment of international civilian police forces; problems of coordinating international police operations with international military forces and local security forces; international role in developing democratically oriented police forces; relationship of police to the entire judicial system; and the need to continue assistance to all parts of the judicial system beyond initial intervention. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 752: Infrastructure Finance. 3 credits.
Covers planning, budgeting, and financing of infrastructure, including air, water and surface transportation, public utilities, and other major public works. Focuses on private capital markets for projects funding as well as domestic and international loan and grant programs. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 753: Ethics in Public Policy. 3 credits.
Inquiry into ethical and moral issues in public policy. Explores issues that are controversial and often confusing to public policy makers such as health care, secrecy in government, surrogate motherhood, and disability. Perspectives are national as well as global, and deal with impact of culture and politics on ethical dilemmas confronting society. Also looks at processes by which specific ethical systems are incorporated into governing bodies. Larger issues, such as war and peace, just and unjust wars, capital punishment, medical and legal ethics, and communitarian vs. individual liberties are also included, with emphasis on how they affect public policy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 754: Geographic Information Systems and Spatial Analysis for Public Policy. 3 credits.
Introduces Geographic Information Systems (GIS), including spatial data tools, to answer applied policy questions. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Applies behavioral, economic, strategic, and other decision theories to U.S. government and other actors in historical national security crisis cases and current policy issues. Explores tension in decisions between rational goal seeking by actors vs. organizational process, and aims to develop usable decision tools. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 756: Global Medical Systems Policy Analysis. 3 credits.
EQUIPS students with knowledge and skills to critically analyze structures, functions, governing policies, and performance of healthcare systems; to identify problems and solutions; and to devise alternative courses of action and reform policies that would contribute to achieving goals. Prepares students in policy analysis rooted in systems analysis, while linking issues, objectives, and solutions with the larger context in which a system is embedded. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 757: Public Policy in Global Health and Medical Practice. 3 credits.
Introduces international medical policy. Covers globalization of health and medical policies directed at removing disparities, financing, ethical considerations of biomedical research, and use of emerging technologies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 758: Global Threats and Medical Policies.** 3 credits.
Explores medical and health governance, biosecurity and biosafety, health and natural and human-made disasters, humanitarian and emergency assistance, vaccine development, behavior and health, critical infrastructures, bioethics and resource allocations in global context. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 759: National Security Law and Public Policy.** 3 credits.
Introduces legal and policy issues concerning current U.S. national security. Its emphasis is on developments since 9/11. It focuses on the legal rules governing the formulation and execution of U.S. national security policy. It examines U.S. and international law as well as general domestic and foreign policy considerations. In particular, the course considers the principal cases, legislation and treaties impacting U.S. national security. Special emphasis is on the interplay of national security concerns and civil liberties in this age of global and transnational terrorism. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 760: Science and Technology Policy in the 21st Century.** 3 credits.
Investigates roles dynamic scientific research and technological innovation play in contemporary society. Focuses on design and analysis of alternative public policies intended to influence rate and direction of technological change in societies, and use of scientific and technical knowledge in public policy making. Uses historical and international comparative approaches to assess politics and pragmatics of science and technology policy. Includes material from policy evaluation and analysis, organization theory, economics of innovation, and sociology of science and technology. Applications focus on areas of concern to “new economy” such as biotechnology, networked telecommunications and computing, and globalization of technology-based production. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 761: Social Entrepreneurship and Public Policy.** 3 credits.
This course is about people who start new ventures with the explicit objective of creating social as well as private value. As societies and the challenges they face become ever more complex, existing institutions and incentive structures may or may not be adequate to address new generations of problems. Social entrepreneurs innovate new organizational forms with the objective of finding solutions in the public interest. Students in this course will be challenged to integrate elements of business strategy and policy analysis toward the objective of crafting a practical plan for the launch of a novel and needed social venture. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 762: Social Institutions and Public Policy.** 3 credits.
Limited government involvement in social policies changed drastically during the 1960s, with an explosion of social programs designed to ameliorate poverty, reduce crime, and eliminate racial segregation. These new social policies affect many institutions, including family, schools and colleges, criminal justice system, and government agencies. Many of these policies have been controversial, with debates over efficacy and whether they have cured or exacerbated social problems. Course examines evolution and status of selected American social policies, including civil rights policies, education reform, family policy, crime prevention, and other topics chosen by students. Readings and discussions on policy issues linked to readings and discussions on social theories and value systems that underpin social policies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 763: Illicit Trade.** 3 credits.
Examines the role that illicit trade assumes in international trade and commerce. Studies diverse international forms of illicit trade, the role that it assumes in perpetuating conflicts and the most pervasive forms of this illicit trade. Examines the actors who perpetrate this trade and the policies which are needed to stem its growth. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 764: Transnational Crime and Corruption.** 3 credits.
Provides an overview of transnational crime and corruption and its effects on the political, economic, and social development of countries globally. Focuses on the growing problem of transnational crime in conflict regions. The course addresses the links among crime groups, corruption and terrorism. It analyzes diverse range of activities of transnational crime groups in both the legitimate and illegitimate economy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 766: Modern Counterinsurgency: Theory and Practice.** 3 credits.
This course is intended to give students a broad understanding of the nature of counterinsurgency, the policy implications of the U.S. becoming involved in an insurgency, and the multifaceted, interagency approach that is required to successfully combat an insurgency. The course includes case studies, a review of contemporary U.S. counterinsurgency practices, and insights on what the future might hold in this important type of conflict. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 767: Ethics in Health Policy.** 3 credits.
Examines major ethical issues raised in health policy and medical practice around the world. Studies issues comparatively and applies various ethical frameworks to study them. Considers various legal and policy solutions derived to deal with them. Principles of biomedical ethics as well as consideration of several major schools of thought in political philosophy, including utilitarianism, libertarianism and communitarianism will be considered. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 768: Education and Public Policy (Topic Varies).** 3 credits.
Explores current issues and policy initiatives in education policy at federal, state, and local levels, with emphasis on education reform. Issues and topics vary. Typical policy issues include raising academic standards, high-stakes testing, alternative governance including school choice and voucher policies, teacher quality and certification, role of school resources in academic outputs, and equity topics. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 769: Political Violence and Terrorism.** 3 credits.
Examines the persistent threat of terrorism and political violence to international stability generally, and U.S. national security interests in particular. Provides students with a long-term analytical and substantive foundation to deepen their knowledge and effectiveness as policy-makers in national security, diplomacy, homeland security, law enforcement, humanitarian law, peace operations, postconflict reconstruction, development assistance, public diplomacy and other related areas. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 770: Health Policy Analysis.** 3 credits.
Prepares students in global health policy analysis with a focus on processes, roles, expenditures, alternatives and tradeoffs in different country settings. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.
Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 775: Economics of Electronic Commerce. 3 credits.
Focuses on gaining competitive advantage through electronic commerce implementation; identification and growing of new market opportunities and electronic enabling of existing business relationships; and business-to-consumer relationships and economics of strategic procurement, ERP hosting, customer relationship management, catalog hosting, portal operations, and supplier management. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 777: Critical Infrastructure Protection: Policy and Practice. 3 credits.
Introduces critical infrastructure protection and resilience as a policy field, examines its governance framework, and considers its foundations in institutional theory and risk analysis. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 780: Evolution of the Washington Metropolitan Economy. 3 credits.
Includes historical context, role of federal spending, tourism, technology sector, international business, regional organizations, local government policies, and forecasts. Evaluates development patterns in Washington, D.C., Northern Virginia, and suburban Maryland. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 781: Entrepreneurship and Economic Development. 3 credits.
A knowledge spillover theory of entrepreneurship is employed to link between theories of entrepreneurship and theories of innovation and regional development. Other interconnections are explored at the regional level as firms forge networks, clusters, and specialized markets. The public policy issues of these constructs, including competition policy, industrial policy, and cluster policy, are examined within a regional and global context. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 782: International Financial Policy. 3 credits.
Addresses theory of international finance, application to financial policy such as exchange rate regimes, and institutions of international finance. Covers operations of International Monetary Fund and World Bank, development of European Monetary Union, and debate over “international financial architecture.” Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 783: Global Governance. 3 credits.
Surveys important issues in global governance given changes in contemporary world. Explores dynamics and complexity of formal and informal actors, institutional arrangements, organizations, and roles in process of governance in international sphere. Considers states, governmental and nongovernmental organizations, international regimes, social movements, regional associations, and multinational corporations as actors bearing on transnational authority. Examines various vehicles for international coordination and conflict in terms of relevance and opportunities for global governance. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 784: Entrepreneurship, Economics, and Public Policy. 3 credits.
To demonstrate that global capitalism is a process driven by entrepreneurship, students study the Austrian school of economics, which views capitalism as a process of creative destruction, as well as other economists who emphasize entrepreneurship and change. The course reviews the history of capitalism, focusing on the so-called industrial revolutions in Britain, Germany, Japan, and the United States, and on particular historical and current entrepreneurs. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Teaches how to analyze the framing of policy questions and examine culture and organization at group, organizational, interorganizational, and societal levels. Covers case study research, open-ended interviewing, participant-observation, social network analysis, and historical and archival research. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 792: Advanced Economic Analysis for Policy Research. 4 credits.
Builds analytical skills in economic analysis for policy research for students with competence in elementary calculus. Reviews mathematical techniques and covers consumer theory, demand estimation and forecasting, production theory, cost-benefit analysis, technological change and productivity analysis, growth theory, market structure and competition, game theory, capital budgeting, and public sector's role in the economy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** PUBP 720 or equivalent.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 793: Large-Scale Database Construction and Management for Policy Research. 4 credits.
Explores data resources for macro-comparative policy research, and how to use these to inform decision making and evaluate policy performance. Emphasizes how social science data is generated, coded, and managed; and methods for successful presentation of evidence in support of policy recommendations. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 795: Final Project. 1-3 credits.
Project developed drawing on key themes of the program, in consultation with the program director. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

PUBP 799: Master's Thesis. 1-6 credits.
Individualized section form required. Original research endeavor related to student's program concentration. Research must result in document meeting public policy and university standards. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the degree.

**Recommended Prerequisite:** Degree candidacy in a Public Policy Master’s program, completion of required credits of graduate course work, and approval of a thesis proposal by the faculty advisor, two committee members, and the program director.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

PUBP 800: Culture and Public Policy. 1-4 credits.
Comparative analysis of the role of culture in shaping policy environments and outcomes. Introduces analytical methods for studying culture, including measurement of social and cultural change, surveys, and field studies. Presents major findings and research issues regarding the role of culture in democracy, ethnic and gender relations, economic growth and other policy issues. Focuses on differences among national and regional cultures, and their policy implications. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 801: Research Design for Public Policy. 1-4 credits.
Provides an introduction to the theory and practice of research in public policy. Gives students an understanding of issues in the philosophy of science and different approaches to social science research. Provides
broad overviews of quantitative and qualitative methodologies, with a major emphasis on research design, including conceptualization, the role of theory, hypothesis generation, inference and bias. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUBP 720 and PUBP 730, or their equivalents strongly recommended.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 802: The Logic of Policy Inquiry. 1-4 credits.
Defines policy research problems, questions, and hypotheses. Explores modes of policy research, analysis, and rhetoric, including interdisciplinary research strategies. Uses information sources to emphasize written communication of policy research results. Also discusses professional practice issues. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 804: Multivariate Statistical Analysis in Public Policy. 4 credits.
Explores multivariate techniques of contingency table analysis, reliability and validity assessment, factor analysis and scaling, multivariate regression and path analysis, analysis of variance and covariance, and other selected multivariate techniques. Emphasizes applying these techniques to real policy data using sophisticated statistical packages. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUBP 704 or equivalent.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 805: Foundations of Social Science for Public Policy. 4 credits.
Grounds doctoral students in core concepts of political science and economics through critical analysis of classic sources, old and new. Topics may include theory of the state, state-market relations, democratic governance, markets and economic institutions, and other relevant frameworks for public policy research. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUBP 730 or equivalent.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 806: Advanced Management Science for Public Organizations. 3 credits.
Primary emphasis is to understand techniques of operations research and management science, cost benefits, and cost effectiveness for public policy decision making. Some familiarity with elementary calculus and linear algebra helps with understanding mathematical basis of algorithms used to solve models, and reliability and validity of these techniques. Case studies and computer solutions help students understand when and how to use OR models. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Recommended Prerequisite: PUBP 712 or equivalent.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

PUBP 810: Regional Development and Transportation Policy. 4 credits.
Introduces and critiques theory and methods used in regional and transportation policy analysis. Explores central place, growth pole, and economic base theories as well as other theoretical constructs used in regional policy analysis. Introduces and examines methodological tools such as regional econometric modeling, multiobjective programming, shift-share analysis, economic base analysis, location quotient analysis, and input-output analysis. Examines selected regional and transportation public issues using theoretical and methodological constructs. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Schar School of Policy and Government.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 811: Applied Methods in Regional Development and Transportation Policy.** 4 credits.

Students develop research papers that investigate aspects of regional and transportation policy, with a goal of producing publishable papers. Students are expected to prepare a two-page proposal followed by a detailed proposal and finally, a completed paper. Each is critiqued in the seminar, which is organized to conform to the process of review and critique. The instructor works with students individually as well as in seminar sessions. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
- Enrollment is limited to Graduate level students.
- Enrollment limited to students in a Doctor of Philosophy degree.
- Enrollment limited to students in the Schar School of Policy and Government.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 817: Policy Research Topics: Transportation Policy.** 3 credits.

Research workshop examining the development of policy research and relevant methodologies linked directly to faculty and student interests. Students identify cutting-edge policy concerns and execute a research program. The 4-credit version of the course requires a discussion section and research laboratory. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
- Enrollment is limited to Graduate level students.
- Enrollment limited to students in a Doctor of Philosophy degree.
- Enrollment limited to students in the Schar School of Policy and Government.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)


Explores how political and economic institutions and cultural values shape pace, direction, costs, and benefits of technological innovation and scientific research. Special emphasis on the interaction between national institutions and the processes of globalization. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
- Enrollment is limited to Graduate level students.
- Enrollment limited to students in a Doctor of Philosophy degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 823: Topics in Public Policy.** 1-4 credits.

Focuses on selected topics in public policy not covered in fixed-content public policy courses. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 9 credits.

**Registration Restrictions:**
- Enrollment is limited to Graduate level students.
- Enrollment limited to students in a Doctor of Philosophy degree.
- Enrollment limited to students in the Schar School of Policy and Government.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 834: Entrepreneurship, Growth, and Public Policy.** 1-4 credits.
Focuses on a closer consonance among entrepreneurship, geography, and economic growth. Studies the creation and incubation of new knowledge and features three theoretical fields: the new growth theory; the new economic geography; and the new economics of innovation. Develops a knowledge spillover theory of entrepreneurship. Examines public policy issues arising from these constructs, including competition, within a regional and global context. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to Graduate level students.
Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Schar School of Policy and Govt college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 835: Entrepreneurship, Creativity, and Innovation.** 1-4 credits.
Provides multidisciplinary foundation for the study of entrepreneurship, creativity, and innovation, and their effects on regional and national economic growth. Draws from seminal thinkers and emphasizes creativity and innovation. Examines how organizational change, institutional structure, and geographic clustering drive the development of regional and national economies. Explores these issues through the lens of the three Ts of economic growth: technology, talent, and tolerance. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to Graduate level students.
Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Schar School of Policy and Govt college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Examines major institutions that formulate and implement policy at national level. Emphasizes presidency, Congress, and executive branch bureaucracies. Also considers agenda-building institutions such as media, interest groups, political parties, and elections. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to PUAD 840.

**Registration Restrictions:**
Enrollment limited to Graduate level students.
Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Schar School of Policy and Govt college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 841: U.S. Policy-Making Processes.** 4 credits.
Analyzes major U.S. public policy processes. Attention to major instruments for implementing policy, including regulation, grants, tax policy, and market-based mechanisms; and how different methodologies are appropriate for understanding aspects of policy inquiry. Covers ethical and accountability aspects of policy, including federalism, intergovernmental relations, and state and local governance. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit. Equivalent to PUAD 841.

**Registration Restrictions:**
Enrollment limited to Graduate level students.
Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Schar School of Policy and Govt college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 850: Seminar in Public Policy.** 1 credit.
Weekly colloquium series, required of public policy PhD students. Features variety of speakers from universities, government, and nonprofit sectors. Topics include policy formulation and analysis, and theoretical and methodological foundation. Offered by Schar School of Policy & Govt (p. 961). May be repeated within the term for a maximum 4 credits.

**Registration Restrictions:**
Enrollment limited to Graduate level students.
Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Schar School of Policy and Govt college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**PUBP 860: Social Theory, Culture, and Public Policy.** 4 credits.
Covers major social and cultural theories that underlie public policies. Selections from classical and contemporary social theorists relevant to studying social change, social capital, and social organization. Focuses on interplay among culture, social institutions, social processes, and policy. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to Graduate level students.
Enrollment limited to students in a Doctor of Philosophy degree.
Enrollment limited to students in the Schar School of Policy and Govt college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**PUBP 861: Culture and Social Policy Analysis.** 4 credits.
Applies social and cultural theories to policy topics, including methodological approaches and empirical studies. Emphasizes linkage between theory and empirical research, and methods appropriate for social policy study. Policy topics may include poverty and inequality, family, education, crime and corruption, immigration, and health. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 862: Institutional Analysis and Policy.** 4 credits.
Policy analysts are increasingly cognizant of the influence of societal institutions in shaping public policy, not only in terms of policy design, but also as a determinant of implementation. This course reviews the growing literature regarding institutional analysis; furthermore, it considers the ways in which institutions help shape the policies that emerge within a given society and the context by which they are evaluated. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 870: Organizational and Policy Aspects of Informatics.** 1-4 credits.
Examines effects of informatics on national and international policy; setting international policy on informatics; ethical and social change in governments and organizations; shaping national policy in informatics; industry growth; and research methods from various scientific disciplines. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 871: Organizational and Information Technology Challenges of the Knowledge Society.** 4 credits.
Explores links of policy, managing organizations, and information technologies in postmodern era. Includes issues related to contradictions among conventional models of organizational and process design, policy and regulatory structures, ideologies, and information technologies. Provides framework for becoming a sophisticated analyst of policy, organizations, and information technology. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** PUBP 870.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 872: Managing Knowledge-Based, Information-Intensive Organizations.** 4 credits.
Deals with challenges of planning, creating, integrating, and managing contemporary information-technology enabled public and private sector organizations, and managing relationships between public and private enterprises enabled by information technology initiatives. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 880: Global and International Public Policy I.** 4 credits.
Explores multiple dimensions of globalization and internationalization relative to public policy processes and consequences. Offers substantive insight into contemporary public policy dynamics from global and comparative perspectives. Accordingly, it examines a broad range of international cultural, political, technological, and economic policy issues, and their interactions and implications at all levels of analysis. Engages relevant theoretical and methodological approaches and debates to provide tools for analyzing various world problems and policies. Offered by Schar School of Policy & Govt (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**PUBP 881: International Trade Policy.** 4 credits.
Addresses international trade theory, trade policy analysis, regional economic integration, and institutional arrangements governing world trade. Covers World Trade Organization (including constituent agreements in goods, services, intellectual property and trade-related investment measures), regional trade agreements such as NAFTA, dispute settlement regimes, and relations between trade and the environment. Offered by Schar School of Policy & Gov (p. 961). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 900 Level Courses

**PUBP 997: Field Statement.** 1 credit.
Requires work on field statement in preparation for field exam. Notes: Must register in semester during which field exam will be taken. Does not apply to credit degree requirements. Note: Restricted to public policy PhD students. Students must contact program coordinator for permission and CRN number to register via Patriot Web. Offered by Schar School of Policy & Gov (p. 961). May not be repeated for credit.

**Recommended Prerequisite:** Permission of field committee chair.

**Registration Restrictions:**
Enrollment limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

Enrollment limited to students in the Schar School of Policy and Gov college.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**PUBP 999: Dissertation.** 1-9 credits.
Requires research on approved dissertation topic under director on dissertation committee. Notes: No more than 24 credits of PUBP 998 and 999 may be applied to doctoral degree requirements. Offered by Schar School of Policy & Gov (p. 961). May be repeated within the degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment limited to students in a Doctor of Philosophy degree.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### Reading (EDRD)

#### 300 Level Courses

**EDRD 300: Literacy and Curriculum Integration.** 3 credits.
Introduces K-12 content area reading, writing, and language arts. Emphasizes integration of reading and other language arts across curriculum. Notes: Intended as an introduction to educational issues and is not applicable in Mason's graduate-level teacher education programs. School-based field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**EDRD 301: Facilitating Literacy in School or Community Settings.** 3 credits.
Provides knowledge, teaching strategies, and support for students working with developing readers and writers. Emphasizes implementation strategies that foster literacy development; incorporation of trade books and technology resources into individual and small group work; and reflection. Note: Requires 45 hours of school-based field experience during course. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

#### 400 Level Courses

**EDRD 419: Literacy in the Content Areas.** 3 credits.
Assists students in understanding the language and literacy process as it applies to teaching in middle and high schools. Focuses on instructional strategies to support literacy development, including adaptations for culturally diverse and exceptional learners. Offered by Graduate School of Education (p. 162). Limited to three attempts. Equivalent to EDRD 619.

**Registration Restrictions:**

**Required Prerequisites:** (EDCI 469C, 372C or 473C) and (EDCI 479C, 472C or 473C).

*C May be taken concurrently.
*C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Secondary Ed - Biology 6-12, Secondary Ed - Chemistry 6-12, Secondary Ed - Mathematics 6-12, Secondary Ed - English 6-12, Secondary Ed - Physics 6-12 or Second Ed - Earth Science 6-12.
**EDRD 501: Literacy and Curriculum Integration, PK-12.** 3 credits.
Introduces PK-12 content area reading, writing, and language arts. Emphasizes integration of reading and other language arts across curriculum; instructional planning; needs of diverse learners. Field experience in public schools required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**EDRD 515: Language and Literacy in Global Contexts.** 3 credits.
Focuses on the relationship of language to reading and the connection between language structure and how we learn to read. Examines theories of language acquisition and the complexity of language development and the reading process. Explores key factors that influence and enhance language learning and development. Introduces literacy instruction and assessment for all learners, and explores sociocultural perspectives on literacy. Offered by Graduate School of Education (p. 162). May not be repeated for credit. Equivalent to EDRD 525.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDRD 619: Literacy in Content Areas.** 3 credits.
Offers understanding of language and literacy processes as it applies to teaching in secondary schools. Emphasizes reading and writing in content areas, and instructional strategies to support students' literacy development. Focuses on ways reading, writing, speaking, and listening are developed and used in learning discipline-specific curriculum, including adaptations for culturally diverse and exceptional learners. Offered by Graduate School of Education (p. 162). May not be repeated for credit. Equivalent to EDRD 419.

**Registration Restrictions:**
Required Prerequisites: (EDC1 567\(^{B-}\), 569\(^{B-}\), 572\(^{B-}\) or 573\(^{B-}\)) and (EDCI 667\(^{B-}\), 669\(^{B-}\), 672\(^{B-}\) or 673\(^{B-}\)).

\(^*\) May be taken concurrently.

B\(^{-}\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDRD 620: Reading/Writing in Foreign/World Languages.** 3 credits.
Introduces reading and writing processes in foreign and second languages, research on reading comprehension, and effective teaching and assessment approaches for students in PK-12 schools. Topics include reading goals and standards for foreign language learning, sociocultural perspectives, multimedia computer-assistance, research on related strategies and skills, and performance-based assessments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: EDCI 520\(^{B-}\), 560\(^{B-}\) and 684\(^{B-}\).

\(^*\) May be taken concurrently.

B\(^{-}\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
EDRD 629: Literacy Foundations and Instruction for School Psychologists. 3 credits. Examines literacy theory, research, and practice as it relates to children in order for school psychologists to effectively work with teachers and families to improve students' literacy learning. Includes reading, writing, and oral communication. Addresses sociocultural, cognitive, linguistic, psychological, and developmental influences on literacy. Explores evidence-based strategies for reading instruction. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to school psychology program or permission of the literacy program coordinator

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 630: Literacy Foundations and Instruction for Diverse Populations: Birth through Middle Childhood. 3 credits. Study of literacy theory, research, and practice as it relates to younger learners. Includes teaching of reading to English Language Learners and language acquisition for diverse populations (Special Education students who access the general curriculum). Addresses sociocultural, cognitive, linguistic, psychological, and developmental influences on children's literacy. Includes reading, writing, and oral communication. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to the literacy emphasis, or permission of program coordinator.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 631: Literacy Foundations and Instruction for Diverse Populations: Adolescence Through Adulthood. 3 credits. Study of literacy theory, research, and practice as it relates to adolescents and adults. Addresses sociocultural, cognitive, linguistic, psychological, and developmental influences on literacy. Includes reading, writing, and oral communication. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRD 630, admission to literacy emphasis or permission of the program coordinator.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 632: Literacy Assessments and Interventions for Groups. 3 credits. Provides literacy assessments and interventions for groups of learners. Includes exploration of assessment tools for classrooms and large populations. Class members conduct related practice in their own classrooms or specified field settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRD 630 and 631; admission to literacy emphasis, or permission of the program coordinator.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 633: Literacy Assessments and Interventions for Individuals. 3 credits. Provides literacy assessments and interventions for individuals. Includes diagnosis and remediation for learners who find reading and writing difficult. Requires assigned practicum experience. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDRD 630, 631, and 632; admission to literacy emphasis; or permission of program coordinator.

**Recommended Corequisite:** EDRD 637

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
EDRD 634: School-Based Leadership in Literacy. 3 credits.
Prepares reading specialist as a school leader. Expands knowledge of literacy gained in prerequisite courses, and applies it to professional development work with teachers at their own site. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDRD 630, 631, 632, 633, and 637; admission to the literacy emphasis or permission of the program coordinator

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 635: School-Based Inquiry in Literacy. 3 credits.
Capstone course in literacy emphasis focusing on research-based inquiry related to literacy in school settings. Includes review of literature and teacher inquiry project. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDRD 630, 631, 632, 633, 634, and 637; admission to literacy emphasis; or permission of program coordinator.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 637: Supervised Literacy Practicum. 2-3 credits.
Provides supervised experiences assessing students identified as needing additional support in literacy, followed by designing and implementing appropriate data-based instruction. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDRD 630, 631, 632.

Recommended Corequisite: EDRD 633.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDRD 680: Foundations of Coaching and Fostering Professional Learning. 3 credits.
Reviews theoretical, conceptual, and evidence-based foundations of comprehensive literacy programs designed to meet the needs of all learners. Develops specific understandings of the evidence-based foundations of effective professional learning and adult learning theory, including learning strategies appropriate for individual, small-group, and schoolwide professional development settings. Provides experiences with leading effective professional development. Note: This course requires students to conduct related practice in their own schools or specified field settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the Literacy Coaching Graduate Certificate program

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 681: Collaboration and Communication in Literacy Coaching. 3 credits.
Examines research-based coaching models used in school settings. Explores approaches to coaching interactions with a variety of stakeholders in school-based contexts. Provides experiences with facilitating an observation-feedback cycle with individual teachers. Note: This course requires students to conduct related practice in their own schools or specified field settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the Literacy Coaching Graduate Certificate program

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 682: Creating Change through Data-Oriented Coaching. 3 credits.
Explores supports and barriers to school change and improvement. Examines the importance and appropriate use of assessment within a comprehensive literacy program, including strategies for communicating assessment information to relevant stakeholders. Provides experiences with designing and leading professional learning experiences focused on analysis and appropriate uses of assessment data. Note: This course requires students to conduct related practice in their own schools or specified field settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.
Recommended Prerequisite: Admission to the Literacy Coaching Graduate Certificate program

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 683: Trends and Issues in Literacy Instruction and Literacy Coaching. 3 credits.
Provides insight into current trends and issues in literacy instruction and literacy coaching, including, but not limited to, leading and learning with digital technology, diversity and equity in literacy instruction, and challenges in today’s changing schools. Note: This course requires students to conduct related practice in their own schools or specified field settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: Admission to the Literacy Coaching Graduate Certificate program

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

EDRD 797: Advanced Topics in Education. 1-6 credits.
Advanced study of selected topics in education for students preparing for doctoral studies or who have been admitted to the PhD program in education. Notes: May be repeated for credit with CEHD approval. Offered by Graduate School of Education (p. 162). May be repeated within the degree.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

800 Level Courses

EDRD 829: Advanced Foundations of Literacy Education. 3 credits.
Explores advanced foundational theory, research, and methodology across the broad field of literacy both nationally and internationally. Includes analysis of historical and current trends, research, practice, and policy in literacy. Individual projects will connect literacy to students’ areas of interest. Appropriate for PhD in Education students in any specialization. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 800, EDRS 810, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 830: Theory, Research, and Practice in Literacy: Birth through Middle Childhood. 3 credits.
Explores emergent through intermediate literacy. Topics include literacy acquisition and development in academically and linguistically diverse young children; historical and current trends in theories of literacy development; cognitive, linguistic, sociocultural, and instructional influences on literacy development; and assessment. Implications for teacher education and policy are explored. Individual research projects will connect literacy to students’ areas of interest. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 800 and EDRS 810.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 831: Theory, Research, and Practice in Literacy: Early Adolescence through Young Adulthood. 3 credits.
Explores youth culture and socio-historical constructions of adolescence; literacy in the lives of culturally and linguistically diverse learners; multimodal literacy; international literacy contexts; adolescent literacy policy and leadership; content area and disciplinary literacy; literacy needs of special learners; and adult literacy. Individual projects will connect adolescent literacy to students’ areas of interests. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 800 and EDRS 810.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDRD 832: Research Methodologies and Trends in Literacy. 3 credits.
Develops knowledge and skills in the application of research methodologies in literacy to current national and international trends. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDUC 800, EDRS 810, permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**Real Estate Development (REAL)**

**600 Level Courses**

**REAL 605: Policy and Planning of the Built Environment.** 3 credits.
This class takes a holistic approach to examining the complex environment in which all development occurs. Students will be introduced to the public policy, social considerations, and infrastructure involved in creating and supporting the built environment. Emphasis will be placed on evaluating what constitutes “good development” and how enacted public policies impact decision making at the individual project level and on the overall development of communities. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**REAL 615: Brokerage and Market Analysis.** 3 credits.
Students will learn how to analyze market data, evaluate sites in the context of the market, and work with brokerage professionals to maximize sales and/or leasing opportunities. The data component of the class will focus on using industry market analytics resources to identify and interpret trends in the real estate market life cycle. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**REAL 625: Financial Analysis and Valuation.** 3 credits.
Teaches key financial concepts necessary to evaluate real estate investment and development opportunities, such as: cash flow analysis, project financing options, and basic asset valuation. Various quantitative techniques for evaluating project returns, including proforma modelling, will be presented with emphasis placed on understanding the time value of money and the relationships between money, time, and risk. Explores the risks and rewards of using financial leverage and the consequences of default. Considers the economic consequences of public-sector policy and regulation of the real estate and finance industries. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**REAL 635: The Development Process.** 3 credits.
Outlines the development process and the interrelated activities of the key disciplines involved. Introduces students to vocabulary and concepts from multiple industry sectors and teaches them how each respective sector can influence project outcomes. The role of the developer as a leader and coordinator of both the project and development team is stressed. Various product types are considered, including: office, multifamily, retail, and industrial properties. In their final project, students will make portfolio recommendations by analyzing different development scenarios and examining critical decisions at each project stage and the resulting impact on project costs and outcomes. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: REAL 625.\(^\text{B-}\).
* May be taken concurrently.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Real Estate Development.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**REAL 645: Law and Entitlements.** 3 credits.
Provides students with a basic understanding of the relevant law and legal concepts involved in real estate development. Addresses legal issues through the life cycle of a real estate development, including: acquisition, entitlement, construction, leasing, and disposition. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: REAL 605\(^\text{C}\) and 635\(^\text{C}\).
C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Real Estate Development.

Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**REAL 655: Design and Construction.** 3 credits.
Introduces the principles of site and building design and the basic technical aspects of construction. The design portion of the class includes both site and building layouts and challenges students to consider the relationship between design, function, and cost. The construction component features both horizontal and vertical
construction challenges. Throughout the course, students will analyze how related decisions impact project costs/viability. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: REAL 605C and 635C.
Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Real Estate Development.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

REAL 710: Real Estate Entrepreneurship. 3 credits.
Explores real estate development from an applied, entrepreneurial perspective. Emphasis is placed on understanding the unique challenges, risks, and opportunities faced by entrepreneurial developers as opposed to those operating in a larger, institutional context. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: REAL 615C and 625C.
Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Real Estate Development.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

REAL 720: Real Estate Leadership and Project Management. 3 credits.
Focuses on the differences, similarities, and applications of both Leadership and Management in the context of the real estate industry. Students will study characteristics of industry leaders, both historical and contemporary, to assess different leadership styles and how to effectively manage organizations. Emphasis will be placed on different organization structures and organizational management theories including their applications, risks, effectiveness, and best practices. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

REAL 730: Financing Real Estate Projects. 3 credits.
Students will study the key drivers of successful real estate capital deals from the perspectives of both suppliers and users of funds. Emphasis will be placed on exploring the intricacies of financing alternatives, primary and secondary markets, and evaluating the impact of different financing scenarios on project returns. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: REAL 625C.
Requires minimum grade of C.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

REAL 740: Real Estate Investments. 3 credits.
Focuses on the analysis of complex real estate investment opportunities with an emphasis on evaluating investment feasibility. Students will be provided with case study materials for actual commercial real estate offerings in the greater Washington, DC metropolitan area over the past decade. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: REAL 615C, 625C, 635C and 645C.
Requires minimum grade of C.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

REAL 750: MSRED Capstone. 3 credits.
The Capstone Project will be the culmination of the master’s program, offered at the end of the program. The course will combine the theoretical teachings from the program with real world, practical situations. Students will apply concepts learned to current development and construction projects in the Washington, D.C. metropolitan area. One of the sample cases involves the potential future uses of a plot of land in the metro area, a mixed-use high-density area that is slated to undergo significant transformation. The case will request project teams to explore the various options, employing a decision-tree approach to fully analyze the options, and examining the SWOT, local urban management policies, future valuation streams, and environmental impacts of each. A site visit will be required, as well as visits to various developers engaged in similar projects. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: REAL 605C, 615C, 625C, 635C, 645C and 655C.
Requires minimum grade of C.

Enrollment is limited to students with a class of Graduate or Non-Degree.

Enrollment is limited to students with a major in Real Estate Development.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

REAL 790: Special Topics in Real Estate. 3 credits.
Explores contemporary issues and challenges in the management and development of real estate. Topics not covered in the regular real estate development offerings. Course may be repeated with change in topic. Offered by School of Business (p. 888). May be repeated within the term for a maximum 15 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Enrollment is limited to students with a major in Real Estate Development.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

REAL 796: Directed Reading. 1-6 credits.
Admission to the MSRED program or permission of the program director. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Admission to the MSRED program or permission of the program director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

RECR 100: Brazilian Jiu-Jitsu: Intro. 1 credit.
Instructs students in self defense Brazilian Jiu-Jitsu techniques. Appropriate for students who have no prior experience in martial arts or Brazilian Jiu-Jitsu. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 102: Judo: Introduction. 1 credit.
Introduces basic body mechanics of throwing, sweeping, grappling, and submission skills used in Judo and for self-defense. Presents the history of Judo, rules of the sport and proper safety and falling techniques. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 103: Judo: Intermediate. 1 credit.
Emphasizes the execution of proper skills and movements rather than the contact itself. Incorporates both offensive and defensive movements. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 102 or permission of instructor.

Schedule Type: Activity-Based

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 104: Karate: Introduction. 1 credit.
Emphasizes techniques, forms (kata), and sets (drills) from Karate, which combines art and science. Relates techniques with motion and principles and builds on the previous skills to create a web of knowledge. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 105: Karate: Intermediate. 1 credit.
Reviews information and refines skills developed in the introductory class. Introduces new forms and techniques to increase skill performance at the next level. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 104.

Schedule Type: Activity-Based

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 106: Krav Maga: Introduction. 1 credit.
Introduces students to the principles and practice of Krav Maga, an Israeli system of self-protection. Involves knowledge of threat response, skill training in self-protection, and mental preparation for defensive tactics. Prepares students in appropriate protective action in situations of
Continued training in Krav Maga skills for experienced students. Explores multiple opponents, defending third parties, decision making skills, using & defending against weapons, and fight strategy. Notes: Students with injuries or pre-existing conditions that affect performance must inform the instructor. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 106.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 107: Krav Maga: Intermediate. 1 credit.
Continues training in Krav Maga skills for experienced students. Explores multiple opponents, defending third parties, decision making skills, using & defending against weapons, and fight strategy. Notes: Students with injuries or pre-existing conditions that affect performance must inform the instructor. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 110.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Teaches beginner level of self-defense such as defensive techniques to be used against an attacker along with escapes and submissions from a variety of different attacks. Requires participation in basic sparring with particular attention to safety. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 108.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Teaches more advanced defensive and offensive techniques, building on the student's previous training. Emphasizes continuous improvement in physical and mental fitness. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 108.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 110: Tae Kwon Do: Introduction. 1 credit.
Develops intermediate-level skills of Tae Kwon Do, a Korean martial art that predominantly emphasizes kicking. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 110.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 111: Tae Kwon Do: Intermediate. 1 credit.
Develops intermediate-level skills of Tae Kwon Do, building on basic skills learned in the introduction course. Continues to focus on the student's mental development, as well as physical training. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 110.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 112: Tae Kwon Do: Advanced. 1 credit.
Continues to enhance skills of Tae kwon do, focusing on the student's mental development as well as physical training. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 111.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 113: Fencing. 1 credit.
Introduces students to fencing as it relates to a healthy lifestyle and improved quality of life. Covers design, implementation, and evaluation of a personal walking plan based on current fitness levels. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 114: Cardio Conditioning. 1 credit.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 115: Fitness Walking. 1 credit.
Introduces students to cardiovascular exercise as it relates to a healthy lifestyle and improved quality of life. Covers design, implementation, and evaluation of a personal walking plan based on current fitness levels. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 116: Weight Training/Body Conditioning. 1 credit.
Introduces students to fitness and healthy lifestyles. Provides students with an overview of the various types of weight training, with an emphasis on circuit weight training method. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 117: Backpacking. 2 credits.
Introduces practical and experiential activities for students with starting knowledge of backpacking. Involves discussions, demonstrations,
and activities that teach the basics of backpacking. Covers equipment selection, map and compass skills, backcountry cooking, staying healthy in the outdoors, safety and emergency procedures, backcountry ethics (Leave No Trace), and natural history. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 122: Exploring Outdoor Adventure.** 2 credits.
Provides students an introduction to leadership theory and practice in planning outdoor adventure activities. Focuses on building skills necessary to engage in a wide range of individual outdoor adventure activities such as orienteering, geocaching, canoeing, rock climbing, and challenge course team building. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 123: Geocaching.** 1 credit.
Introduces geocaching using a map, compass, and GPS to navigate to a location. Involves discussion, practical application, and research. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 3 credits.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 124: Horsemanship: Introduction.** 1 credit.
Introduces the basics of horseback riding and horsemanship. Emphasizes how to care for a horse, tack a horse, and basic riding skills such as walking, trotting, and jumping small obstacles. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 125: Horsemanship: Intermediate.** 1 credit.
Builds the intermediate skills of horseback riding and horsemanship. Emphasizes technical riding and advancing basic horseback riding skills (e.g. figure S’s, serpentines, and change of direction). Focuses on how equitation affects the horse and horse behavior affects riding and safety. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** RECR 124.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 129: Mountain Biking.** 2 credits.
Provides students with the fundamentals of mountain biking through skills aimed to master techniques in descending and ascending hills, negotiating obstacles, and stopping. Skills in maintaining a bike and appreciation of terrain, navigation, and safety will also be covered.

Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 130: Introduction to Marksmanship.** 1 credit.
Orients users of air powered rifles and pistols in firearm safety during international level target shooting and other competitive marksmanship. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 131: Downhill Skiing.** 1 credit.
Teaches and refines basic skills and techniques of downhill skiing including becoming familiar with use of ski equipment, terminology, and safety rules. Includes lecture and field experience to improve downhill skiing skills. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 132: Snowboarding.** 1 credit.
Teaches and refines basic skills and techniques of snowboarding; includes becoming familiar with use of equipment, terminology, and safety rules. Includes lecture and field experience to improve snowboarding skills. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 133: Indoor Rock Climbing: Intro.** 1 credit.
Introduces equipment, techniques, safety, and planning related to basic rock climbing. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 134: Rock Climbing: Introduction.** 2 credits.
Teaches basic climbing terms, techniques, equipment, and safety practices for top rope belay climbing and rappelling. Builds on communication skills and trust. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 136: Pistol Marksmanship.** 1 credit.
Introduces students to marksmanship skills in Olympic sport and target shooting. Increases students' knowledge of shooting safety,
position shooting, equipment care and maintenance, and shooting sports competition methods and techniques. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 137: Trap and Skeet Shooting: Intro. 2 credits.
Designed to educate the student on gun and range safety. Includes hands-on learning of the games trap and skeet, where competitors fire at clay targets (approximately 4 1/4 inches in diameter and 1 1/2 inches in height) launched from a trap at varying angles. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 138: Trap and Skeet Shooting: Intermediate. 2 credits.
Increases the skill competencies in trap shooting. Includes hands-on learning of the different trap games (16-yard, handicap, doubles, and Olympic trap shoot on a wobble trap) where competitors fire at clay targets (approximately 4 1/4 inches in diameter and 1 1/2 inches in height) launched from a trap at varying angles. Emphasizes gun and range safety. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** RECR 137 or permission of instructor.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 139: Archery: Introduction. 1 credit.
Introduces students to competitive archery. Provides instruction for shooting safety, proper form and technique, equipment maintenance, and rules for competing in Olympic style FITA tournaments. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 140: Rifle Marksmanship. 1 credit.
Introduces students to marksmanship skills in Olympic style small bore competition target shooting. Increases students' knowledge of firearm safety, international target shooting styles, equipment care and maintenance, and shooting sports competition methods and techniques for rifle target shooting. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 141: Basketball: Introduction. 1 credit.
Introduces the basic elements of basketball, including dribbling, passing, shooting, tactics, and strategy. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 143: Soccer: Introduction. 1 credit.
Introduces the basic elements of soccer including dribbling, kicking, passing, trapping, tactics, and strategy. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 144: Soccer: Intermediate. 1 credit.
Prepares the experienced soccer player in the aspects of the competitive game. Applies skills-training to competitive and recreational play. Covers strategies of offense and defense and variation of different systems of play. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** RECR 143.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 145: Volleyball: Introduction. 1 credit.
Introduces students to fundamental knowledge and basic skills of volleyball. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 151: Badminton: Introduction. 1 credit.
Introduces the fundamental skills, rules, and strategies of badminton. Covers basic techniques and etiquette of both singles and double play. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 153: Racquetball: Introduction. 1 credit.
Introduces basic racquetball terms, rules, scoring, safety, and techniques for the forehand, backhand, overhead, and serve, as well as singles and doubles strategies. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 154: Racquetball: Intermediate. 1 credit.
Teaches intermediate skills, including ceiling shots, kill shots, passing shots, back wall strokes, advanced serves, court positions, and tactics and strategies for singles and doubles. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.
Recommended Prerequisite: RECR 153 or permission of instructor.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 155: Tennis: Introduction. 1 credit.
Teaches tennis terms, rules, scoring, techniques for the forehand and backhand ground strokes, volley, overhead, and serve, as well as basic strategy for singles and doubles. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 156: Tennis: Intermediate. 1 credit.
Prepares experienced tennis player in advanced skills: point play, control of pace, direction, and depth of forehand and backhand, ground strokes, and topspin and underspin. Instructs tactical use of volley, styles of play, and strategies for singles and doubles. Introduces principles to refereeing. Applies skills-training to competitive and recreational play. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 155.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 157: Squash: Introduction. 1 credit.
Introduces basic squash terms, rules, scoring, safety, and techniques for drives, volleys, wall boasts, and serves, as well as singles and doubles strategies. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 161: Scuba Diving: Basic. 2 credits.
Provides training toward certification as an open water SCUBA diver. Emphasizes snorkeling (free diving introduction) and SCUBA skills. Covers safe diving skills, the physics of diving, equipment care and maintenance, diving fitness, underwater navigation, record keeping, and other basic SCUBA knowledge. Qualifies students for open water certification by Scuba Schools International (SSI). Requires strong swimming skills, high comfort level under water and physical and mental conditioning compatible with SCUBA industry diving safety standards. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 162: Swimming: Beginning. 1 credit.
Develops a knowledge base and basic swimming skills for the weak swimmer and non-swimmer, and makes them water safe. Includes, but are not limited to, locomotion and propulsive movements in a prone and supine position, breath control, rhythmic breathing, beginning diving techniques, personal safety, and rescue skills to maintain a water-safe environment. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 163: Swimming: Intermediate. 1 credit.
Builds on basic-level swimming skills by providing practice for confidence, refinement of coordination, and improvement of other aquatic skills. Presents more advanced swimming strokes and focuses on physical conditioning and aquatic safety. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 162.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 169: Golf: Introduction. 1 credit.
Teaches basic golf terms, rules, and techniques for the full swing, putting, chipping, and pitching, as well as playing on a golf course. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 153 or permission of instructor.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 170: Golf: Intermediate. 1 credit.
Designed for students with basic golf knowledge and skills. Includes course strategies, course management, the proper use of the rules, club selection, speed of play, skill building, and different golf formats. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: RECR 169.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 171: Latin Dance. 1 credit.
Provides knowledge base of dance fundamentals and skill development in various Latin dances and will include basic rhythms, dance positions, floor alignments, techniques of leading and following, and maintenance of dance frame in partner dancing. Introduces dances which may include but not restricted to Merengue, Mambo, Samba, Salsa, and Bachata. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Activity-Based

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RECR 172: Social Dance. 1 credit.
Provides a knowledge base of dance fundamentals and skill development in various ballroom dances and includes basic rhythms, dance positions, floor alignments, techniques of leading and following, and maintenance
of dance frame in partner dancing. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 173: Social Dance II.** 1 credit. Provides an introduction to the tango and additional patterns for popular social dance that may include the fox trot, waltz, cha-cha, rumba, and Eastern swing. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 174: Competitive Latin and Ballroom Dance.** 1 credit. Increase knowledge base of dance fundamentals and skill development in the competitive style of Latin and Ballroom dances. Focuses on alignments, techniques of leading and following, and maintenance of dance frame in partner dancing in competitive dances. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** RECR 171 or 172 or 173.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 181: Meditation: Introduction.** 1 credit. Introduces students to philosophical foundations of meditation. Guides in the practice of meditation and its application to daily mental focus and concentration. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 182: Pilates: Introduction.** 1 credit. Provides the history and basic foundations of Pilates including an introduction to beginning Pilates exercises and their proper execution; exploration of modifications for certain exercises and the various props which may be used in the group class setting. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 183: Pilates: Intermediate.** 1 credit. Provides students with advanced knowledge and skills in Pilates techniques and exercises. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** RECR 182.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 184: Tai Chi: Introduction.** 1 credit. Increase awareness of the mind and body. Introduces basic principles of Chi (energy) and Yin Yang (polarity) and how they apply to the body through practicing the Tai Chi movements. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 185: Tai Chi: Intermediate.** 1 credit. Teaches Tai Chi Weapon (Tai Chi Straight Sword), as well as basic principles of Tai Chi. Increases awareness of the mind and body. Indicate number. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** RECR 184.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 186: Yoga: Introduction.** 1 credit. Emphasizes mastery of yoga asanas (postures) and pranayama (breathing exercises) to enhance physical fitness and mental concentration. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** RECR 186.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RECR 187: Yoga: Intermediate.** 1 credit. Emphasizes mastery of yoga asanas (postures) and pranayama (breathing techniques) to enhance physical fitness and mental concentration. Focuses on 10 new yoga poses and practice of the complete Sun Salutation. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** RECR 186.

**Schedule Type:** Activity-Based

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**Rehabilitation Science (RHBS) 200 Level Courses**

**RHBS 201: Introduction to Rehabilitation Science.** 3 credits. Introduces the field of rehabilitation science. Surveys various topics within rehabilitation science including development of the field, models of disablment-enablement, facilitators and barriers to enablement across the lifespan. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
RHBS 270: Applied Human Anatomy and Physiology I. 4 credits.
Develops a comprehensive understanding of the interrelationships of anatomy and physiology as observed in the human organism, and introduces application of knowledge to health, disease and dysfunction. Emphasis on musculoskeletal, nervous, cardiovascular, respiratory and integumentary systems. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 271: Applied Human Anatomy and Physiology II. 4 credits.
Develops a comprehensive understanding of the interrelationships of anatomy and physiology as observed in the human organism, and introduces application of knowledge to health, disease and dysfunction. Emphasis on digestive, endocrine, lymphatic, genitourinary, and reproductive systems. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Recommended Prerequisite: RHBS 270.

Schedule Type: Laboratory, Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

RHBS 340: Health, Disease and Dysfunction. 3 credits.
Focuses on basic epidemiology, health promotion and disease prevention, as well as impairments in normal function of the individual resulting in disease and dysfunction. Exploration of the individual and societal impact of health and disease. Introduces current rehabilitation and intervention strategies as well as classification of disease and disability. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 345: Applied Biomechanics in Rehabilitation. 3 credits.
Introduces basic concepts and principles of biomechanics in the study and analysis of functional human movement. Discusses the biomechanical principles as applied in both healthy and clinical populations. Develops an understanding of the scientific and clinical applications of biomechanics to rehabilitation interventions. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Recommended Prerequisite: College level physics or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 350: Clinical Physiology and Human Performance. 3 credits.
Investigates the study of human physiology and how it relates to physical activity, health, and functional ability. Specifically, examines the metabolic, locomotive, endocrine, cardiovascular, and pulmonary responses to physical activity and their contributions and limitations to human performance. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Recommended Prerequisite: College-level chemistry or permission of instructor or department chair.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 375: Gait and Functional Movement Analysis. 3 credits.

Recommended Prerequisite: RHBS 270 and RHBS 271 or similar courses in human anatomy and physiology.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 380: Neural Basis of Movement. 3 credits.
Introduces major topics in sensory and motor neurophysiology as they relate to motor control and motor learning. Includes organization of sensory and motor systems, neural mechanisms of learning and memory, and current neurophysiological testing techniques. Special emphasis is placed on the implications for motor impairment and recovery following nervous system disease or injury. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Recommended Prerequisite: RHBS 270 and RHBS 271 or equivalent anatomy and physiology course.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 390: Clinical Assessment of Functional Capacity. 3 credits.
Examines the scientific basis and theory for exercise assessments in healthy persons and those with chronic disease and disability. Covers cardiorespiratory fitness measurements, cardiac function, body composition, muscular strength and endurance. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Recommended Prerequisite: Undergraduate course in anatomy and physiology or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

RHBS 410: Physical Activity and Public Health. 3 credits.
Investigates the basic principles and concepts of epidemiology and the influence of exercise and physical activity on the most common risk factors for prevalent chronic diseases in the United States of America. Offered by Rehabilitation Science (p. 274). Limited to three attempts.
RHBS 420: Adult Health and Function. 3 credits.
Approaches the study of function and normal development, how it is attained and how it is optimized with a multi-systems viewpoint. Focuses on the components of functional movement. Addresses strategies for assessing, promoting and maintaining functional independence. Highlights current treatment approaches of disease and dysfunction. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 430: Advanced Functional Clinical Assessments. 3 credits.
Examines the theory behind functional assessments used in those with chronic diseases and/or disability. Current measures used to assess function in clinical populations will be performed and discussed. Established clinical and research measures will also be examined and conducted. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: RHBS 390C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 450: Psychosocial Adaptation in Rehabilitation. 3 credits.
Examines the psychosocial impacts of rehabilitation and disability. Provides a disability perspective from the individual and society and explores the interaction between them. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Recommended Prerequisite: Completed RHBS 201 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 455: Research in Rehabilitation Science. 3 credits.
Describes central principles of scientific method and ethical and regulatory responsibilities of rehabilitation science researchers. Explores application of scientific method in basic, interventional, clinical and translational research. Develops ability to read literature critically and make appropriate scientific inferences. Introduces basics of grant writing. Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Mason Core: Capstone (p. 142)
Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: STAT 250 or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Senior.
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 489: Introduction to Clinical Research. 1 credit.
Provides students with a basic understanding of what clinical research is and the scientific principles on which it is based. Starts with a historical perspective on clinical research and then goes on to explore the following topics: purpose of clinical research, ethical and regulatory implications of clinical research, and the roles and responsibilities of all parties involved in clinical research. Offered by Rehabilitation Science (p. 274). Limited to three attempts.
Recommended Prerequisite: Course is open to honors college students only or by permission of instructor.

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 490: RS: Clinical Research Internship. 3 credits.
Practical experience in a clinical research setting under the direction of a mentor. Each student is required to work with an experienced clinical investigator who agrees to provide the trainee mentorship. Clinical research embraces a spectrum of scientific disciplines that use a variety of study methods. Therefore, the multidisciplinary approach to clinical research is emphasized during didactic interactions. Note: In addition, an application must be submitted in the semester prior to enrollment in the course. During the semester prior to entry, students may be asked to acquire certain competencies/certifications in order to fully participate at their research site (for example, human subjects research protections training, lab safety certification, HIPAA training). Offered by Rehabilitation Science (p. 274). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: Course is open to honors college students only.

Schedule Type: Internship

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RHBS 491: Directed Research. 1-3 credits.
Engages students in a directed research project under the guidance of a faculty member. Offered by Rehabilitation Science (p. 274). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Permission of the instructor.

Schedule Type: Independent Study

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

600 Level Courses

RHBS 606: Clinical Exercise Physiology. 3 credits.
Examines acute and chronic alterations and adaptations associated with exercise and training. Covers role of exercise therapy in preventing and rehabilitating from disease across lifespan. Particular emphasis on role of exercise therapy in cardiorespiratory, musculoskeletal, and metabolic diseases. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

RHBS 620: Psychosocial Aspects of Rehabilitation. 3 credits.
Explores social and psychological impacts of disability. Processes by which people with disabilities adapt to limitations will be examined, as will the influence society has in promoting independence/dependence among people with disabilities. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

RHBS 650: Foundations of Rehabilitation Science. 3 credits.
Examines the field of rehabilitation science with emphasis on the core theories and models of this emerging discipline. Surveys various topics within rehabilitation science including the history and development of the field, assistive technologies, pathology and impairment research, functional limitations research, disability research, translational research, and ethical considerations in clinical and research settings. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Schedule Type: Seminar

Grading: This course is graded on the Graduate Regular scale. (p. 84)

RHBS 651: Research Design and Methods I. 3 credits.
Explores quantitative and qualitative research methods, principles and techniques necessary for implementation of health science research. Offered by Rehabilitation Science (p. 274). May not be repeated for credit. Equivalent to GCH 651.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**RHBS 652: Research Design and Methods II. 3 credits.**
Explores advanced experimental and quasi-experimental research methods frequently utilized in rehabilitation research. Develop theoretical and practical knowledge necessary to conduct independent research. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

Recommended Prerequisite: RHBS 651 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**RHBS 706: Clinical Assessment of Fatigability. 3 credits.**
Reviews the scientific literature describing the theories of fatigue and fatigability. Assessments and methodologies used to evaluate fatigue and fatigability will be performed. Students will apply the theories of fatigue to further their understanding of specific clinical problems. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

Recommended Prerequisite: Enrolled in RHBS program, or with permission of the course instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**RHBS 710: Applied Physiology I. 3 credits.**
Examines the primary bio-regulatory and communication systems. A detailed study of physiology for graduate students interested in health and human movement, chronic illness, and disability. Covers energy metabolism, endocrine, immune, neurological, and muscular systems. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

Registration Restrictions:
course sequence in anatomy and physiology (100 level or above) or one course in animal or comparative physiology (300 level or above) or one course in human physiology (300 level or above).

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RHBS 745:** Metabolic Basis of Disability. 3 credits.
Examines anatomy and physiology of organs and systems involved in regulating metabolism; assesses relationships among hormonal and central nervous system regulation in the production and regulation of energy. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

**Recommended Prerequisite:** RHBS 710

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RHBS 746:** Movement Control and Learning. 3 credits.
Describes how the human nervous and musculoskeletal systems work together to move the human body, with a special emphasis on movement disorders and disabilities. Topics include movement and motion principles, muscle force production, physiology, and adaptation, along with the measurement of muscle activity, body movements, and body forces. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

**Recommended Prerequisite:** RHBS 710

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RHBS 750:** Physiology of Clinical Exercise Interventions. 3 credits.
Critiques current knowledge of exercise prescription in both healthy and clinical populations. Examines physiological effects of exercise interventions, with emphasis on chronic disease and disability. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

**Recommended Prerequisite:** RHBS 606.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RHBS 754:** Movement Disorders: Etiology, Assessment, and Analyses. 3 credits.
Applies concepts of neuromechanics to the assessment and analysis of normal and pathological movement using both existing clinical assessments and laboratory-based measures of body kinematics, kinetics, muscle activity, and perception/cognition interactions with movement. Discusses benefits and limitations of assessment and analysis techniques as well as current research with regard to advancing these techniques. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

**Recommended Prerequisite:** RHBS 746.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RHBS 772:** Applied Biomechanics in Rehabilitation. 3 credits.
Describes concepts and principles of biomechanics for the study and analysis of functional human movement within the scope of rehabilitation science. Describes the biomechanical principles as applied in both healthy and clinical populations. Develops an understanding of the scientific and clinical applications of biomechanics to rehabilitation interventions. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RHBS 776:** Movement Analysis of Function. 3 credits.
Applies biomechanical principles to record and analyze functional activities, including walking, sit-stand, and reaching. Focuses on data acquisition, processing, and compiling of kinematic and kinetic data
including motion capture, center of pressure, and electromyography. Evaluates movement from a joint, total body, and muscular perspective related to performance. Addresses how age and injuries affect functional performance. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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### 800 Level Courses

**RHBS 816: Rehabilitation Efficacy and Effectiveness Research.** 3 credits.
Examines the theory and methods of comparative effectiveness studies and their relationship to developing Rehabilitation Science and other disciplines to effect better clinical practice by identifying benefits/harms of prevention and treatment and explores the implications of evidence for comparative effectiveness in developing health care policy. Offered by Rehabilitation Science (p. 274). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**RHBS 850: Teaching Practicum.** 3 credits.
Prepares students for teaching role as an academic through direct teaching experiences in undergraduate courses in Rehabilitation Science under the supervision of a graduate faculty member, including syllabus development, lecture preparation, presentation skills, grading, and course evaluation. Offered by Rehabilitation Science (p. 274). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment limited to students in the HH-PHLD-RHBS program.

Enrollment is limited to Graduate level students.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

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**RHBS 894: Special Topics in Rehabilitation Science.** 3 credits.
In-depth study of contemporary topics in Rehabilitation Science. Course topics vary each semester. Notes: Students may take up to 9 credits of RHBS 894 with permission of program director. Offered by Rehabilitation Science (p. 274). May be repeated within the term for a maximum 9 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate level students.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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### 900 Level Courses

**RHBS 940: Independent Study.** 1-6 credits.
In-depth study of selected area of rehabilitation science under the direction of faculty. Offered by Rehabilitation Science (p. 274). May be repeated within the degree for a maximum 24 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment limited to students in the HH-PHLD-RHBS program.

Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**RHBS 960: Directed Research.** 1-6 credits.
Research on a pertinent topic in rehabilitation science. Must be arranged with instructor before registering. Offered by Rehabilitation Science (p. 274). May be repeated within the term for a maximum 24 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**RHBS 998: Doctoral Dissertation Proposal.** 1-9 credits.
Work on research proposal that forms basis for doctoral dissertation. Offered by Rehabilitation Science (p. 274). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Advancement to PhD candidacy.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Rehabilitation Science.

Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**RHBS 999: Dissertation Research.** 1-9 credits.
Dissertation research on a specific topic under the direction of a faculty member. Offered by Rehabilitation Science (p. 274). May be repeated within the degree for a maximum 24 credits.

**Registration Restrictions:**
Religious Studies (RELI)

100 Level Courses

RELI 100: The Human Religious Experience. 3 credits.
Examines main forms of religious expression as embodied in several important religious traditions in contemporary world. Investigates religious experience; myth and ritual; teachings and scripture; ethical, social, and artistic aspects of religion; and nature and function of religion in human society. Offered by Religious Studies. (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

RELI 211: Religions of the West. 3 credits.
Focuses on Judaism, Christianity, and Islam from historical, comparative, and cross-cultural perspectives. May also include modern developments of those faiths such as Mormonism and Baha’ism, as well as Zoroastrianism and religions of ancient Near Eastern cultures. Offered by Religious Studies. (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 212: Religions of Asia. 3 credits.
Surveys religions of India, Hinduism, Jainism, Sikhism, Buddhism, and the religions of the Far East, China, and Japan, including Daosim, Confucianism, Shinto, from origins to present. Offered by Religious Studies. (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 235: Religion and Literature. 3 credits.
Explores the relationship between religion and literature in different times and cultures, the influence of religion on literary works, and how literature expresses major religious themes such as death and immortality, divine will and justice, suffering and human destiny, and religion and state. Offered by Religious Studies. (p. 490). Limited to three attempts.

Mason Core: Literature (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 240: Death and the Afterlife in World Religions. 3 credits.
Explores how selected world religions address the universal experience of death and express their beliefs in an afterlife. Focuses on the scriptures, beliefs, rituals and customs of selected world religions as they reflect each tradition’s response to the most basic question about human destiny - how human beings face death and attempt to transcend it. Offered by Religious Studies. (p. 490). Limited to three attempts.

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 272: Islam. 3 credits.
Introduces basic religious beliefs and practices of Islam, with view to diverse manifestations of Islamic culture in different ethnic and social contexts. Provides overview of essential rituals of Islamic life, mystical practices of Sufis, certain popular forms of religious practice, sources and application of Islamic law, and distinctive Islamic artistic and literary forms. Offered by Religious Studies. (p. 490). Limited to three attempts.

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

RELI 313: Hinduism. 3 credits.
Introduces Hindu religion and thought, beliefs, rituals, ethics and religious practices. Emphasis on classical Hinduism, but also covers Hinduism and modernity, modern Hindu movements, and Hinduism as a global religion. Offered by Religious Studies. (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 314: Chinese Philosophies and Religious Traditions. 3 credits.
Surveys major religious traditions and philosophical themes of China including Confucianism, Taoism, and Chinese Buddhism and Neo-Confucianism. Examines foundation of Chinese world view and spirituality by investigating diverse religious traditions that have created tensions and harmony among them. Offered by Religious Studies. (p. 490). Limited to three attempts.

Specialized Designation: Non-Western Culture
Recommended Prerequisite: RELI 212 or permission of instructor.

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 315: Buddhism. 3 credits. 
Surveys Buddhist religious traditions. Includes historical development of Buddhism in India, China, and Japan, examining both Theravada and Mahayana traditions; philosophical and religious significance of Buddhism; and social and political implications of Buddhist traditions in South Asian and East Asian countries. Offered by Religious Studies (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 316: Modern Christian Thought. 3 credits.
Examines influential Christian thinkers and Christian intellectual trends of the modern period, from the Enlightenment through the present. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 317: Daoism. 3 credits.
Explores philosophical ideas, spiritual orientation, religious practice, and social and political values in Daoist tradition reading classic Daoist texts including Dao De Jing, Chuang-tzu, and other sources. Discusses Daoism in light of comparative and cross-cultural studies for global understanding of issues on concepts of nature, human nature, and good and evil. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 320: Religion and Revolution in Latin America. 3 credits.
Explores the intersection between Christian and revolutionary thought, such as Marxism and existentialism, in Latin America after the 1960s that formed liberation theology. Emphasis on historical, philosophical and interdisciplinary issues. Offered by Religious Studies (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 322: Religions of Africa. 3 credits.
Explores traditional religious practices and world views in Africa south of the Sahara, the spread of African religions to the Caribbean and the Americas, the forms that religions imported or imposed from the north have taken in Africa south of the Sahara, and the interaction among the religious cultures of Africa, European Christianity and Islam. Offered by Religious Studies (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 330: Religion, Fantasy and Imagination. 3 credits.
Explores the worlds of religion, fantasy and imagination, presented in selected writings of 20th century fantasy authors, including Lewis, Tolkien, Pullman, Rowling. Covers ideas of quest for enlightenment, redemption or salvation, conflict between good and evil, worlds of the supernatural, parallel dimensions and their inhabitants. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 331: Religion in America. 3 credits.

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 332: Mormonism. 3 credits.
Examines the origins and development of Mormonism, as embodied in the Church of Jesus Christ of Latter-day Saints and other related churches. Introduces students to a critical analysis of Latter-day Saint scriptures, rituals, and history. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 333: Spiritual Autobiography. 3 credits.
Investigates the genre of autobiography as employed by religious authors, both classical and modern. Introduces students to personal, historical, and religious doctrinal contexts that shape the autobiographical literature. Offered by Religious Studies (p. 490). Limited to three attempts.

Mason Core: Literature (p. 142)

Schedule Type: Lecture

Grading: 
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 334: American Scriptures. 3 credits.
In this course, students will analyze texts that Americans have treated as "scripture." Students will read texts that present themselves as scripture, such as selections from the Book of Mormon and a Holy Sacred and Divine Roll and Book (a Shaker text). They will also read texts that have attained a sort of canonicity within American culture, such as the Declaration of Independence and Martin Luther King Jr’s "Letter from
Religious Studies (RELI)

Birmingham Jail." Students will thus gain more than a valuable familiarity with a variety of American religious traditions. They will also reflect on the way that, even in a digital age, texts continue to shape American identity. Offered by Religious Studies (p. 490). Limited to three attempts. Equivalent to HIST 334.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 337: Mysticism. East and West. 3 credits.
Comparative treatment of major expressions of mysticism in East and West through exploration of various ways of understanding mystical experience. Readings and discussion emphasize one or more of the Eastern (Hinduism, Buddhism, Taoism, Zen) and Western (Judaism, Christianity, Islam) traditions. Offered by Religious Studies (p. 490). Limited to three attempts.

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 341: Global Perspectives on Spirituality and Healing. 3 credits.
Cross-cultural investigation of human understandings of relationship between spirituality and health. Beliefs about spiritual causes of sickness and health and spiritual techniques of healing in variety of world cultures placed in context of religious beliefs of those cultures. Offered by Religious Studies (p. 490). Limited to three attempts.

Mason Core: Global Understanding, Encore: Well-Being (p. 142)

Recommended Prerequisite: 30 credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 350: Religion and History of Ancient Israel. 3 credits.
Examines religion and history of ancient Israel from origins around 1250 BCE to Babylonian Exile in 587 BCE. Topics include debate on historical value of biblical narratives, extra-biblical texts mentioning Israel, move from polytheism to monotheism, archaeology and artifacts, and development of Israel's unique religious and historical self-understanding. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 352: Judaism from Exile to Talmud. 3 credits.
Examines Jewish religion, history, and literature from the Babylonian Exile to third century C.E. Special attention to development of Hebrew Bible, Apocalyptic and Apocryphal literature, belief in resurrection and final judgment, Dead Sea Scrolls, Jewish sects, and emergence of Christianity and Rabbinic Judaism. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 353: Jewish Political Tradition. 3 credits.
Explores Jewish thinkers' attitudes towards politics and state. Topics include traditional sources, theological and political crisis of modern times, liberal Jewish thought, Zionist ideology, Israel as a separate state, relationship between religion and politics in modern Israel. Offered by Religious Studies (p. 490). Limited to three attempts.

Recommended Prerequisite: RELI 211, 251 or 252, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale.

RELI 355: Sufism. 3 credits.
Examines the tradition of Islamic mysticism, Sufism, through an exploration of the literature produced by Sufis themselves. Provide general introduction to Sufism and its spiritual perspective and investigates various genres of Sufi literature, including hagiography, symbolic scriptural exegesis, spiritual autobiography, didactic allegory and love poetry. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale.

RELI 356: Jesus and the Gospels. 3 credits.
Examines Gospel accounts of Jesus in context of first-century Christianity. Applies variety of historical and literary methods to gain understanding of Jesus and history and theology of early church. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale.

RELI 357: Gender and the Body in Judaism. 3 credits.
Explores distinctively Jewish approaches to questions of gender, sexuality, and the body as described in the legal, religious, ethical, and literary material in the Jewish tradition. Topics include the "body of God," circumcision, laws of purity, rites of passage, the synagogue, feminist theology, and masculine and feminine stereotypes. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale.

RELI 360: Religion and Politics. 3 credits.
Explores the roles of religion in contemporary political life in the United States and abroad. Emphasizes religion in current political debates. Includes history, political theory, sociology, and theology to present a comprehensive understanding of the topic. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 361: Evangelical America. 3 credits.
Introduces the intellectual and social sources of evangelical Protestant traditions in the United States. Examines varieties of evangelical beliefs and practices. Surveying a range of themes, including science, sexuality, politics, and environmentalism, students examine how evangelicals have defined themselves in opposition to secular society but also have engaged the secular in an effort to convert souls, manage personal behavior, and transform American society in their image of Christian community. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 362: Religion and Film. 3 credits.
Surveys representations of religious beliefs, practices, persons, and institutions in popular film. Focuses on the media consumption of box office movies in the United States. Examines how religion is imaged in film and how that religious imagination relates to social constructions of national, ethnic, racial, gender, and sexual identities. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 363: Catholicism. 3 credits.
Focuses on the beliefs of the over one billion Roman Catholics in today's world. Probes the history, doctrine, symbols, rituals, practices, and material culture of the world's largest church. Considers Catholicism's dialog with secularism and discusses controversies and challenges facing the church today. Offered by Religious Studies (p. 490). Limited to three attempts.

Recommended Prerequisite: 3 credits in religious studies or philosophy or permission of instructor
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 364: Religion and Law in the United States. 3 credits.
Explores issues relating to law and religion. Focuses on the legal doctrines that have arisen in cases under the Establishment and Free Exercise Clauses of the First Amendment. Topics include religion and public schools, government aid to religious institutions, including school vouchers, government endorsement of religious symbols, freedom of religious expression, and freedom of religious practice. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 365: Muhammad: Life and Legacy. 3 credits.
Examines life and character of the founder of Islam, as remembered and understood by Muslims, as well as explores influence of his paradigmatic life and teachings on Islamic religious discourse and culture. Addresses Western critical studies of the accounts of Muhammad's life and contemporary controversies regarding Muhammad. Offered by Religious Studies (p. 490). Limited to three attempts.

Specialized Designation: Non-Western Culture
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 370: Judaism. 3 credits.
Studies Judaism from origins to present. Includes origins of Judaism B.C.E.; Rabbinic Judaism; Jews in the Middle Ages; Hasidic and Mystical Judaism; Enlightenment; persecution and Holocaust; contemporary American Judaism; and Jewish, Christian, and Muslim relations. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 372: American Judaism. 3 credits.
Surveys Jewish religious life focusing on various types of American Judaism such as orthodox, conservative, reform, reconstructionist, as they have developed historically and continue to evolve. Emphasizes issues and challenges facing contemporary Judaism. Offered by Religious Studies (p. 490). Limited to three attempts.

Recommended Prerequisite: 3 credits in RELI or PHIL or permission of instructor
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 374: Islamic Thought. 3 credits.
Examines Islamic views on fundamental issues in religious thought, such as nature of God, nature of man, and relationship between God and man as reflected in both divine revelation and human religious vocation. Investigates intellectual approaches to these problems within Islamic tradition, including those of theological, philosophical, and mystical thinkers. Offered by Religious Studies (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)
Specialized Designation: Non-Western Culture
Recommended Prerequisite: RELI 211, 3 credits in religious studies, or permission of instructor
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 375: Qur'an and Hadith. 3 credits.
Explores two primary sources of Islamic belief and practice: Qur'an and Hadith. Discusses thematic structure and literary quality, and examines theological and moral issues. Also introduces various methods of interpretation and critical analysis applied to texts in both Islamic and Western scholarship. Lecture and discussion. Offered by Religious Studies (p. 490). Limited to three attempts.

Specialized Designation: Non-Western Culture
Recommended Prerequisite: 3 credits in philosophy and religious studies, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 376: Special Topics in Religious Thought. 3 credits.
Selected topics from a philosophical perspective. Offered by Religious Studies (p. 490). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: 3 hours of Religious Studies or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 379: Islamic Law, Society, and Ethics. 3 credits.
Introduces foundational sources and principles of Islamic Law or shariah. Examines the historical development and application of Islamic law, its role in Muslim societies, and its relationship to Islamic social ideals and ethical discourse. Offered by Religious Studies (p. 490). Limited to three attempts.

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 381: Beginnings of Christianity. 3 credits.
Examines early Christian church from time of Jesus to 700 C.E. Covers internal development of Christianity as it formed official doctrines and institutions, and external relations of Christians with followers of other religions in Roman Empire. Special attention to reasons for success of Christianity in Roman world. Offered by Religious Studies (p. 490). Limited to three attempts.

Recommended Prerequisite: 3 credits of religious studies, RELI 252, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 384: Global History of Christianity. 3 credits.
Explores the history of Christianity around the world in the context of political and social structures as well as religious beliefs and practices. Offered by Religious Studies (p. 490). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 386: Islam in the Modern Age. 3 credits.
Covers the study of the Islamic tradition and its peoples during the last two centuries—the period of Islamic reform in the wake of Western hegemony—and the efforts of the community to readjust itself in light of Westernization and modernization, as well as the broader challenges of the secular, liberal, and technical age. Offered by Religious Studies (p. 490). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 387: Islam, Democracy, and Human Rights. 3 credits.
Evaluates the political and religious goals of Muslim societies and governments, and whether these goals are conducive to the development of democratic institutions to promote democratic cultures and explicit support for human rights, as well as to these societies' full integration in an international order founded upon secularism and modernism. Offered by Religious Studies (p. 490). Limited to three attempts.

Specialized Designation: Non-Western Culture

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

RELI 403: Scripture and Authority in World Religions. 3 credits.
Examines origins, development, and role of Scripture (religious texts) in world religions, concentrating on issues of divine inspiration, authority, authenticity, and canon. Offered by Religious Studies (p. 490). Limited to three attempts.

Recommended Prerequisite: 60 credits including 6 credits of Religious Studies or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 405: Religion, Values, and Globalization. 3 credits.
Explores diverse value systems, ethical norms, and teaching found in different religious traditions and cultures. Examines assumption that globalization is attempt to universalize Western culture. Offered by Religious Studies (p. 490). Limited to three attempts.

Recommended Prerequisite: 60 credits, including 6 credits in Religious Studies or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 407: Women in the World’s Religions. 3 credits.

Recommended Prerequisite: 60 credits; 6 credit hours in Philosophy or Religious Studies.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
RELI 420: Seminar. 3 credits.
Senior seminar on a specific topic of relevance to religious studies. Content varies. Notes: May be repeated when topic varies. Students with other majors may be take the course if the topic is sufficiently close to their field of study. Offered by Religious Studies (p. 490). May be repeated within the term for a maximum 12 credits.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: Major in religious studies with 60 credits including 9 credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 425: Directed Readings in Religious Studies. 1-3 credits.
Individual readings and research in religious studies on a topic selected in consultation with instructor. Offered by Religious Studies (p. 490). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Major in religious studies with 60 credits including 9 credits in religious studies.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 426: Religious Studies Internship. 3 credits.
Course rubric to be used for acquiring academic credit in Religious Studies for religious studies related internships. Offered by Religious Studies (p. 490). Limited to three attempts.

Recommended Prerequisite: The completion of 60 undergraduate credits and 12 credits toward the Religious Studies major or minor.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RELI 490: Comparative Study of Religions. 3 credits.
Cross-cultural examination of comparative aspects of religious phenomena. Examines significance of religious phenomena from diverse religious and cultural perspectives, and investigates patterns of religious phenomena that have appeared in world cultures and civilizations. Offered by Religious Studies (p. 490). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Specialized Designation: Non-Western Culture

Recommended Prerequisite: 9 credits in religious studies including RELI 211 and RELI 212, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

RELI 591: Special Topics in Religious Studies. 3 credits.
Topics in religious studies selected by importance in the field and pertinent to the role of religion in society and culture. Emphasis on historical, interdisciplinary, and cross-cultural issues. Notes: May be repeated when topic is different with permission of department. Offered by Religious Studies (p. 490). May be repeated within the term for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

RELI 600: Interdisciplinary Pathways in the Study of Religion. 3 credits.
A co-taught course by Religious Studies faculty that introduces students to the graduate study of religion through a survey of different lines of inquiry in the field and different methodological approaches in the discipline. Offered by Religious Studies (p. 490). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

RELI 630: Theories and Methods in the Study of Religion. 3 credits.
Examines study of religion as academic discipline. Evaluates various intellectual approaches and methods used in study of religious phenomena. Offered by Religious Studies (p. 490). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

RELI 632: Interreligious Dialogue. 3 credits.
Examines the philosophical and theoretical foundation for religious pluralism and dialogue and different approaches to interreligious dialogue and understanding among leading interreligious thinkers. Offered by Religious Studies (p. 490). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 633: Issues in Religious Ethics.** 3 credits.
Examines how perceptions of ultimate reality shape ethical values and behaviors of various religious traditions. Addresses problems in interpretation of authoritative foundational teachings in contemporary contexts. Special attention to non-Western religions. Offered by Religious Studies (p. 490). May be repeated within the degree for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 634: Topics in American Religion.** 3 credits.
Examines key issues related to religion in North America and the United States. Topics may include evangelicalism/revivalism; religion and the American founding; religious conversion; the intersection of religion and race; new religious movements; religion and immigration. Offered by Religious Studies (p. 490). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 635: World Religions in Transition and Transformation.** 3 credits.
Explores transitions and transformations in selected world religions as they respond to and influence forces of cultural change, social values, and the crises of history. Fresh or modified constructions of the sacred and their relationship to world and humans will be examined. Offered by Religious Studies (p. 490). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 636: Religion and the Natural Environment.** 3 credits.
Explores contemporary religious thought on the morality and ethics of environmental responsibility. Begins with an exploration of this issue in Western Christian thought and examines religious approaches to the environment in the traditional and contemporary thought of other major world religions, including Judaism, Islam, Hinduism, Buddhism, and the Chinese traditions. Offered by Religious Studies (p. 490). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 637: Religion and Secularity in State and Society.** 3 credits.
Examines the relationship between religion, state, society, and law in modern contexts, and across the global and religious spectrum, through the lens of different theoretical approaches to this issue. Offered by Religious Studies (p. 490). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 640: Religion and Law.** 3 credits.
Focuses on United States Supreme Court decisions on religion clauses over the last 50 years. Provides a close reading of court’s opinions and considers material from religious legal traditions. Covers contemporary political debates on issues like prayer in public schools, displays of religious symbols, ceremonial references to God, and public aid to religious schools. Offered by Religious Studies (p. 490). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 642: Sacred Language, Scripture, and Culture.** 3 credits.
Explores how sacred languages and scriptures develop in major global religious traditions: study of grammar, syntax, and morphology of sacred languages; issues of inspiration, authority and canon. Also examines cultural dimensions of sacred language. Notes: May be repeated once when languages are different. Offered by Religious Studies. May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 644: Islamic Texts and Contexts.** 3 credits.
Introduces foundational Islamic texts; scholarly traditions of commentary, criticism and analysis on these texts; and application and significance of these texts in contemporary Islamic discourses. Offered by Religious Studies. May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 645: Muslim Comparative Theologies: Sunni-Shi`i Religious Thought.** 3 credits.
Compares and analyzes Sunni and Shi`ite theologies, with particular attention to the historical development of Muslim creed in the context of social and political conditions, and the essential differences between the Sunni and Shi`ite schools of thought. Offered by Religious Studies. May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 646: Islam and Human Rights.** 3 credits.
Compares the conception of human rights in international human rights documents and accords with conceptions of human rights in classical Islamic theological, legal, and ethical texts. Examines various relevant issues, including but not limited to religious and gender discrimination, slavery, freedom of religion and belief and apostasy, and questions of punishment. Offered by Religious Studies. May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**RELI 660: Islamic Biomedical Ethics.** 3 credits.
Examination of the foundations of religious ethics and ethical principles developed by Muslims to solve bioethical problems. Relates ethical principles to the moral experience of contemporary Muslims, and explores the role of human experience and intuitive reasoning in deriving ethical decisions. Offered by Religious Studies. May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**Russian (RUSS)**

**100 Level Courses**

**RUSS 101: Elementary Russian I.** 3 credits.
For students with no knowledge of Russian. Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Lab work required. Notes: Students may not receive credit for RUSS 101 and RUSS 110. Offered by Modern & Classical Languages. Limited to three attempts. Equivalent to RUSS 110.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**RUSS 102: Elementary Russian II.** 3 credits.
Continuation of RUSS 101. Notes: Students may not receive credit for RUSS 102 and RUSS 110. Offered by Modern & Classical Languages. Limited to three attempts. Equivalent to RUSS 110.
Recommended Prerequisite: RUSS 101 or permission of department.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 110: Elementary Russian. 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Notes: Students may not receive credit for RUSS 110 and RUSS 101, 102. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to RUSS 101, RUSS 102.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

RUSS 201: Intermediate Russian I. 3 credits.
Further development of skills in listening, speaking, reading, and writing. Notes: RUSS 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: RUSS 102, RUSS 110, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 202: Intermediate Russian II. 3 credits.
Application of language skills to reading, composition, and discussion. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: RUSS 201, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

RUSS 302: Russian Conversation and Composition. 3 credits.
Develops in students ability to express themselves orally on topics of current interest and everyday situations. Provides practice in more difficult forms of written expression. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: RUSS 202, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 303: Russian Advanced Conversation. 3 credits.
Development of oral proficiency. Includes current colloquial expressions. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: RUSS 202, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 310: Readings in Russian Literature. 3 credits.
Readings of Russian literary works in original language with lectures, discussions, and exam in Russian. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: RUSS 202, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 311: Contemporary Russian Short Fiction. 3 credits.
Reading and discussion of recent short stories by best-known Russian writers of today. Notes: Readings in original language. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: RUSS 202, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 325: Major Russian Writers. 3 credits.
Study of works of major Russian writers in translation. Writers to be studied vary. Notes: May be repeated once for credit when course content is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 9 credits.

Mason Core: Literature (p. 142)

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: ENGL 101/ENGH 101 or equivalent or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 326: A Survey of Russian Literature. 3 credits.
Surveys Russian literature from its beginning to 1880. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Literature (p. 142)

Recommended Prerequisite: Completion of 60 hours or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 327: A Survey of Russian Literature. 3 credits.
Surveys Russian literature of late 19th and 20th centuries. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Literature (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 353: Russian Civilization. 3 credits.
Civilization and culture of Russia and former Soviet Union. Includes films, slides, and music in addition to readings and lectures. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Specialized Designation: Non-Western Culture

Recommended Prerequisite: 60 credits and completion or concurrent enrollment in all other required Mason Core courses.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 354: Contemporary Post-Soviet Life. 3 credits.
Social life, art, economics, education, view of life, and personal aspirations of Russian citizen today. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Specialized Designation: Non-Western Culture

Recommended Prerequisite: 54 hours or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 380: Advanced Russian I. 3 credits.
Comprehensive study of the more difficult characteristics of contemporary standard Russian in areas of grammar, style, and vocabulary usage. Emphasizes developing fluency in oral and written expression. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: RUSS 202 or equivalent, appropriate placement score, or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 381: Advanced Russian II. 3 credits.
Comprehensive study of the more difficult characteristics of contemporary standard Russian in areas of grammar, style, and vocabulary usage. Emphasizes developing fluency in oral and written expression. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: RUSS 202 or equivalent, appropriate placement score, or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 401: Readings in the Social Sciences. 3 credits.
Reading, translation, and discussion of Russian materials in fields of history, politics, geography, and sociology. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 407: Russian Drama and Theater. 3 credits.
Development of Russian theater including directing techniques in Moscow Art Theater. Reading and discussion of major Russian plays of 19th and 20th centuries. Notes: Course work in English; knowledge of Russian not required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: 60 hours or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 410: Russian Poetry. 3 credits.
Historical development of Russian poetry and representative works of major poets. Notes: Reading in Russian; course work in English and Russian. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 470: Topics in (Post) Soviet Film. 3 credits.
Russian, Soviet, and post-Soviet films selected by type, period, or director with emphasis varying from year to year. Required viewings, student discussion, and written critiques. Notes: May be repeated once with permission of department or film studies adviser. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 480: Fourth-Year Russian. 3 credits.
Advanced work in major grammatical and lexical topics of Russian. Application of theoretical principles in guided written and oral exercises. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.
Recommended Prerequisite: RUSS 380 and 381 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 491: Fourth-Year Russian. 3 credits. Advanced work in major grammatical and lexical topics of Russian. Application of theoretical principles in guided written and oral exercises. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: RUSS 380, 381, or equivalent.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 490: Independent Study. 1-3 credits. Research and analysis of selected problem in language, literature, or culture in consultation with member of Russian studies faculty. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: Russian studies major with 84 hours and Permission of Instructor.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 380 and 381 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

RUSS 491: Independent Study. 1-3 credits. Research and analysis of selected problem in language, literature, or culture in consultation with member of Russian studies faculty. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: Russian studies major with 84 hours and Permission of Instructor.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

School Psychology (SPSY)

600 Level Courses

SPSY 617: Child Psychopathology. 3 credits. Surveys major types of psychopathological disturbances of infancy and childhood. Provides an overview of atypical development in children and adolescents focusing on cognitive, emotional, social, and adaptive domains. Examines etiologies, symptoms, effects, and treatments of major psychological disorders. Introduces students to major classification systems that are commonly applied to diagnose psychological disorders in children. Offered by Graduate School of Education (p. 162). May not be repeated for credit. Equivalent to PSYC 617.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPSY 619: Consultation and Applied Behavioral Analysis. 3 credits. Examines the theoretical framework and elements of applied behavioral analysis, foundational principles of behavioral approaches to learning, as well as the framework of behavioral consultation. Provides acquisition and practical application of behavioral consultation skills through the process of the consultant-consultee relationship. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPSY 671: Role and Function of the School Psychologist. 3 credits. Considers roles and functions of school psychologist in the educational environment, including all National Association of School Psychologists (NASP) practice standards. Includes certification process, relevant school law, ethical standards and practice, current and historical issues, and trends. Notes: Open only to school psychology MA students, or by permission of instructor. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Corequisite: SPSY 672

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPSY 672: Schools as Systems Practicum in School Psychology. 3 credits. Provides contextual understanding of how districts, schools and classrooms operate; job responsibilities of the school psychologist; role of colleagues in the schools; special education process; various team structures and functioning; MTSS implementation; systems-level initiatives; organizational change; program evaluation; and use of data for school/student improvement. Requires semester-long practicum in the schools shadowing a school psychologist, and weekly class meetings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Corequisite: SPSY 671

Registration Restrictions:
Enrollment limited to students with a class of Graduate.

Enrollment is limited to students with a major in Psychology.

Enrollment limited to students in the Education Human Development college.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPSY 692: Counseling in the Schools. 3 credits.
Examines theories, techniques, and counseling issues relevant to children and adolescents. Develops basic and advanced counseling skills, and provides experience receiving verbal and written feedback on simulated counseling sessions. Explores range of community agencies providing mental health services. Counseling practice provides an emphasis on process and culturally competent counseling strategies. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDCD 603B.
B Requires minimum grade of B.

Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.
Enrollment limited to students in the Education Human Development college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

SPSY 709: Cognitive Assessment. 4 credits.
Introduces school psychology graduate students to issues and methods of cognitive/intellectual assessment. Provides experience in administration, scoring, and interpretation of major infant, child, and adult tests of cognitive ability, with emphasis on individual tests. Examines the development of IQ tests, theories of intelligence, and current trends and developments in intellectual assessment. Notes: Open only to school psychology MA students. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.
Enrollment limited to students in the Education Human Development college.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPSY 710: Social, Emotional, and Behavioral Assessment. 4 credits.
Examines major instruments used in clinical assessment of social, emotional and behavioral functioning of children and adolescents. Provides practice in administration and scoring of major techniques for evaluation of social emotional behavioral adjustment. Explores nature, problems, and predictive value, and principles of interpretation of these procedures. Notes: Open only to school psychology MA students. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: SPSY 709B or PSYC 810B.
B Requires minimum grade of B.

Enrollment is limited to students with a major in Psychology.
Enrollment is limited to Graduate level students.
Enrollment limited to students in the Education Human Development college.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

SPSY 751: Advanced Assessment Practicum in School Psychology I. 3 credits.
Provides practical, applied, supervised experience conducting comprehensive psychoeducational evaluations with children and
adolescents to develop assessment and diagnostic skills. Requires interviewing, test selection and administration, scoring, report writing, and feedback sessions with clients. Focuses on integration of data and recommendation development. Requires practicum in training clinic, and individual and group supervision. Notes: Open only to School Psychology MA students. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: SPSY 709B, 710B, 722B and 750B.
B- Requires minimum grade of B-.

Enrollment is limited to students with a major in Psychology.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Education Human Development college.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

SPSY 752: Advanced Assessment Practicum in School Psychology II. 3 credits.
Provides practical, applied, supervised experience conducting comprehensive psychoeducational evaluations with children and adolescents to refine assessment and diagnostic skills. Requires interviewing, test selection and administration, scoring, report writing, and feedback sessions with clients. Focuses on integration of data and recommendation development. Requires practicum in training clinic, and individual and group supervision. Notes: Open only to School Psychology MA students. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisites: SPSY 709B, 710B, 722B, 750B and 751B.
B- Requires minimum grade of B-.

Enrollment is limited to students with a major in Psychology.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Education Human Development college.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

SPSY 753: Multiculturalism in Schools. 3 credits.
Introduces school/educational/developmental psychology graduate students to issues and recent research on multicultural competence and multiculturalism in schools. Develops self-awareness around issues of cultural diversity and expands knowledge base in the area of diversity. Provides an opportunity to read research in the field on RTI, Consultation, Intervention, and Assessment that has a multicultural perspective or component. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPSY 773: Prevention, Intervention, and Consultation in Schools. 3 credits.
Examines psychological theory and practice of prevention, intervention, and consultation in the school environment. Provides an overview of consultation approaches, prevention models that promote academic and social success, strategies and methods for targeted intervention, and crisis response. Focuses on current models of direct/indirect service-delivery in a MTSS/RtI model to support academic achievement and social emotional adjustment of all children. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPSY 790: School Psychology Internship. 3 credits.
Requires supervised field experience and semi-monthly seminar over course of one school year as students work as full-time staff members in schools. Requires professional portfolio demonstrating integration of skills/knowledge across all professional practice domains. Emphasizes evidence based interventions, direct and indirect services, and measurement of student outcomes. NOTE: Students must register for 2 consecutive semesters for a total of 6 credits. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Completion of required courses in school psychology and permission of program coordinator.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Internship

Grading:
This course is graded on the Graduate Special scale. (p. 84)

SPSY 792: Prevention Intervention Consultation Practicum. 3 credits.
Requires school-based practicum under the supervision of school psychologist, and weekly seminar. Focuses on teacher consultation and implementation of prevention/intervention services. Application of a variety of concrete methods/strategies designed to support successful academic achievement and positive social-emotional adjustment for children in schools. Focuses on delivery of evidence-based direct and consultative psychological services to individuals and groups within the school community. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Required Prerequisite: SPSY 773B.
B- Requires minimum grade of B-.
Enrollment is limited to students with a major in Psychology.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Education Human Development college.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### Social Work (SOCW)

#### 200 Level Courses

**SOCW 200: Introduction to Social Work.** 3 credits.
Introduces historical roots of social work profession and social welfare. Person-in-environment perspective discussed as framework for social work knowledge, values, and skills. Initial course in social work curriculum introduces social work profession, professional values, ethics, fields of practice, and settings in which social workers are employed. Highlights profession's commitment to diverse and at-risk populations and social and economic justice. Presentations by social work professionals in different fields of practice supplement classroom lecture, discussion, and small-group exercises. Notes: Open to all majors. Offered by Social Work (p. 279). Limited to three attempts.

**Specialized Designation:** Discovery of Scholarship.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

#### 300 Level Courses

**SOCW 311: Building Professional Social Work Skills.** 3 credits.
Apply basic social work concepts and the planned change process to beginning-level professional generalist practice. Develop a professional sense of self, and how to work in a social work setting. Practice course material in an agency setting through a 40 hour service learning experience. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** SOCW 200.

**Registration Restrictions:**
Enrollment is limited to students with a major in Social Work.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 312: Knowledge Building for Helping Professionals.** 3 credits.
Integrates critical thinking skills with an understanding of how knowledge is created and associated with the scientific paradigms that are used to study and understand individuals in the context of the environment. Examines ways of knowing used in the social sciences and social work by being actively engaged in exercises and activities. Offered by Social Work (p. 279). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry.

**Recommended Prerequisite:** SOCW 200.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 357: Methods of Social Work Intervention I.** 3 credits.
Social work practice from systems perspective. Particular emphasis on problem-solving activities with microsystems. Analyzes common core of knowledge, values, and skills essential to social work practice to gain insight into social work functions and role of social worker as change agent. Note: SOCW 361 must be taken in the same semester as SOCW 357. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** SOCW 200, SOCI 101, PSYC 100, or permission of the instructor.

**Registration Restrictions:**
Required Prerequisite: SOCW 361.<sup>C</sup>

* May be taken concurrently.

* Requires minimum grade of C.

Enrollment is limited to students with a major in Social Work.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 358: Methods of Social Work Intervention II.** 3 credits.
Continues generic problem-solving model, focusing on group and macro intervention systems, settings, and skills. Emphasizes working with both treatment and task groups. Group processes, such as goal formulation, contract setting, composition, and termination necessary for effective worker intervention, are part of knowledge base. Note: SOCW 362 must be taken in the same semester as SOCW 358. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** SOCW 200, 357, and 361

**Registration Restrictions:**
Required Prerequisite: SOCW 362.<sup>C</sup>

* May be taken concurrently.

* Requires minimum grade of C.

Enrollment is limited to students with a major in Social Work.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 361: Methods of Social Work Intervention I: Laboratory.** 3 credits.
Develop proficiency in social work and communication skills. Increase competency in practice knowledge and behaviors through experiential learning in the classroom laboratory. Apply knowledge of biological, psychological, social, spiritual, and cultural influences to those who need and those who give help. Examine personal behavioral and learning patterns, values, ethics, and attitudes to increase ability to understand and help clients. Note: SOCW 357 must be taken in the same semester as SOCW 361. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** SOCW 200.

**Registration Restrictions:**
Required Prerequisite: SOCW 357.<sup>C</sup>

* May be taken concurrently.

* Requires minimum grade of C.
Enrollment is limited to students with a major in Social Work.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 362: Methods of Social Work Intervention II: Laboratory.** 3 credits.
Provides students the opportunity to integrate theory, research, and practice in the area of group work and family interventions. Classroom simulation of group skills and how to work with families will occur. Note: SOCW 358 must be taken in the same semester as SOCW 362. Offered by Social Work (p. 279). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisites: SOCW 200C, 357C, 361C and 358C.
May be taken concurrently.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Social Work.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 375: Human Behavior and the Family Life Course.** 3 credits.
This course utilizes an integrative ecological approach to understanding individual human behavior in the context of the family and the transitions over the life course. The family life course perspective recognizes the interdependent nature of life course experiences and highlights the impact of life events, transitions and change, timing, and historical and social context. Offered by Social Work (p. 279). Limited to three attempts.

**Mason Core:** Synthesis (p. 142)

**Recommended Prerequisite:** SOCW 200; BIOL 103; PSYC 100; SOCI 101.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 380: Changing Social Policies and Systems.** 3 credits.
Equips students with basic macro social work practice skills necessary to create change that will result in a more socially and economically just society. Examines the historical development, central concepts, and institutional nature of current social policies and systems and how to create change at various levels. Applies practice skills to developing strategies for change. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** SOCW 200.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Provides a basic introduction to quantitative and qualitative analytic methods for the social worker. The course will emphasize a conceptual understanding of analyses so that students will be able to engage in social debates with the ability to both support their assertions with rigorously generated analyses, as well as question the generalizability and utility of others’ analyses. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** SOCW 200.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**SOCW 400: Legal and Ethical Issues in Human Services.** 3 credits.
Overview of ethical and legal issues related to human services professions. Topics include responsibility, competence, duty to warn, confidentiality, professional relationships, and research. Emphasizes models of ethical decision making and critical thinking. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** 45 credits or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 410: Alcohol and Substance Abuse: Policies and Programs.** 3 credits.
Primary issues related to alcoholism and drug abuse including key concepts, theories, policies, and research regarding use and abuse of alcohol and other drugs. Emphasizes impact of policies and programs on well-being of ethnic minority and disadvantaged service populations. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** 45 credits or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 415: Child and Family Welfare.** 3 credits.
Emphasizes viewing human development and child and family welfare services critically, holistically, and contextually. Integrates ecological systems, human rights, and empowerment perspectives for understanding delivery systems and persons in relation to their environment across levels from individual to global. Provides overview of existing child welfare system with focus on current issues, challenges, and at-risk populations. Offered by Social Work (p. 279). Limited to three attempts.

**Recommended Prerequisite:** 45 credits or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCW 435: Introduction to Gerontology.** 3 credits.
Surveys issues related to working with older adults, their families, and care providers. Studies biological, psychological, and sociocultural aspects of aging, and unique problems with service delivery to older persons. Examines forces that impinge on an older person, and explores critical issues related to extended life span, family changes, institutionalization, and role of older persons in society. Offered by Social Work (p. 279). Limited to three attempts.
Recommended Prerequisite: 45 credits or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCW 445: Social Determinants of Health. 3 credits.
Examine the social determinants of health and the application of this framework to social work and public health policy and practice interventions. Explore the many social justice factors that affect health and consider which community systems and social change approaches may decrease or eliminate health inequities. Offered by Social Work (p. 279). Limited to three attempts. Equivalent to GCH 445.

Recommended Prerequisite: 45 credits or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCW 471: Research in Social Work. 3 credits.
Principles and theory underlying scientific inquiry. Emphasizes use of research in social work practice, steps in conducting research, and research efforts in developing and evaluating social work knowledge and skills. Notes: Must be completed with minimum grade of C. Offered by Social Work (p. 279). Limited to three attempts.

Specialized Designation: Scholarly Inquiry, Writing Intensive in Major

Recommended Prerequisite: SOCW 200; SOCW 312; ENGH 302.

Recommended Corequisite: SOCW 495; Choose one of the following: SOCW 390, STAT 250, SOCI 313, or PSYC 300.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Uses generalist social work practice concepts with large systems and provides students with a hands-on opportunity to apply concepts and principles of intervention with large systems. Students will work with organizations and communities on a local, national, or global level to promote social action and social change. The course will also focus on evaluating interventions addressing the social justice needs of diverse, at-risk, and oppressed populations. Offered by Social Work (p. 279). Limited to three attempts.

Mason Core: Capstone (p. 142)

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: SOCW 495 and SOCW 471.

Registration Restrictions:
Enrollment is limited to students with a major in Social Work. Students cannot enroll who have a minor in Social Work.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCW 475: Selected Topics in Social Work Policy. 1-3 credits.
In-depth study of special areas of social work of interest to students, faculty, and social work community. Notes: May be repeated for credit when topic is different. Offered by Social Work (p. 279). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: 45 credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCW 483: Selected Topics in Social Work Intervention. 1-3 credits.
Opportunity to examine personal use of different approaches to social work intervention currently employed in practice settings. Students use technical skills with clients that these approaches require. Notes: May be repeated for credit when topic is different. Offered by Social Work (p. 279). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: 45 credits or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCW 495: Field Practicum and Seminar I. 5 credits.
Under supervisory instruction provided by field agencies and faculty liaisons, students are involved two days per week in a social work field practicum, which provides entry level generalist social work training. Both the field practicum and the associated seminar provide learning activities designed to facilitate the demonstration of competencies identified by the Council on Social Work Education. Requires faculty-agency visits. Offered by Social Work (p. 279). Limited to three attempts.

Recommended Prerequisite: SOCW 200, 311, 312, 357, 358, 361, 362, 375, and 380 with a minimum grade of C and recommendation of faculty.

Registration Restrictions:
Enrollment is limited to students with a major in Social Work.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCW 496: Field Practicum and Seminar II. 5 credits.
Continuation of supervised instruction begun in SOCW 495. Students continue to spend two days per week in a social work field practicum, which provides entry level generalist social work training. Both the field practicum and the associated seminar provide learning activities designed to facilitate the demonstration of competencies identified by the Council on Social Work Education. Requires faculty-agency visits. Offered by Social Work (p. 279). Limited to three attempts.

Recommended Prerequisite: SOCW 495 with a minimum grade of C.

Registration Restrictions:
Enrollment is limited to students with a major in Social Work.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
Investigates research problem in field of social work. Offered by Social Work (p. 279). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: 60 credits and a research proposal approved by instructor before enrollment.

Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

600 Level Courses
Introduces issues in social welfare by highlighting the social work profession's commitment to serve diverse and at-risk populations, as well as promote social, economic, and environmental justice. Provides students with opportunities to examine how historical, political, economic, and cultural contexts influence the structure and functions of oppression and the social welfare delivery system. Students gain knowledge and develop critical analysis skills for examining systems of privileges and oppression based on race and ethnicity, gender, sexual orientation, social and economic status, age, ability status, religion, and nativity status. Emphasis is also placed on professional values and ethics. Offered by Social Work (p. 279). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 623: Human Behavior and Social Systems I. 3 credits.
Ecological approach to behavior of individuals, families, groups, organizations, and communities. Integrates and applies theories from psychology, sociology, biology, and anthropology to study of infants, children, and adolescents. Emphasizes human diversity. Offered by Social Work (p. 279). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 624: Human Behavior and Social Systems II. 3 credits.
Continues study of human behavior and diversity by exploring application of development theory and ecological principles to those in young adulthood, middle adulthood, and older adulthood. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: SOCW 623.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 630: Forensic Social Work Practice. 3 credits.
Explores the social work role in legal processes relating to such issues as family violence, child custody, behavioral health, disabilities, aging, and juvenile/criminal justice. Apply skills in forensic interviewing, risk assessment, expert testimony, mitigation, mediation, treatment, victim advocacy, and multidisciplinary collaboration. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: SOCW 624, 652, 658, and 673.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 640: Advanced Clinical Practice. 3 credits.
Prepares students at the advanced level to apply diagnostic, assessment, prevention, treatment, and intervention skills with individuals, families, and groups in clinical mental health and health settings. Trains students in differential diagnosis and assessment using the Revised Diagnostic and Statistical Manual (DSM IV-TR). Currently accepted treatment interventions within the context of contemporary social work theory are also presented. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: All foundation year coursework: SOCW 623, 624, 651, 652, 657, 658, 670, 671, 672, 673, and 680.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 645:** Community-Centered Clinical Practice. 3 credits.
Students use an ecosystems framework for assessment, risk-reduction, prevention, and intervention with communities in a local, national, or international context. Possible areas of exploration include violence prevention and intervention, suicide prevention and intervention, emergency response efforts, and behavioral health or wellness interventions at the community level. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** SOCW 624, 652, 658, and 673.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 651:** Social Policies, Programs, and Services. 3 credits.
History of American social welfare policy and social work profession. Explores political, economic, social, cultural, and ideological influences on policy making with emphasis on consequences for populations at risk. Introduces historical policy analysis. Offered by Social Work (p. 279). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 652:** Influencing Social Policy. 3 credits.
Introduces students to the knowledge, skills, and values needed to influence policy outcomes. Explores the role of social workers in electoral politics and policy advocacy. Students gain skills in legislative research, coalition building, testifying, constituent organizing, and lobbying, while developing strategies for promoting social justice through policy change. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** SOCW 651.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 653:** Immigration Policy. 3 credits.
Prepares students for advocacy on behalf of immigrants from a human rights and social justice perspective. Explores policies, economic forces and historical precedence abetting global migration. Abets development of an in-depth knowledge of national and local policies as they pertain to immigrants, and how issues relate to social work advocacy. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** Completion of all first-year graduate coursework or advanced standing.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 654:** Social Policy for Children and Youth. 3 credits.
Examines social policies, programs, and services on behalf of children and youth with implications for social work; including child welfare, child and adolescent health and mental health, juvenile justice, and school social work. Explores how societal norms regarding family and definitions of children’s well-being influenced these policies over time. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** Completion of MSW foundation coursework.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 655:** *Aging Programs and Policies.* 3 credits.
Analyzes the evidence-based benefits and challenges of social welfare and health care policy at the local, state, and federal levels on programs and services for older persons and their families. Fosters an understanding of the context of administrative structures, and legislative context of social policy and aging with attention to diversity and ethics. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** SOCW 652 or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 657:** *Direct Social Work Practice I.* 3 credits.
Introduces role of social workers as change agents and the core knowledge, values, and skills that guide social work practice with individuals, families, small groups, organizations, and communities. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Corequisite:** SOCW 672.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 658:** *Direct Social Work Practice II.* 3 credits.
Continuation of social work theory and practice with individuals, families, groups, organizations, and communities. Emphasizes intervention, evaluation, follow-up, and termination, with attention to incorporating social work knowledge, values, and skills. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** SOCW 657.

**Recommended Corequisite:** SOCW 673.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 663:** *Global Human Rights Policy.* 3 credits.
Examines meaning and benefits of transforming social work policy practice to a global perspective and focus on a human rights-based rather than a needs-based approach. Demonstrates how human rights can serve as conceptual framework for policy practice to effect social change promoting human development and social and economic justice across levels, from the micro through macro and local through global. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** Completion of MSW Foundation curriculum or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 664:** *Creative Arts in Social Work Practice.* 3 credits.
Explores the principles and techniques of creative arts for social work practice, examining assessment, intervention and evaluation strategies that supplement traditional social work treatment. Course covers theory, research, and interventions applied to individuals, families, groups, and communities. Notes: Previous training in the visual arts and/or artistic ability is not required. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** Completion of MSW Generalist curriculum or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 670: Social Work Program Planning, Communications, and Technology. 3 credits.
Studies various forms of written communication pertinent to social work practice. Examines impact of audience, status, culture, and purpose on effective professional writing. Offered by Social Work (p. 279). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 671: Research Methods for Social Workers. 3 credits.
Examines role of scientific inquiry in social work. Emphasizes construction and use of measurement instruments, data collection, analysis, and interpretation, and application of computer technologies relevant to social work practice. Offered by Social Work (p. 279). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 672: Generalist Field Practicum and Seminar I. 3 credits.
Provides supervised social work learning experience in human service agencies. Students complete 16 hours per week in field practicum, and attend bimonthly seminar in which they share learning and integrate theory with practice. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Corequisite: SOCW 657.

Recommended Prerequisite: All foundation year coursework (SOCW 623, 624, 651, 652, 657, 658, 670, 671, 672, and 673).

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 673: Psychopathology. 3 credits.
Overview of adult and child psychopathology presented within the contexts of the lives of people experiencing mental disorders and the social contexts that can have a bearing on symptom maintenance. Learn to formulate competency-based assessments and DSM IV-TR-based differential diagnoses. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: All foundation year coursework (SOCW 623, 624, 651, 652, 657, 658, 670, 671, 672, and 673).

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 675: Selected Topics in Clinical Practice. 3 credits.
In-depth study of special topics related to clinical social work practice at the individual, family, small group, or community level. Notes: May be repeated for credit when topic is different. Offered by Social Work (p. 279). May be repeated within the term for a maximum 12 credits.
Recommended Prerequisite: 30 graduate credits or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 676: Selected Topics in Social Work and Social Change. 3 credits.
Critical examination of special topics related to understanding and improving community and societal conditions through policy practice, program development, and social action. Notes: May be repeated for credit when topic is different. Offered by Social Work (p. 279). May be repeated within the term for a maximum 12 credits.

Recommended Prerequisite: 30 graduate hours or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 677: Family Therapy. 3 credits.
Examines research and theory relevant for assessment and intervention with families. Students will learn to conduct a family assessment, taking cultural diversity, non-traditional family structures including single-parent and GLBTQ families, and socioeconomic factors into account. Students will develop skills in implementing an intervention based on the family’s strengths and challenges. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: Completion of MSW foundation coursework.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 678: Trauma and Recovery. 3 credits.
Explores complex traumatic stress disorders, the process of recovery, and the etiology of healing in contemporary North American Culture. Diagnostic criteria, assessment strategies and evidence-based treatment options for complex traumatic stress disorders across diverse populations including sexual trauma, war, early childhood trauma and natural disasters will be addressed. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: Completion of MSW foundation coursework.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 679: Military Social Work. 3 credits.
Examines research and theory relevant for social work practice with service members, veterans, and their families. The course addresses the military as a workplace culture, evidence-based approaches for post-traumatic stress and co-morbid conditions, clinical practice with military families, preventive care and the service delivery system in military and civilian settings. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: Completion of MSW foundation coursework.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 682: Substance Abuse Interventions. 3 credits.
Develops knowledge and skills for direct practice in the field of addictions. The course covers the knowledge base regarding evidence-based interventions at all stages in the process of intervention with individuals, families, and groups that promote recovery from addiction to drug and alcohol abuse. Offered by Social Work (p. 279). May not be repeated for credit.
Recommended Prerequisite: Completion of MSW foundation coursework.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 685: Organizational Leadership for Social Workers. 3 credits.
Examines functions and structure of human service organizations in context of service delivery. Development of theoretical knowledge, professional ethics, and skills in administration, leadership, management, organization, and supervision. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: SOCW 624, 652, 658, 673.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 687: Empowering Communities for Change. 3 credits.
Explores social work interventions at community level, including organization, planning, and development. Strategies for mobilizing community members, using community organizations, formulating coalitions, engaging in participatory planning, and social and economic development. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: SOCW 624, 652, 658, and 673.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 688: Program Evaluation for Social Workers. 3 credits.
Explores social work intervention research, needs assessment, formative and summative program evaluation, and cost analyses. Discusses applications of systematic inquiry at the practice, organizational, and policy levels. Addresses ethical, pragmatic, and political considerations; qualitative approaches; quality performance; evidence from empirical research; and evaluation design. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: SOCW 624, 652, 658, 671, 673. Open to degree seeking students only.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCW 689: Clinical Practice with Older Adults. 3 credits.
Examines age-associated changes and challenges faced by older adults. Focus is strengthening assessment and intervention skills with older adults, their family members and caregivers within the community and long-term care facilities, determining the best standardized instruments to use, and developing effective questions for assessment. Attention is given to the resilience of elders, ethical issues and diversity. Offered by Social Work (p. 279). May not be repeated for credit.

Recommended Prerequisite: SOCW 674 or permission of the instructor.
**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 692: Specialist Clinical Field Practicum and Seminar I.** 3 credits.
Students participate in a supervised clinical social work field practicum for 20 hours per week. The clinical field seminar accompanies the clinical concentration year practicum. The seminar is designed to assist the student in critically analyzing their field experiences in the application of mental health assessment, risk reduction and interventions working with individuals, families, groups, and communities. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** SOCW 623, 624, 651, 652, 657, 658, 670, 671, 672, and 673.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 693: Specialist Clinical Field Practicum and Seminar II.** 3 credits.
Students participate in a supervised clinical social work field practicum for 20 hours per week. The clinical field seminar accompanies the clinical concentration year practicum. The seminar is designed to assist the student in critically analyzing their field experiences in the application of mental health assessment, risk reduction and interventions working with individuals, families, groups, and communities. Notes: This is a continuation of SOCW 692 taken in the Fall semester. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** SOCW 623, 624, 630, 651, 652, 657, 658, 670, 671, 672, 673, 674, 688, and 692.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 694: Specialist Social Change Field Practicum and Seminar I.** 3 credits.
Students participate in a supervised clinical social work field practicum for 20 hours per week. The clinical field seminar accompanies the concentration year practicum. The seminar is designed to assist students in processing their field experiences and analyzing their successes and challenges. Students are expected to apply social work knowledge, values, and skills from across the curriculum. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** SOCW 623, 624, 651, 652, 657, 658, 670, 671, 672, and 673.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCW 695: Specialist Social Change Field Practicum and Seminar II.** 3 credits.
Students continue to work in a supervised social work field practicum for 20 hours per week. At the end of this semester students will have completed 300 hours of field work to meet the total number of 600 hours required for the concentration year practicum. The field seminar accompanies the concentration year practicum. The seminar is designed to assist students in processing their field experiences and analyzing their successes and challenges. Students are expected to apply social work knowledge, values, and skills from across the curriculum. Notes: Continuation of SOCW 693 from the Fall semester. Offered by Social Work (p. 279). May not be repeated for credit.

**Recommended Prerequisite:** SOCW 623, 624, 651, 652, 657, 658, 670, 671, 672, 673, 684, 685, 688, and 694.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
Investigates research problem in field of social work. Offered by Social Work (p. 279). May be repeated within the term for a maximum 4 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Social Work.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Sociology (SOCI)

100 Level Courses

SOCI 101: Introductory Sociology. 3 credits.
Introduction to basic sociological concepts. Examines aspects of human behavior in cultural framework, including individual and group interaction, social mobility and stratification, status and class, race and gender relations, urbanism, crime and criminology, and social change and reform. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 120: Globalization and Society. 3 credits.
Examines and analyzes important global issues and processes. Considers historical development of globalization and implications for different societies and cultures. Investigates perceptions of global processes by different cultures and nations, and efforts of international institutions to address social, political, economic, and cultural changes in global society. Notes: Students may not receive credit for both SOCI 120 and GLOA 101. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

SOCI 208: Introduction to Race and Ethnicity. 3 credits.
Introduces students to individuals and ideas which have shaped and influenced racial and ethnic interactions and relations in the past and present. Attention will focus on historical meanings and sentiments attached to race and ethnicity as concepts, ideas, and images, and the ways these concepts and images have co-joined to allocate differential social, political, economic, and educational rewards to individuals and groups designated as racial groups, ethnic groups, or both. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

SOCI 301: Criminology. 3 credits.
Focuses on causes and meaning of crime, with emphasis on adults. Patterns of criminal behavior, including property crimes, violent crimes, organized crime, white-collar crime, and victimless crime. Critical assessment of criminal justice system as a response to crime. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 302: Sociology of Delinquency. 3 credits.
Examines social factors involved in development of delinquency, including family, political economy, schooling, community environment and culture. Examines various theories of delinquency; rates of delinquency in relation to age, race, gender and social class; and legal system that addresses causes, consequences, and policies of punishment and rehabilitation. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 303: Methods and Logic of Inquiry. 3 credits.
Actively engages students in original inquiry meaningful to themselves and their communities. Demonstrates the reciprocal relationship between theory and empirical research. Explores the complementarity of interpretive and explanatory logics, employing basic sociological methods. Guides students to formulate problems and design research, culminating in a public presentation of their proposals to the sociology faculty. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: SOCI 101C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
SOCI 304: *The Future of Work.* 3 credits.
Introduces the basic concepts of economic sociology. Explores how the world of work has changed due to globalization, deindustrialization, new technologies, and economic crisis. Focuses on providing students with a better understanding of how markets and corporations work, and about new economic approaches to create new, potentially less alienating work environments. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 307: *Social Movements and Political Protest.* 3 credits.
Explores processes for organizing resistance to current social and power arrangements, from terrorism to nonviolent civil resistance to create alternative institutions, policies, or leadership that promote human rights and social justice. Uses historical and contemporary case studies of local and global change to explore, how, why, and to what effect individuals have organized to protest the status quo and create social change. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

Explores how race and ethnicity have been shaped by policies and practices in Western and non-Western societies. Explores the evolution of racial and ethnic attitudes from a global and historical perspective. Examines how changing demographic racial patterns may affect definitions of race and ethnicity and the ways in which people individually and collectively act to create new futures. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 309: *Marriage, Families, and Intimate Life.* 3 credits.
Uses a sociological framework to analyze and understand the diverse forms of contemporary families—traditional marriages, cohabitation, domestic partnerships, single-parent families, stepfamilies, and gay and lesbian families. Explores topics such as changes in sexual mores, reflected in new dating practices; shifting parenting roles; effects of social class, race and ethnicity; and the outcomes of divorce for couples and children. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 310: *Sociology of Deviance.* 3 credits.
Analyzes macro- and microlevel deviance-producing processes, meaning and control of deviance, and major theoretical approaches to deviance. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 311: *Classical Sociological Theory.* 3 credits.
Explores sociological tradition through readings and discussions of ideas drawn from writings of selected sociological thinkers such as Comte, Marx, Weber, Durkheim, and others. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** 6 credits of upper level (300 or 400 level) sociology courses, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 312: *Qualitative Research Methods.* 3 credits.
Introduces ethnography, field work methods, interviewing, life histories, and other qualitative methods to generate data about cultures in which various groups and classes are immersed. Students learn by applying qualitative methods to term projects, developed under guidance of instructor. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** 9 credits of Sociology including SOCI 101 or SOCI 102 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 313: *Statistics for the Behavioral Sciences.* 4 credits.
Fundamentals of applied statistics as used in behavioral science to include descriptive statistics, inferential statistics, correlation regression, analysis of variance, factor analysis, nonparametric statistics, and practical experience with calculators in applying statistical analysis to actual problems of the behavioral sciences. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Mason Core:** Quantitative Reasoning (p. 142)

**Recommended Prerequisite:** SOCI 101 or permission of instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 314: *Sociology of Culture.* 3 credits.
Examines how culture, encompassing high art or participatory culture, expressive agency or traditional constraint, is produced and reproduced in everyday social practices and across a wide range of social institutions. Explores the role of culture in public life and political discourse. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 315: *Contemporary Gender Relations.* 3 credits.
Considers the ways in which gender structures social life on both the micro level of individual experience and the macro level of social structure. Addresses contradiction between legal equality between the
sexes and persistent workplace discrimination and sexual violence; how normative ideals of femininity and masculinity affect our bodies, identities and intimate relationships; how these ideals are circulated through the media, reproduced in social institutions, and articulated in different national, cultural and religious contexts. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 320: Globalization and Social Change. 3 credits.
While focusing on nature and process of change in human society, considers social impact of political, economic, and environmental change and how lives are shaped by complexities of global social forces. Examines specific global issues such as conflict and security; economic disparity; ecological deterioration; populations and migration; legitimization of commerce; diffusion of innovations; and impact of class, status, and power in modern societies. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Global Understanding, Encore: Sustainability (p. 142)

Specialized Designation: Green Leaf Focused Course

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 321: Sociology of Post-Socialism. 3 credits.
Explores the end of socialism, and how the former Soviet Union and Eastern Europe, as well as the rest of the world, transformed since 1989. Examines art, music, criminality, oligarchs, workers, gender, commodification, nationalism, violence, the self, religion, public health, and the environment during socialism and afterwards. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 326: Conflict, Violence, and Peace. 3 credits.
Explores the sociology of conflict, violence, and peace to examine these crucial issues from a scholarly viewpoint. Focuses on the causes and consequences of violence. Examines a wide variety of remedies from conventional deterrence and arms control strategies to alternative perspectives from nonviolent civil resistance to peacebuilding, international law, and restorative justice, as well as conflict transformation and resolution strategies. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 330: US Immigrants and Immigration. 3 credits.
Explores theoretical, empirical, and policy-related issues pertaining to immigration. Examines case studies of immigrant communities and their adaptation patterns, paying particular attention to immigrants from Latin America, Asia, the Caribbean, and the Middle East. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 332: The Urban World. 3 credits.
Examines cities and the people who live in them in the United States and around the world. Includes topics such as: social and economic development, inequality, political protests, urban democracy, and the environment. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 340: Power, Politics, and Society. 3 credits.
Analyzes how power is defined, attained and sustained in society. Students analyze political power as related to social realities such as democratic elections, class conflict, elite networks, power sharing, protest, and revolution. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 341: Sociology of Aging. 3 credits.
Examines aging from a sociological perspective. Topics include demographic trends and aging population in America, social construction of life stages and creation of “old age,” cultural labeling, and human resistance. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 352: Social Problems and Solutions. 3 credits.
Examines contemporary social problems and their solutions using sociological perspectives. Topics may include housing and homelessness, student debt, mass incarceration, hunger and food insecurity, environment and sustainability, human rights, wealth and global poverty, war and peace. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 355: Social Inequality. 3 credits.
Studies class structures and implications for individuals and groups in modern society. Explores issues of race and ethnicity, language and immigration status, sex and gender, social class, age, and sexual orientation. Examines critically the theory and research that explore the construction, experience, and meaning of such differences. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.
Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 360: Youth Culture and Society. 3 credits.
Introduces sociology of youth and youth culture. Investigates social, economic, and political realities of youth as a group and different groups of youth, including youth cultural production, formation of youth culture, and youth identities in variety of social settings. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 373: The Community. 3 credits.
Examines small to moderate-size communities ranging through village, rural community, small town, and city subcommunity. Latter category includes city localities, ethnic villages, and suburban communities. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 377: Art and Society. 3 credits.
Introduces the many ways in which art reflects social tendencies, comments on social problems, and contributes to discussions about a wide range of social issues. Students attend theatrical performances and visit exhibition spaces on campus, and learn to analyze what they experience through both aesthetic and sociological approaches. Explores contemporary issues such as debates about artistic freedom and public morality, commercialization of art, and relationship between cultural and social hierarchies. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: 3 credits of ARTH.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 382: Education in Contemporary Society. 3 credits.
Examines classrooms and schools as social institutions that function as socializing agents for both stability and societal change. Emphasizes the influence of inequality on educational processes and outcomes and critically examines the social organization of the U.S. public school system. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 385: Religion and Society. 3 credits.
Studies places of religious consciousness in human action and institutional and organizational networks created to sustain religious beliefs. Emphasizes comparative and historical analysis of role religion has played in human society. Examines theories of nature of religious experience, religious symbolism, and basis of religious community. Explores changing demographics in relation to older traditional religious faiths and newer nontraditional faiths. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 388: Violence and Religion. 3 credits.
Explores the relationship between religion and violence, especially warfare, cross-culturally and historically from a sociological, transdisciplinary, and global politics perspective. Examines the interface between politics and morality and the interface between national and transnational governance institutions (nations states, the UN, etc.) and cultural and religious institutions, NGOs, and social movements. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 390: Sociology of Health, Illness, and Disability. 3 credits.
Examines social context of health, illness, and disability; relationships of health care professionals and patients; and structure and delivery of health care in different medical systems. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 391: Big Data, Technology, and Society. 3 credits.
Examines the transformations in the relationships between self and society taking place at the interface between social networks, digital information and communication technologies, new media, and Big Data. Explores what these changes mean for the future of the social sciences and humanities, and what these disciplines in turn can teach us about these changes that the “analytics” of computational and data sciences cannot. Introduces students to cutting-edge methods in digital sociology and digital ethnography, exploring a variety of emerging technology developments, such as augmented reality, digital fabrication, cryptocurrency, blockchain, automation, machine learning, and artificial intelligence. Examines new forms of inequality and intimacy, technologically mediated and distributed practices of human empathy and discernment, and emerging ethical questions for research and university education. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 394: Sociology of Human Rights. 3 credits.
Provides an overview of sociological, theoretical, and methodological approaches to understanding human rights. Examining connections between inequality, conflict, social justice, governance, and human rights, the course focuses on the contexts of meaning within which human rights are invoked and practiced as well as the role that non-state actors...
play in shaping the development and institutionalization of human rights. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCI 395:** *Special Topics in Sociology*. 3 credits.
Introduces the research interests of the faculty, offering new courses that reflect current issues not yet incorporated into the curriculum. Offers, in addition, advanced study into topics covered in the standing curriculum. Topics change by semester. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** SOCI 101

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCI 399:** *Independent Study*. 1-3 credits.
Individual study of sociological topic of interest to student. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** 6 hours of Sociology and approval of a written proposal.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**SOCI 405:** *Analysis of Social Data*. 4 credits.
Overview of management and analysis of empirical social science data, including file construction, scaling and measurement, data transformation, and treatment of missing data. Emphasizes manipulation, management, and analysis of data sets using computers. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Recommended Prerequisite:** 60 hours, SOCI 313, or Permission of Instructor.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCI 410:** *Social Surveys and Attitude and Opinion Measurements*. 3 credits.
Surveys research methods and techniques to collect, measure, and analyze social data, attitudes, and opinions with special emphasis on using computer software, the Internet, and other information technologies for social research. Highlights ethical issues for social research, computing, and information technology. Offered by Sociology & Anthropology (p. 496). Limited to three attempts. Equivalent to SOCI 431.

**Mason Core:** Info Tech (without Ethics) (p. 142)

**Recommended Prerequisite:** SOCI 303 and 313, or equivalents, or Permission of Instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCI 412:** *Contemporary Sociological Theory*. 3 credits.
Presents for analysis and discussion the significant theorists and themes in contemporary sociological theory. Designed to enhance student’s skills in reading and analyzing primary texts and to encourage reflection on contemporary social reality. Fulfills writing intensive requirement. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

**Specialized Designation:** Writing Intensive in Major

**Registration Restrictions:**
**Required Prerequisite:** SOCI 311C.
C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCI 416:** *Internship in Sociology I*. 3-6 credits.
Intended to provide students with hands-on experience in sociology and to deepen sociological knowledge. The internship experience links theory and practice. Students work in approved setting as applied sociologists. Notes: Minimum 45 hours of work for each credit required. A research paper or project is required for this course. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** Must have completed at least 85 credits (21 credits must be in sociology) of coursework. Enrollment in or completion of SOCI 313.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCI 417:** *Internship in Sociology II*. 1-2 credits.
Intended to provide students with hands-on experience in sociology and to deepen sociological knowledge. The internship experience links theory and practice. Students work in approved setting as applied sociologists. Notes: Minimum 45 hours of work for each credit required Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 2 credits.

**Recommended Prerequisite:** SOCI 313 (can be enrolled concurrently) or permission of instructor.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SOCI 431:** *Survey Research*. 3 credits.
Surveys research methods and techniques to collect, measure, and analyze social data, attitudes, and opinions with special emphasis on using computer software, the Internet, and other information technologies for social research. Highlights ethical issues for social research, computing, and information technology. Offered by Sociology & Anthropology (p. 496). Limited to three attempts. Equivalent to SOCI 410.

**Recommended Prerequisite:** SOCI 303 and 313, or equivalents, or permission of instructor.
SOCI 485: Anthropology and Education. 3 credits. Focuses on the role of education in society, including its historical development and current status. Explores the sociological aspects of education, such as the impact of educational systems on society and the role of education in different cultures. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: Admission to honors in the sociology major.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 480: Honors Seminar in Sociology I. 3 credits. Develop research proposals and an appropriate bibliography for honors thesis under the guidance of a sociology faculty member. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Specialized Designation: Impact Associated.

Recommended Prerequisite: Admission to honors in the sociology major.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Special scale. (p. 84)

SOCI 481: RS: Honors Seminar in Sociology II. 3 credits. Pursue independent research and write honors thesis under the guidance of a faculty mentor. Present work in a colloquium at the end of the semester. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: Successful completion of SOCI 480.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 483: The Sociology of Higher Education. 3 credits. Exposes students to sociological theory and research on evolution of higher learning in United States. Explores social forces that have shaped the distinctively American approach toward higher education and have led to transformation of higher education in contemporary society. Particular attention to relation between universities and elites within surrounding society, linkage between education and industry, norms and values that are presupposed by educational institutions, and bearing of sports on values and traditions of higher education. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 485: RS: Sociological Analysis and Practice. 3 credits. Provides an in-depth examination of historical and contemporary issues facing sociological scholars. Focuses on the philosophies, practices, and procedures used by individuals and organizations to answer sociological questions. Engages a variety of materials, experiences and resources to answer a specific research question. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Mason Core: Capstone (p. 142)

Specialized Designation: Research/Scholarship Intensive

Recommended Prerequisite: SOCI 303.

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 492: Sociology of Organizations. 3 credits. Theories, analysis of types of organizations from informal voluntary associations to large complex ones. Explores nonprofit organizations and alternatives to bureaucracies, such as feminist collectives, cooperatives, self-help groups, and social movement organizations. Students do field work in organizations applying theories and concepts to observations. Offered by Sociology & Anthropology (p. 496). Limited to three attempts.

Recommended Prerequisite: Admission to honors in the sociology major.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

SOCI 499: Independent Research in Sociology. 1-4 credits. Investigation of sociological problem according to individual interest, with emphasis on research. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: 18 hours of SOCI including SOCI 303, 311, 313 and 412; a 3.0 GPA in SOCI; and a research proposal approved by instructor and department chair prior to enrollment.

Schedule Type: Independent Study

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

SOCI 516: Internship in Sociology. 1-6 credits. Learning experience in the application of sociological knowledge and skills in different work settings. Students work in approved setting as applied sociologists. Notes: Minimum 45 hours of work for every 1 credit. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 21 hours of SOCI, including research methods, or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading: This course is graded on the Graduate Regular scale. (p. 84)

SOCI 599: Issues in Sociology. 1-3 credits. Contemporary topics in sociology including sociological theory, crime and delinquency, advanced research methods, social and cultural change, urban sociology, medical sociology, sociology of aging, and rural sociology. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

SOCI 601: Proseminar in Public and Applied Sociology. 3 credits.
Core course devoted to the philosophical, historical, theoretical, and methodological dimensions of public and applied sociology within the United States. Traces the evolution of the field during the 20th century, from its inception in the Chicago school and the studies of W.E.B. DuBois to more recent formulations, as these bear on the interplay between social scientific knowledge and public decisions and debates. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 602: Writing for the Social Sciences. 3 credits.
Develops strategies for successful social scientific writing, self-evaluation, and managing anxiety around the production of written work. Provides practice in different types of writing undertaken by social scientists including research reports, scholarly journal articles, and research proposals. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 605: Gender and Social Structure. 3 credits.
Reviews theories explaining the development and maintenance of gender. Using historical and comparative data, examines perceived, prescribed, and actual sex differentiation in social, political, and economic roles. Begins with gender as a social structure and then examines contemporary research as support or refutation for variety of theoretical paradigms. Includes discussion of gender in intimate relationship and the public sector. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 608: Juvenile Delinquency. 3 credits.
Sociology of adolescent behavior. Sociological factors that determine which behaviors and social categories of adolescents are likely to be labeled and treated as delinquent. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 607: Criminology. 3 credits.
Crime and crime causation. Topics include social basis of law, administration of justice, and control and prevention of crime. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 614: Sociology of Culture. 3 credits.
Analyzes 20th-century debates in American culture and cultural politics, with emphasis on art and popular culture, news media, and competing notions of "the public." In-depth readings in cultural sociology cover variety of theoretical and methodological approaches. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 620: Methods and Logic of Social Inquiry. 3 credits.
Emphasizes gathering, interpreting, and evaluating scientific evidence. Covers logic of scientific inquiry, including the application of various research designs and data collection methods. Develops critical-thinking skills by using set of rules and logical criteria for evaluation of social science research. Focuses both on how results are obtained and disseminated via research reports. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: Undergraduate statistics and research methodology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to students with a major in Sociology.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 623: Racial and Ethnic Relations: American and Selected Global Perspectives. 3 credits.
Covers demographic purview of U.S. and other global racial and ethnic groups and racial and ethnic groups as human-social-minority and dominant groups. Explores factors contributing to dominant and minority status and means of altering dominant groups assessment of minority group status. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to students with a major in Sociology.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 624: International Migration in the Age of Globalization. 3 credits.
Focuses on theoretical, methodological, and policy-related issues on international migration from a sociological perspective. Explores case studies of immigrant communities and their adaptation patterns, paying particular attention to immigrants from Latin America, Asia, and the Caribbean. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: Undergraduate statistics and research methodology, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 631: Survey Research. 3 credits.
Introduces theory, method, and practice of survey research design and analysis. Students complete survey research project. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: SOCI 530 and 531, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 632: Evaluation Research for Social Programs. 3 credits.
Studies methodological issues related to evaluation of social programs. Explores conceptual and research design issues in relation to social programs, particularly delivery of social services. Includes examination of methods used to assess need for programs, impact of delivery systems, and efficiency and effectiveness of social programs. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: SOCI 530 and 531, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 633: Special Topics in Sociology. 3 credits.
Specialized inquiry of topics of contemporary sociological research and scholarship. Content varies. Notes: May be repeated for credit when
topic is different. Offered by Sociology & Anthropology (p. 496). May be repeated within the term for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCI 634: Qualitative Research Methods.** 3 credits.
Examines basic research methods involving observational techniques and procedures used in description and analysis of patterns, configurations, ethnics, eidos, structures, functions, and styles typical of whole societies and cultures. Emphasizes case studies, unobtrusive methods, participant observation, longterm residence, choices of observer status role, recording data, uses of technical equipment, key informants, interviewing techniques, and ethical considerations in employing such methods and procedures. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCI 635: Environment and Society.** 3 credits.
Overview of human ecology and environmental sociology, emphasizing selected topics. Focuses on theory, since theory makes it possible to generalize from understandings derived in an analysis of a particular problem and apply them to other problems. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCI 636: Statistical Reasoning.** 3 credits.
Intermediate treatment of quantitative analytic techniques used in sociology. Topics include sampling, inference, hypothesis testing, analysis of variance, and bivariate and multiple correlation and regression. Introduces logic of multivariate analysis. Focus on how results are obtained and disseminated via research reports. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Recommended Prerequisite:** Undergraduate statistics and research methodology, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCI 641: Micro Sociology: Inequality and Everyday Life.** 3 credits.
Analyze the relationship between everyday life and social inequalities, with a particular focus on examining theoretically and empirically the relationship between governing structures of society and the structure of situational and interactional terrains as it plays out in the lives of everyday people. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCI 655: Ethnography.** 3 credits.
Introduces ethnography in sociology to graduate students. Teaches techniques for collecting, analyzing and writing-up ethnographic materials. Considers some of the central methodological issues relevant to doing ethnography. Explores some of the critical ethical and political questions that arise within ethnographic research practice. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**SOCI 660: Historical and Comparative Sociology.** 3 credits.
Seminar in theory and methods of historical and comparative sociology, primarily for students with background in sociological theory and methods. Examines basic approaches and research data of history and sociology, surveys development of field, and analyzes exemplary studies. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit. Equivalent to SOCI 860.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**SOCI 670: Social Networks, New Media, and Inequality.** 3 credits.
Examines the internet and other new technologies from a sociological perspective. Focuses on how technologies mitigate or exacerbate-transform or reproduce-existing and new forms of inequality. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

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**SOCI 686: Sociology of Aging.** 3 credits.
Analyzes sociological issues in aging, including class and cultural factors, problems of work, retirement, attachment and loss, and ageism. Examines different theories of aging. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

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**SOCI 696: Independent Study.** 1-3 credits.
Theoretical and research literature chosen by student and instructor. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Special scale. (p. 84)

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**SOCI 711: Classical Sociological Theory.** 3 credits.
In-depth examination of major issues in classical (pre-1930) sociological theory. Analyzes Durkheim, Marx, Weber, Mead, and others, and emphasizes social and intellectual context of their theories. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a major in Sociology.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 730: Analytic Techniques of Social Research. 3 credits.
Introduces multiple regression and causal analysis to sociological researchers, with a focus on obtaining and disseminating results. Moves from linear regression to the general linear model with several variables, its extensions, assumptions, and regression diagnostics. Examines the use of dummy variable and the analysis of interaction effects. Considers systems of equations and nonlinear outcomes. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: Undergraduate statistics and research methodology, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 797: Master’s Capstone Paper. 3 credits.
MA paper completion under the direction of one faculty member. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: Admission to graduate program in sociology or permission of graduate director.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

SOCI 799: Thesis. 1-6 credits.
Master’s thesis research under direction of thesis committee. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses
SOCI 803: Institutions and Inequality. 3 credits.
Analyzes the interrelations between social inequalities and institutional structures, including markets, the press, prisons, mental institutions, cultural organizations, and corporations. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 804: Sociology of Globalization. 3 credits.
Addresses the social, political, cultural, and economic process of globalization. Explores the limits on globalization during the precapitalist era, the relation between empire and the internal structure of imperialist societies, theoretical debates over the contemporary world system, the relation between cities and globalization, and the link between globalization and social inequality within both developed and developing societies. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Recommended Prerequisite: Have completed either 6 credits of coursework at the 600 level or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 833: Special Topics in Sociology. 3 credits.
Specialized inquiry of topics of contemporary sociological research and scholarship. Content varies. Notes: May be repeated for credit when topic is different. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Have completed either 6 credits of coursework at the 600 level or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate level students.
of distinct youth cultures within and outside formal school settings, including schooling and commodity culture, how markets promote and hinder particular educational ideologies, and how corner markets operate as spaces of cultural learning. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 845: Society and Education. 3 credits.
Exposes students to the major theories, debates, and findings within the sociology of education, emphasizing the reciprocal influences of schooling and social inequalities within contemporary societies. Emphasis on the historical evolution of public schooling in the United States, the complex relation between schooling and economic institutions, class differences in educational opportunity, and the politics of educational reform. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 850: Sociology of Development. 3 credits.
Analyzes socioeconomic and political change, focusing on the poor countries of Asia, Africa, and Latin America. Offers a basic descriptive understanding of processes of change in these countries and an introduction to major theoretical perspectives on development and globalization, from classical theories of comparative advantage to theories of imperialism, modernization, dependency, and globalization. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 851: Globalization and Social Movements. 3 credits.
Analyzes current issues in the study of social movements, with an emphasis on the ways in which globalization shapes and in turn is shaped by social movements. Emphasis is placed on the relations among the strategies, identities, and organizations bound up with transnational social movements and the relation between the dynamics of global political and economic developments and protest movements in core and peripheral societies. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 853: Cities in a Global Society. 3 credits.
Examines the scholarly literature on cities and globalization with a focus on the impact of globalization on urban environments and the effects of urbanization on the processes of globalization. Emphasis on the ways in which globalization restructures urban life in the core and periphery of the world economy with attention paid to the effects of spatial dispersion on the character of economic institutions within the advanced societies, the shifting nature of crime and security, immigration, and the cities of the Global South. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 857: Sociology of Human Rights. 3 credits.
Examines the connections among inequality, conflict, social justice, and human rights in an age of globalization. Drawing from case studies from around the world, course examines institutional and structural violence and inequality as they relate to state, corporate, and military power; international law and order; welfare and social policy; global justice; regionalism, multilateralism, and transnationalism; environmental protection; gender inequality; ethnic conflict; resource wars; and national security policy before and after September 11, 2001. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 860: Historical and Comparative Sociology. 3 credits.
Seminar in theory and methods of historical and comparative sociology, primarily for students with background in sociological theory and methods. Examines basic approaches and research data of history and sociology, surveys development of field, and analyzes exemplary studies. Offered by Sociology & Anthropology (p. 496). May not be repeated for credit. Equivalent to SOCI 660.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SOCI 870: Directed Readings Sociology. 3 credits.
Intensive reading course to develop comprehensive understanding of specific field in sociology as agreed on with advisor. Notes: Content varies. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree.

Recommended Prerequisite: 6 credits of 600 level SOCI courses

Registration Restrictions:
Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SOCI 880: Independent Study in Sociology.** 3 credits.
Reading and research on selected topic, resulting in a written project as agreed on with supervising faculty. Notes: Content varies. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree.

**Recommended Prerequisite:** 6 credits of 600 level SOCI courses

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 900 Level Courses

**SOCI 998: Doctoral Dissertation Proposal.** 1-9 credits.
Work on research proposal for doctoral dissertation. Notes: A maximum of 9 credits of 998 may be applied to the degree. Students may enroll in 998 in their final year of coursework while preparing for comprehensive exams. Contact department for approval and CRN to register. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree.

**Recommended Prerequisite:** Completion of all but final year of coursework and permission of graduate director.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**SOCI 999: Doctoral Dissertation.** 1-12 credits.
Doctoral dissertation research and writing on approved dissertation topic under direction of committee. Notes: Maximum of 12 credits may be applied toward degree. Offered by Sociology & Anthropology (p. 496). May be repeated within the degree.

**Recommended Prerequisite:** Successful completion of SOCI 998.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### Sociology and Anthropology (SOAN)

#### 500 Level Courses

**SOAN 510: Culture and Globalization.** 3 credits.
Provides continuing exposure to the range of disciplinary perspectives necessary for understanding crucial issues in the global arena. Through case examples, focuses on the intersections of culture and globalization.

**Recommended Prerequisite:** SOAN 500.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### Software Engineering (SWE)

#### 200 Level Courses

**SWE 205: Software Usability Analysis and Design.** 3 credits.
Principles of user interface design. Concepts for objectively and quantitatively assessing the usability of software user interfaces. Outcomes include knowledge of quantitative engineering principles for designing usable software interfaces and an understanding that usability is more important than efficiency for almost all modern software projects, and often the primary factor that leads to product success. Major topics include cognitive models for human perceptions and needs, which are used as a basis for analytical and critical thinking about user interfaces; specific engineering principles for designing usable menus, forms, command languages, web sites, graphical user interfaces and web-based user interfaces. Assessments will include written analytical evaluations of existing user interfaces, exams, and HTML-based design projects. Offered by Computer Science (p. 1049). Limited to two attempts.

**Registration Restrictions:**

**Required Prerequisites:** ENGH 101C or 100C.
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

SWE 301: Internship Preparation. 0 credits.
Preparation for Internship Educational Experience. Intended for, but not limited to, students planning internships in the Applied Computer Science Software Engineering Program. Internship employment opportunities. Basic interview skills. Techniques for applying academic knowledge to practical software development. Techniques for extracting knowledge from practical experience. Peer presentation from students who have completed internships. Offered by Computer Science (p. 1049). Limited to two attempts.

Recommended Prerequisite: Limited to ACS or CS majors with junior standing or permission of instructor.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

SWE 310: Software Engineering. 3 credits.
An introduction to concepts, methods, and tools for the creation of large-scale software systems. Methods, tools, notations, and validation techniques to analyze, specify, prototype, and maintain software requirements. Introduction to object-oriented requirements modeling, including use of case modeling, static modeling, and dynamic modeling using the Unified Modeling Language (UML) notation. Concepts and methods for the design of large-scale software systems. Fundamental design concepts and design notations are introduced. A study of object-oriented analysis and design modeling using the UML notation. Students participate in a group project on software requirements, specification, and object-oriented software design. Offered by Computer Science (p. 1049). Limited to two attempts. Equivalent to CS 321.

Recommended Prerequisite: Completion of internship.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

SWE 321: Internship Reflection. 1 credit.
Reflection on Internship Educational Experience. Intended for, but not limited to, students completing internships in the Applied Computer Science Software Engineering Program. Analysis of techniques for applying academic knowledge to practical software development. Analysis of techniques for extracting knowledge from practical experience. Student presentations summarizing internships relating them to academic program goals. Offered by Computer Science (p. 1049). Limited to two attempts.

Recommended Prerequisite: SWE 301.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

SWE 332: Object-Oriented Software Design and Implementation. 3 credits.
In-depth study of software design and implementation using a modern, object-oriented language with support for graphical user interfaces and complex data structures. Topics covered are specifications, design patterns, and abstraction techniques, including typing, access control, inheritance, and polymorphism. Students will learn the proper engineering use of techniques such as information hiding, classes, objects, inheritance, exception handling, event-based systems, and concurrency. Offered by Computer Science (p. 1049). Limited to two attempts. Equivalent to CS 332.

Registration Restrictions:
Required Prerequisites: CS 310 and MATH 125.

C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

SWE 410: Web Application Development. 3 credits.
A comprehensive introduction to the design and implementation of applications for the web, including client and server-side development. Exploration of principles for the design of web applications that are robust, scalable, and secure, that enable change and reuse, and that are usable for their intended purpose. Topics include client-server communication, asynchronous programming, persistence, security, web development tools, the document object model, templates and data-binding, interaction techniques, and site design for the web. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MATH 125) and (CS 321).

C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SWE 437: Software Testing and Maintenance. 3 credits.
Concepts and techniques for testing and modifying software in evolving environments. Topics include software testing at the unit, module, subsystem, and system levels; developer testing; automatic and manual techniques for generating test data; testing concurrent and distributed software; designing and implementing software to increase maintainability and reuse; evaluating software for change; and validating software changes. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MATH 125\(^C\) and CS 310\(^C\)).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SWE 443: Software Architectures. 3 credits.
Teaches how to design, understand, and evaluate software systems at an architectural level of abstraction. By end of course, students will be able to recognize major architectural styles in existing software systems, describe a system’s architecture accurately, generate architectural alternatives to address a problem and choose from among them, design a medium-size software system that satisfies a specification of requirements, use existing tools to expedite software design, and evaluate the suitability of a given architecture in meeting a set of system requirements. Offered by Computer Science (p. 1049). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: CS 321\(^C\), 421\(^C\), SWE 321\(^C\) or 421\(^C\).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

SWE 510: Object-Oriented Programming in Java. 3 credits.
Introduces students to programming in the Java language. Topics include problem-solving methods and algorithm development, program structures, abstract data types, simple data and file structures and program development in a modular, object-oriented manner. Introductory use of OO language features, including data hiding, inheritance, polymorphism, and exception handling. Goals include design and development of Java classes and class type hierarchies. An introduction to Java servlets and applets is included. Emphasis on program development is reinforced through several programming projects. Notes: Credit cannot be applied to a graduate degree in the Volgenau School or the BS degree in computer science. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: Undergraduate courses or equivalent knowledge in programming in a high-level language.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SWE 619: Object-Oriented Software Specification and Construction. 3 credits.
In-depth study of software construction using modern, object-oriented language with support for graphical user interfaces and complex data structures. Specifications, design patterns, and abstraction techniques, including procedural, data, iteration, type, and polymorphic. Information hiding, classes, objects, and inheritance. Exception handling, event-based systems, and concurrency. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: SWE foundation courses or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SWE 620: Software Requirements Analysis and Specification. 3 credits.
In-depth study of object-oriented requirements modeling, including use case modeling, static modeling and dynamic modeling with Unified Modeling Language (UML) notation. Students participate in group project on software requirements and specification using modern method. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: SWE foundation courses or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SWE 621: Software Design and Architecture. 3 credits.
An examination of the methods, processes, and notations for working with architecture and design in software. Exploration of design as the enumeration, evaluation, and selection of design alternatives to achieve quality attributes. Surveys perspectives on design from risk minimization, domain modeling, abstraction, architectural styles, design patterns, and reuse. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: SWE foundation courses or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SWE 622: Distributed Software Engineering. 3 credits.
Hands-on introduction to techniques and programming interfaces for distributed software engineering. Networking protocols at several layers. Construction of distributed and concurrent software using network protocol services. Applications of Internet and web-based software. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: SWE foundation courses or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SWE 625: Software Project Management. 3 credits.
Lifecycle and process models; process metrics; planning for a software project; mechanisms for monitoring and controlling schedule, budget, quality, and productivity; and leadership, motivation, and team building. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: SWE foundation courses or equivalent.

Recommended Prerequisite: SWE 619,620, and 621; or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SWE 631: Software Design Patterns. 3 credits.

Recommended Prerequisite: SWE 621.
Recommended Prerequisite: component-based software development, middleware, and reusable components. Offered by Computer Science (p. 1049). May not be repeated for credit.

Recommended Prerequisite: SWE 619 or CS 540 and CS 571, or permission of instructor.

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Recommended Prerequisite: SWE 619.
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 699: Special Topics in Software Engineering.** 3 credits.
Special topics not occurring in regular SWE sequence. Notes: May be repeated for credit when semester topic is different. Offered by Computer Science (p. 1049). May be repeated within the term.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**700 Level Courses**

**SWE 721: Reusable Software Architectures.** 3 credits.
Investigates software concepts that promote reuse of software architectures. Studies influence of object technology on software design and reuse. Investigates domain modeling methods, which model the application domain as a software product family from which target systems can be configured. Covers reusable software patterns including architecture patterns and design patterns, software components, and object-oriented frameworks. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** SWE 621.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 724: Program Analysis for Software Testing.** 3 credits.
Different methods for analyzing software, primarily for purpose of testing. Analysis techniques, algorithms, tools, and applications. Goals are to explore current research issues, learn how to build analysis tools, and understand how these techniques can be applied to software-related activities such as maintenance, reuse and optimization. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** A compiler class (e.g. CS 540) OR a testing class (e.g. SWE 637) or permission of the instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 737: Advanced Software Testing.** 3 credits.
Cutting edge concepts and techniques in software testing. An in-depth study of existing approaches to testing software as well as development of new approaches. Applications of existing concepts and techniques to new technologies. Advanced MS students learn in-depth knowledge for how to apply testing in difficult and challenging real-world scenarios. PhD students learn current research trends, both theoretical and practical. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** SWE 637.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 760: Software Analysis and Design of Real-Time Systems.** 3 credits.
Background for students who want to conduct research in software engineering of real-time systems. Provides understanding of key real-time software system analysis, design concepts and methods, and how they are used in developing large-scale, real-time software systems. Also explores potential impact of emerging technologies. Includes term project in design and analysis of complex, real-time software system. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** SWE 621.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 763: Software Engineering Experimentation.** 3 credits.
Detailed study of scientific process, particularly using experimental method. Examines how empirical studies are carried out in software engineering. Reviews distinction between analytical techniques and empirical techniques. Other topics include experimentation required in software engineering, problems that can be solved using
experimentation, methods used to control variables and eliminate bias in experimentation, and analysis and presentation of empirical data for decision making. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Recommended Prerequisite:** SWE 621, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 795:** Advanced Topics in Software Engineering. 3 credits.
Advanced topics not occurring in existing courses. Topics normally assume knowledge in one or more existing MS SWE courses. Notes: Repeatable within degree for credit when subject differs. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 12 credits applicable toward MS.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 796:** Directed Readings in Software Engineering. 3 credits.
Analysis and investigation of contemporary problem in software engineering. Requires prior approval by faculty member who supervises student's work. Written report also required. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 798:** Research Project. 3 credits.
Master's degree candidates undertake a project using knowledge gained in MS program. Topics chosen in consultation with a faculty sponsor. Research project is chosen under guidance of full-time graduate faculty member, resulting in written technical report. Notes: Prior approval required by faculty sponsor who supervises student's work. To register, students must complete an independent study form available in department office. It must be initialed by the faculty sponsor and approved by the department chair. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** SWE 621, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 799:** Thesis. 1-6 credits.
Research project completed under supervision of faculty member, which results in technical report accepted by three-member faculty committee. Report must be defended in oral presentation. Notes: To register, students must complete independent study form available in department office. It must be initialed by faculty sponsor and approved by department chair. Offered by Computer Science (p. 1049). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**800 Level Courses**

**SWE 821:** Software Engineering Seminar. 3 credits.
Study of application of software engineering principles, design methods, and support tools through real-life problems extracted from faculty and industry projects. Notes: May be repeated with change in topic. Offered by Computer Science (p. 1049). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** SWE 621

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SWE 825:** Special Topics in Web-Based Software. 3 credits.
Advanced topics in specifying, designing, modeling, developing, deploying, testing and maintaining software written as web applications and web services. May be repeated with change in topic. Offered by
Recommended Prerequisite: SWE 642 Software Engineering for the World Wide Web.

Registration Restrictions:
Enrollment is limited to Graduate level students.
Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

SPAN 201: Intermediate Spanish I. 3 credits.
Further development of skills in listening, speaking, reading, and writing. SPAN 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 102, 110, 115, appropriate placement score or permission of department.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 202: Intermediate Spanish II. 3 credits.
Application of skills to reading, composition, and discussion. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 201, appropriate placement score or permission of department.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 215: Intermediate Spanish for Heritage Speakers. 3 credits.
Builds on the linguistic resources and sociocultural knowledge of intermediate heritage speakers of Spanish as they prepare for courses at the advanced level. Students will develop their oral and written expression through regular exposure to Spanish-language texts, films, digital media, music, and visual art. Students will also cultivate their critical understanding of the significance of language and other forms of culture for Spanish-language communities. The course is designed to give students multiple opportunities for personal reflection on issues concerning language and identity. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to SPAN 202.

Recommended Prerequisite: SPAN 201 or equivalent

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

SPAN 301: Grammar and Syntax. 3 credits.
In-depth review of Spanish grammar and syntax. Extensive practice in controlled and free writing with emphasis on fundamental difficulties and points of interference that exist between English and Spanish. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 202 or SPAN 215, appropriate placement score, or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
SPAN 305: *Spanish in Context I*. 3 credits.
Integrated content-based approach to the study of Spanish, designed to promote oral and written abilities, as well as critical understanding of Latin American, Latino, and/or Spanish histories and cultures. Includes vocabulary-building activities, grammar review and practice, assigned readings in a variety of genres, critical cultural analysis, in-class discussions, written essays, and the viewing of films. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to SPAN 309, SPAN 315.

Recommended Prerequisite: SPAN 202 or SPAN 215, or equivalent, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 306: *Spanish in Context II*. 3 credits.
Continuation of SPAN 305. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to SPAN 309, SPAN 315.

Recommended Prerequisite: SPAN 305, or equivalent, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Intensive content-based approach to the study of Spanish, designed to promote oral and written abilities, as well as critical understanding of Latin American, Latino, and/or Spanish histories and cultures. Includes vocabulary-building activities, grammar review and practice, assigned readings in a variety of genres, critical cultural analysis, in-class discussions, written essays, and the viewing of films. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to SPAN 305, SPAN 306, SPAN 315.

Recommended Prerequisite: SPAN 202 or SPAN 215, or equivalent, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 315: *Spanish in Context for Heritage Speakers*. 3 credits.
Designed for students who have some communicative ability in Spanish, normally acquired in the home, who want to improve their reading and writing abilities while developing a critical understanding of Latin American, Latino, and/or Spanish histories and cultures. Course components include orthography and vocabulary activities, grammar review and practice, assigned readings in a variety of genres, critical cultural analysis, in-class discussions, written essays, and the viewing of films. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to SPAN 305, SPAN 306, SPAN 309.

Recommended Prerequisite: SPAN 215, appropriate placement score or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 321: *Introduction to Spanish Culture*. 3 credits.
History, culture, economic and social development, and scientific and artistic achievements that have contributed to the formation of modern Spain. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to SPAN 461.

Recommended Prerequisite: ENGL 101 or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 322: *Introduction to Latin American Culture*. 3 credits.
History, culture, economic and social development, and scientific and artistic achievements that have contributed to the formation of modern Latin America. Offered by Modern & Classical Languages (p. 424). Limited to three attempts. Equivalent to SPAN 466.

Mason Core: Global Understanding (p. 142)

Recommended Prerequisite: ENGL 101/ENGH 101 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 323: *Field Study in Hispanic Culture*. 1-3 credits.
Study at an academic institution in a Spanish-speaking country including classroom studies with professors from the host country and field experiences. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: 60 hours or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 324: *Study Abroad in Spanish*. 3 credits.
Study at an academic institution in a Spanish-speaking country including classroom studies with professors from the host country and field experiences. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 202 (or equivalent) or permission of instructor

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 325: *Major Hispanic Writers*. 3 credits.
Study of the works of major Hispanic writers in translation. Writers studied vary. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

Mason Core: Literature (p. 142)
Recommended Prerequisite: ENGH 101 or equivalent.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 326: Treasures of Spanish-Language Literature and Culture. 3 credits.
Introduces key themes and trends in Spanish-language literature and culture in the global context. Content varies across texts, media or other cultural practices. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: SPAN 202 or SPAN 215, or equivalent, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 329: Special Topics in Spanish and Latin American Literature. 3 credits.
Study of selected topics in Spanish or Latin American literature. Writers and topics vary. Notes: Designed for students who are not pursuing a concentration in Spanish. May be repeated when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: ENG 101 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 351: Oral Spanish. 3 credits.
Development of oral expression on topics of current interest and everyday situations, including written assignments. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 202 or SPAN 215, or equivalent, appropriate placement score, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 370: Spanish Writing and Stylistics. 3 credits.
Improves writing skills by covering formal and stylistic concepts of the Spanish language. Includes practice and exposure to different textual genres in an interdisciplinary fashion. Includes common doubts concerning spelling, expression, and style; business Spanish; journalistic Spanish; academic Spanish; and creative writing. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: SPAN 306 or 309, or SPAN 315, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 375: Introduction to Spanish-Language Cinema. 3 credits.
Introduces the study of film as an art form and the academic discipline of film studies as they relate to the Spanish-speaking world. Focuses on students' acquisition of knowledge on the material and principles of film form and their practice in film analysis of discrete Spanish language films and film genres of significance within the 20th and 21st centuries. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 305 and SPAN 306 or SPAN 309 or SPAN 315.

Recommended Corequisite: SPAN 370, SPAN 385, SPAN 388, SPAN 390.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 335: Topics for Proficiency: The Americas. 3 credits.
Integrated content-based approach to conversational Spanish. Designed to promote increased confidence and fluency in both formal and informal Spanish registers, as well as critical understanding of Latin American and/or Latino histories and cultures. Current events, films, literary texts, and popular culture reflecting issues of Latin Americans and/or Latinos serve as catalysts for class discussions, oral presentations, and debates. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: SPAN 202 or SPAN 215, or equivalent, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 336: Topics for Proficiency: Spain. 3 credits.
Integrated content-based approach to conversational Spanish. Designed to promote increased confidence and fluency in both formal and informal Spanish registers, as well as critical understanding of Spanish history and culture. Current events, films, literary texts and popular culture reflecting Spanish issues serve as catalysts for class discussions, oral presentations and debates. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: SPAN 202 or SPAN 215, or equivalent, or permission of instructor.
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 388: Introduction to Latina/o Studies. 3 credits.
Interdisciplinary approach to the study of U.S. Latina/o cultural
production, designed to promote critical thinking in understanding Latina/
o histories, literatures, and cultures. Offered by Modern & Classical
Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 335 or permission of instructor.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 390: Introduction to Hispanic Literary Analysis. 3 credits.
Required course that prepares students for the study of Hispanic
literatures. Introduces basic terminology of literary analysis and provides
practice in the examination of texts in the major genres: poetry, narrative,
and drama. Offered by Modern & Classical Languages (p. 424). Limited to
three attempts.

Recommended Prerequisite: SPAN 370 (may be enrolled concurrently) or
permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

SPAN 400: Spanish for the Professions. 3 credits.
Advanced study of the language needed for use in a specific profession,
such as translation, business, social service, or health professions. Notes:
May be repeated when profession differs. Offered by Modern & Classical
Languages (p. 424). May be repeated within the degree for a maximum 6
credits.

Recommended Prerequisite: SPAN 385 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 425: Independent Study. 1-3 credits.
Research and analysis of a selected problem in literature or linguistics
in consultation with a department member. Notes: Maximum of 6 credits
of independent study may be applied to fulfillment of requirements for
the major. Offered by Modern & Classical Languages (p. 424). May be
repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Spanish major with 90 credits, and
permission of instructor.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 426: Independent Study. 1-3 credits.
Research and analysis of a selected problem in literature or linguistics
in consultation with a department member. Notes: Maximum of 6 credits
of independent study may be applied to fulfillment of requirements for
the major. Offered by Modern & Classical Languages (p. 424). May be
repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Spanish major with 90 credits, and
permission of instructor.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 430: Spanish in the United States. 3 credits.
Covers both formal and sociolinguistic aspects of Spanish in the U.S.
by discussing demographic aspects and a historical overview of the
varieties of Spanish spoken in the United States. Gives a foundation in
issues such as linguistic variation, language choice, the relationship
among race, ethnicity, and language; official language policies; individual
and societal bilingualism; and language diversity in education. Offered by
Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 385, or advanced ability in Spanish, or
permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 452: Advanced Written Spanish. 3 credits.
Development of skills required in writing Spanish. Guided and original
compositions. Grammatical structures reviewed and supplemented with
individual corrections. Offered by Modern & Classical Languages (p. 424).
Limited to three attempts.

Recommended Prerequisite: 9 hours of SPAN at the 300 level or
permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 455: Spanish-English Translation. 3 credits.
Introduces the history, theory, analysis, and practice of Spanish-
English and English-Spanish translation. Includes literal versus free
translation; denotation and connotation; regional and social variation;
intercultural pragmatic differences; interlanguage influence and calques;
and genre and audience. Hands-on experience with literary works,
newspaper articles, and advertisements, as well as legal, medical, and
technical documents. Offered by Modern & Classical Languages (p. 424).
Limited to three attempts.

Recommended Prerequisite: SPAN 370 and ENGL 302/ENGH 302; or
permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
SPAN 461: *Spanish Civilization and Culture.* 3 credits.
Survey of Spanish culture and civilization from the pre-Roman era to the 20th century. Offered by Modern & Classical Languages. (p. 424). Limited to three attempts. Equivalent to SPAN 321.

Recommended Prerequisite: SPAN 370 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 466: *Latin American Civilization and Culture.* 3 credits.
Introduction to the study of Latin American civilization and culture from the pre-Columbian era to the 20th century. Offered by Modern & Classical Languages. (p. 424). Limited to three attempts. Equivalent to SPAN 322.

Mason Core: Global Understanding (p. 142)

Recommended Prerequisite: SPAN 370 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 472: *Spanish Phonetics and Phonology.* 3 credits.
Introduction to the analysis of the Spanish sound system, both phonetics and phonology. Topics include the articulatory system, sound production, the classification of vowels and consonants, phonetic transcription, the mental representation of sounds, variation and accent, and processes of sound change, among others. Offered by Modern & Classical Languages. (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 385, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 474: *Spanish Syntax and Semantics.* 3 credits.
Investigates the knowledge Spanish speakers possess that enables them to understand and create expressions they have not heard before. Studies the system unconsciously used by Spanish speakers and writers to connect situations in the real world to the words and sentences that express each situation. Provides opportunities to analyze samples of language in actual use. Offered by Modern & Classical Languages. (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 385, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 476: *Teaching Spanish in the United States.* 3 credits.
Introduction to second language acquisition theory and research, and the application to teaching Spanish as a second language and a heritage language. Includes a discussion of sociocultural and political issues surrounding the teaching of Spanish in the United States. Covers learning objectives, critical pedagogy, course design, grammar instruction, task-based language teaching, computer-assisted language learning, materials evaluation, and assessment. Offered by Modern & Classical Languages. (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 385, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 480: *Special Topics in Spanish.* 3 credits.
Study of a selected theme in Hispanic literature, culture, or linguistics. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages. (p. 424). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: SPAN 385, 388 or 390, depending on topic, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 481: *Special Topics in Spanish.* 3 credits.
Study of a selected theme in Hispanic literature, culture, or linguistics. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages. (p. 424). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: SPAN 385, 388 or 390, depending on topic, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 482: *Mass Media and Popular Culture in the Spanish-Speaking World.* 3 credits.
Critical examination of the significance of mass media and/or popular culture for the development of Spanish-speaking nation-states in the 19th, 20th, and 21st centuries. Forms studied may include but are not limited to: Newspapers, popular novels, lithography, photography, radio, film, television, public art, sport, performance, digital media. Students will use readings in critical theory to explore ways in which forms of mass and popular culture connect to social imaginaries. Enhancement of advanced analytical skills in Spanish through different modules of lecture, reading, discussion, and writing. Offered by Modern & Classical Languages. (p. 424). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: SPAN 385, 388 or 390, depending on topic, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPAN 483: *Medieval and Early Modern Literature of Spain.* 3 credits.
Examines the main periods, trends, genres, and most representative works of the Spanish peninsular literature from its beginnings to the end of the Golden Age. Offered by Modern & Classical Languages. (p. 424). Limited to three attempts.

Recommended Prerequisite: SPAN 390 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPAN 484: Modern and Contemporary Literature of Spain.** 3 credits.
Examines the main periods, trends, genres, and most representative works of Spanish peninsular literature from the 18th century to the contemporary period. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** SPAN 390 or permission of instructor.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPAN 485: Topics in Community-Based Spanish.** 3 credits.
Combined classroom and community-based learning experience with a focus on historical, social, cultural, political, and linguistic aspects of Spanish in the community. Topics change each semester and include education, immigration, healthcare, and language policy, among others. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** SPAN 385, advanced ability in Spanish, or permission of instructor.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPAN 486: Topics in Latin American Literature I: Pre-colonial to Mid-19th Century.** 3 credits.
An interdisciplinary examination and discussion of major topics in literary texts and cultural practices of Latin America from pre-colonial times to the mid-19th century. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** SPAN 390 or permission of instructor.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPAN 487: Topics in Latin American Literature II: Late 19th Century to the Present.** 3 credits.
Interdisciplinary examination and discussion of major topics in literary texts and cultural practices of Latin America from the late 19th century to the present. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** SPAN 390 or permission of instructor.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPAN 488: The Literature of Spanish America.** 3 credits.
Survey of the literature of Spanish America. Study of texts that are representative of the colonial, romantic, modernista, avant garde, and contemporary periods. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** SPAN 390 or permission of instructor.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPAN 490: Internship in Spanish.** 1-6 credits.
Qualified students work with area schools, social service programs, government agencies, interest groups, museums, or corporations. Specific arrangements must be made with, and approved by, a member of the Spanish faculty during the semester prior to enrollment. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** 9 credits in SPAN at the 300 level or Permission of Instructor.

**Schedule Type:** Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPAN 497: Senior Honors Tutorial.** 3 credits.
First semester involves weekly meetings with a faculty member to discuss readings from a comprehensive list prepared by the Spanish faculty. In the second semester, independent research and completion of an honors essay under the supervision of a member of the Spanish faculty are required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** Major in SPAN, 90 hours, GPA of 3.00, and GPA of 3.00 in MAJOR FIELD.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPAN 498: Senior Honors Tutorial.** 3 credits.
Students meeting these requirements are admitted to candidacy on submission of a letter of application to the department Honors Committee in the second half of the junior year. A faculty recommendation and an interview by the Honors Committee are also required. First semester involves weekly meetings with a faculty member to discuss readings from a comprehensive list prepared by the Spanish faculty. In the second semester, independent research and completion of an honors essay under the supervision of a member of the Spanish faculty are required. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

**Recommended Prerequisite:** Major in SPAN, 90 hours, GPA of 3.00, and GPA of 3.00 in MAJOR FIELD.

**Schedule Type:** Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**500 Level Courses**

**SPAN 500: History of the Spanish Language.** 3 credits.
Study of the evolution of the Spanish language from its origins in Vulgar Latin to its present varieties. Includes consideration of social and political as well as linguistic factors in language change. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 501: Applied Spanish Grammar.** 3 credits.
Analysis of Spanish grammar as a basis for teaching language skills. Terminology and methodology for the teaching of syntax are stressed. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 502: Hispanic Sociolinguistics.** 3 credits.
Introduction to sociolinguistics with emphasis on bilingualism and language contact in the Spanish-speaking world including the United States. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 505: Applied Spanish Stylistics.** 3 credits.
Advanced study of the written language for students who want to develop their academic writing skills. Covers the most frequent challenges of writing through intensive practice in genres such as argumentation, narration, and description. Teaches students to identify and analyze best practices in academic writing. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 510: Methods of Literary and Cultural Studies.** 3 credits.
Introduces students to the fundamental techniques of literary and cultural analysis and to the major principles of various schools of criticism. Additionally, students will be exposed to basic methods and materials of research. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Recommended Prerequisite:** Graduate standing in the master's program in foreign language or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 512: Mass Media and Popular Culture.** 3 credits.
Introduction to critical perspectives on mass media in Spanish-speaking world. Course engages regions (Spain, Latin America, Latin@ United States) according to faculty specialty. Includes contextualization of media in nineteenth and twentieth-century historical processes and readings in critical theory. Develops graduate-level oral, written, and research skills in Spanish. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 520: Studies in Medieval Spanish Literature.** 3 credits.
Study of a major work or a literary genre of this period. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 525: Studies in Renaissance Literature. 3 credits.
Study of a literary movement or selected authors of the Spanish Renaissance. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 530: Studies in the Literature of the Golden Age. 3 credits.
Study of a literary genre or a major author of Spanish literature of the Golden Age. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 540: Studies in 20th-Century Literature. 3 credits.
Study of a writer, genre, theme, or movement of this period. Notes: May be repeated for credit with permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 544: Spanish-Language Film, Television, and Digital Media. 3 credits.
Examines contemporary trends in film and television studios, including film theory, the archival turn, and ethnographies of television reception, as they relate to the film and television cultures of the rich and diverse regions of Latin America. Notes: Open to graduate students and advanced undergraduates with the permission of the instructor. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 545: Studies in Hispanic Literature. 3 credits.
Study of major writers in a particular generation or movement. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 551: Special Topics in Spanish. 3 credits.
Special studies in Spanish or Latin American language, literature, or culture. Specific topics are announced in advance. Notes: May be repeated for credit with permission of department. Offered by Modern & Classical Languages (p. 424). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 560: Studies in Spanish American Poetry. 3 credits.
Study of major poets of a given period. Literary and social atmosphere of the period are emphasized. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 565: Studies in Spanish American Drama.** 3 credits.
Study of playwrights who have made a major contribution to the development of the genre. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 570: Language Politics and Policy.** 3 credits.
Analysis of language ideologies and politics of language as well as language policy in Latin America, Spain and the US. Includes study of language policies in public and private domains, including education, government and employment. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 571: Methods and Curriculum Design for Teaching Spanish.** 3 credits.
Multi-faceted introduction to the scholarly study of theory, research, and practice in learning and teaching Spanish. Includes application and critical analysis of different methods of instruction and curriculum design. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 576: Advanced Translation.** 3 credits.
Advanced work in translation of selected texts from diverse fields. Comparative terminology, sight translation, and precis writing. Emphasis on the function and technique of documentation in translation. Translation from Spanish to English and from English to Spanish. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPAN 580: Contemporary Hispanic Institutions.** 3 credits.
Study of 20th-century cultural, social, and political institutions in Spain and Spanish America with emphasis on language and terminology used to describe their functions, regulations, and conditions. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits. Equivalent to SPAN 680.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**SPAN 635: Seminar in Don Quixote.** 3 credits.
Study of Don Quixote and major critical approaches to the work. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
SPAN 650: Seminar in Twentieth-Century Drama. 3 credits.
Study of major dramatists in the generation of 1898 and contemporary theater. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 655: Seminar in Twentieth-Century Prose. 3 credits.
Study of major writer, theme, or movement in novel or essay. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 670: Seminar in Spanish American Prose. 3 credits.
Study of a selected theme, movement, or author in the novel, short story, or essay. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 675: Seminar in Literature and Art. 3 credits.
Comparative analysis of a literary theme or style in relation to other media (painting, architecture, film) for an integral understanding of the arts. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registro Limitaciones:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 680: Seminar in Literature and Society. 3 credits.
Study of a literary topic, a genre, or selected authors in relation to a given economic, social, or political system in Spain or Latin America. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registro Limitaciones:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPAN 685: Seminar in Literature and Ideas. 3 credits.
Study of major ideological-philosophical themes and their artistic expression in literature. Notes: May be repeated for credit when topic is different. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree for a maximum 9 credits.

Registro Limitaciones:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses
SPAN 798: Directed Reading and Research. 3 credits.
Open only to degree students who have completed at least 18 credits. Reading and research on a specific project under the direction of a department member. Oral or written report required. Offered by Modern & Classical Languages (p. 424). May not be repeated for credit.

Registro Limitaciones:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Thesis
Grading:
This course is graded on the Graduate Special scale. (p. 84)

SPAN 799: Thesis. 1-6 credits.
Master's thesis research and writing under direction of faculty committee. Students must register for 3 credits in the first semester of SPAN 799 and maintain continuous enrollment until completion of thesis. Credits are awarded upon completion. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis
Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses
SPAN 800: Studies for the Doctor of Philosophy in Education. 3-6 credits.
Studies designed by student’s discipline director and approved by student's doctoral committee that prepare student for research and writing in area of interest in discipline. Offered by Modern & Classical Languages (p. 424). May be repeated within the degree.

Recommended Prerequisite: Admission to PhD in education program to study in Spanish.

Registration Restrictions:
Enrollment is limited to Graduate level students.

Schedule Type: Research
Grading:
This course is graded on the Graduate Special scale. (p. 84)

Special Education (EDSE)
100 Level Courses
EDSE 115: American Sign Language (ASL) I. 4 credits.
Focuses on introduction of American Sign Language (ASL) and Deaf culture. Teaches basic person-to-person conversational signing. Emphasizes development of expressive and receptive skills. Increases knowledge of ASL vocabulary and the syntax, semantics, and pragmatics of the language. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 116: American Sign Language (ASL) II. 4 credits.
Focuses on expanding basic skills in American Sign Language (ASL) and Deaf culture. Emphasizes development of expressive and receptive skills. Increases knowledge of ASL vocabulary and the syntax, semantics, and pragmatics of the language. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: EDSE 115\(^C\).
Grading:
C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses
EDSE 201: Introduction to Special Education. 3 credits.
Provides a survey of current knowledge on individuals with disabilities within the context of human growth and development across the life span. Includes historical factors, legal aspects, etiology, characteristics, assessment, evidence-based practices, and support services for individuals with disabilities having needs for intervention ranging from mild to severe. Includes the impact of disabilities on academic, social, and emotional performances. Offered by Graduate School of Education (p. 162). Limited to three attempts. Equivalent to EDSE 401.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 203: Disability in American Culture. 3 credits.
Examines disability, past and present, in American culture through changes in historical, political, legal, and societal responses to people with disabilities. Analyzes the disability experience through social and behavioral science perspectives, including diversity, bioethical and human rights conceptualizations/constructs of disability. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 204: Disability in a Global Society. 3 credits.
Examines disability in a global context through political, legal, and societal responses to people with disabilities. Analyzes the global disability experience through social and behavioral science perspectives, including diversity, bioethical and human rights conceptualizations/constructs of disability. Assesses how the growing political, economic, and social gaps that exist between the global north and south impact people with disabilities. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 219: American Sign Language (ASL) III. 4 credits.
Focuses on intermediate level skills in American Sign Language (ASL) and Deaf culture. Increases competencies in person-to-person conversational signing, including expressive and receptive skills, vocabulary, syntax, semantics, and pragmatics. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: EDSE 116\(^C\).
Grading:
C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 241: Characteristics of Students with Disabilities: High-incidence. 3 credits.
Examines the academic, social, and behavioral characteristics of individuals with high-incidence disabilities such as learning disabilities, emotional/behavioral disorders, intellectual disability, autism, and attention deficit disorder. Focuses on etiology, contributing factors, impact on life and family, the challenges of identifying students with disabilities, and the need for intensive instruction, accommodations, and support. Offered by Graduate School of Education (p. 162). Limited to three attempts. Equivalent to EDSE 440.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 251: Classroom Management and Positive Behavior Supports. 3 credits.
Focuses on describing how school and classroom methods are used to establish effective learning environments for individuals with varying degrees of disabilities. Explores classroom and behavior management including technology, social skills, and effective teaching behaviors. Emphasizes developing school and classroom behavior management plans. Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

EDSE 311: Characteristics of Students with Blindness and Visual Impairments. 3 credits.
Provides an overview of the characteristics of and services to persons with blindness and visual impairments, including the impact of blindness and visual impairment on infants’ and children’s growth and development, child and adolescent emotional and social development, and family interaction patterns. Considers the educational, conceptual, psychosocial, and physical implications of a visual impairment. Offered by Graduate School of Education (p. 162). Limited to three attempts. Equivalent to EDSE 411.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 315: American Sign Language (ASL) IV. 3 credits.
Focuses on strengthening expressive and receptive communication in American Sign Language (ASL) through the development of narrative and storytelling skills. Explores the importance of these skills within the Deaf Community. Explores issues of multiculturalism, linguistic code-switching, and language dominance, particularly in relationship to Deaf education. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: EDSE 219C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 341: Language Acquisition and Reading Development. 3 credits.
Examines language and reading skills for typical and atypical students and describes language and reading instruction for students with disabilities who access the general curriculum. Explores emergent literacy skills, sound and symbol relationships, spelling development, phonemic awareness, phonics, vocabulary development, and comprehension. Analyzes informal assessment methods to monitor students’ reading progress. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 351: Technology Integration for Specialized Instruction. 3 credits.
Reviews applications of recent educational and assistive technology for instruction. Evaluates strategies for effective integration of mainstreamed instructional technology to promote student learning, successful implementation of individualized assistive technology to access general education curriculum, and delivery of accessible online and blended instruction to all learners through technology-based innovations and Universal Design for Learning. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 352: Assessment. 3 credits.
Offers knowledge and learning activities related to assessment of students with varying degrees of disabilities. Includes statistical and psychometric concepts in assessment. Addresses norm-referenced, criterion-referenced, curriculum-based, and informal assessment for instructional and placement decisions. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 353: Individualized Behavior Supports. 3 credits.
Focuses on identifying, recording, evaluating, and developing comprehensive plans for changing social and academic behaviors of individuals with disabilities. Emphasizes analyzing the function of individuals’ behaviors and developing responsive behavior intervention plans. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 354: Consultation and Collaboration. 3 credits.
Provides professionals in special education, general education, and related fields with knowledge and skills necessary for collaboration with a wide variety of stakeholders. Emphasizes developing and implementing individualized education programs for individuals with disabilities using a team approach. Demonstrates active listening, group process, and
problem-solving strategies. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 361: Characteristics of Students with Severe Disabilities. 3 credits. Examines the academic, social, medical and behavioral characteristics of individuals with severe disabilities such as intellectual disability, autism, traumatic brain injury, and severe/multiple cognitive, physical and/or sensory disabilities. Focuses on etiology, contributing factors, impact on life and family, the challenges of identifying students with disabilities, and the need for intensive instruction, accommodations, and support. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 362: Communication with Severe Disabilities. 3 credits. Provides an overview of augmentative and alternative communication (AAC) for individuals with severe speech and language impairments. Addresses the knowledge and skills needed to assess the potential AAC user, make team decisions, develop and implement instruction, and evaluate the effects of instruction aimed at motivating, building, and expanding communication, choice-making, and social interaction. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 381: Exploratory Field Experience in Special Education. 3 credits. Introduces students to the role of the special educator in academic and non-academic environments with students across disability areas. Facilitates observation and understanding of the professional world of special educators in K-12 schools, specifically in instruction, behavior management, and data collection. Provides exposure to special education at the transition and community-based levels as well as at the policy and leadership levels. Initiates critical reflection focused on examining special education theory and research in application through practice in school and community-based settings. Includes a 2-hour weekly seminar and a total of 20 field experience hours. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: EDSE 201C.
  C Requires minimum grade of C.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

EDSE 401: Introduction to Special Education. 3 credits. Provides a survey of current knowledge on individuals with disabilities within the context of human growth and development across the life span. Includes historical factors, legislation, etiology, characteristics, needs, educational strategies, assessment, and support services for individuals with disabilities ranging from mild and moderate to severe levels of varying disabilities. Includes the impact of disabilities on academic, social, and emotional performances. Offered by Graduate School of Education (p. 162). Limited to three attempts. Equivalent to EDSE 201.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 402: Classroom Management and Applied Behavior Analysis. 3 credits. Focuses on identifying, recording, evaluating, and changing social and academic behaviors of special and diverse populations. Explores theories of classroom management and various approaches to management, including use of technological advances. Emphasizes developing classroom and individual behavior management plans. Note: Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 403: Language Development and Reading. 3 credits. Identifies literacy skills for typical and atypical students, and describes reading, language, and writing instruction for students with mild disabilities who access the general curriculum. Explores emergent literacy skills, phonemic awareness, vocabulary development, and comprehension. Note: Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDSE 401 and EDSE 440.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 410: Deaf History. 3 credits. Studies the history of the Deaf people in Europe and its influence on the Deaf people in the United States. Explores the Deaf people’s experience as an oppressed minority similar to the experience of many oppressed populations. Applies knowledge to understanding the attitudes toward Deaf people today. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: EDSE 315C.
  C May be taken concurrently.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 411: Characteristics of Students with Visual Impairments. 2 credits. Provides an overview of the characteristics of and services to persons with visual impairments, including the impact of visual impairment on infants’ and children’s growth and development, child and adolescent emotional and social development, and family interaction patterns. Considers the educational, conceptual, psychosocial, and physical implications of a visual impairment. Notes: Course delivered online.
EDSE 417: Teaching Methods for Students with Blindness and Visual Impairments. 3 credits.
Emphasizes methods of teaching compensatory skills, the core curriculum, and technology for use by students who are blind and visually impaired. Addresses curriculum development, adaptations, and teaching methodology for individuals with visual impairments. Provides information on adaptations within various educational programs and adaptation of general education classroom materials and procedures for use with blind and low vision children and youth. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDSE 311, which may be taken concurrently

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 412: Braille Code. 3 credits.
Provides understanding of the literary code of Braille and its implications for educational/literacy programs for students with a visual disability. Enables students to better understand the Braille code and how to teach it to students with a visual disability. Notes: Delivered online. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDSE 311. Concurrent enrollment is also permitted.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 413: Medical and Educational Implications of Blindness and Visual Impairments. 3 credits.
Provides an introduction to anatomy and physiology of the visual system and the educational implications of visual pathology. Covers anatomy of the human eye, normal visual development, pathology of the eye, examination procedures for the identification of visual pathology, and the effects of pathology on visual learning and development. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDSE 311, which may be taken concurrently.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 414: Orientation and Mobility for Students with Blindness and Visual Impairments. 2 credits.
Provides the foundation for understanding the components and essence of orientation and mobility (O&M). Establishes how the need for independent travel in the blind population created the field of O&M. Explores the philosophy and history of orientation and mobility, including cane instruction, dog guides, and methods of travel. Addresses techniques in developing orientation skills and basic mobility instruction. Emphasizes motor and concept skill development. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDSE 311, which may be taken concurrently.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 418: Curriculum and Assessment of Students with Blindness and Visual Impairments. 3 credits.
Provides students with knowledge and understanding of the educational assessment of students with visual impairments and additional disabilities including deaf-blindness. Provides practice assessing and planning educational programs for students with visual impairments. Addresses assessment of technology for students with visual impairments. Examines determination of learning needs and appropriate learning media, relationship of assessment, IEP development, and placement. Notes: Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Recommended Prerequisite: EDSE 311, which may be taken concurrently.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 419: Braille Reading and Writing. 3 credits.
Provides basic instruction on transcription of advanced Braille codes, including music, foreign language, chemistry, computer Braille, and Nemeth code (Braille math code). Introduces techniques for teaching skills in each code. Explores technology tools used to create Braille and tactile materials in addition to other assistive technologies used for instruction in math and science. Notes: Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Required Prerequisites: EDSE 311C and 412C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 420: Deaf Culture. 3 credits.
Studies the cultural practices, ideology, power, identity, and heritage of Deaf people in the United States. Analyzes Deaf community as a part of societal diversity. Emphasizes issues of multiculturalism, linguistic code-switching, and language dominance. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Required Prerequisite: EDSE 410C.
C Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
EDSE 428: Elementary Reading, Curriculum, Strategies for Students Who Access the General Education Curriculum. 3 credits.
Applies research on instructional approaches in elementary curriculum for individuals with disabilities accessing general education curriculum. Includes curriculum and instructional strategies in reading, language arts, mathematics, science, social studies; cognitive strategies in study skills; attention and memory; and peer-mediated instruction. Note: Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 432: Positive Behavior Supports. 3 credits.
Explores concepts and skills needed to design, implement, and evaluate positive behavior support programs, derived from functional assessment, to support the specific needs of students with severe disabilities. Addresses relevant replacement skills; facilitates generalization and maintenance of skills; applies instructional strategies to support behavior, and incorporates individually designed crisis intervention procedures. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 434: Communication and Severe Disabilities. 3 credits.
Introduces professionals to augmentative and alternative communication (AAC) for individuals with severe speech and language impairments. Addresses the knowledge and skills needed to assess the potential AAC user, make team decisions, develop and implement instruction, and evaluate the effects of instruction aimed at motivating, building, and expanding communication, choice-making, and social interaction. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 440: Characteristics of Students with Disabilities Who Access the General Curriculum. 3 credits.
Examines the characteristics of students with mild disabilities. Focuses on etiology, contributing factors, conditions that affect learning, the challenges of identifying students with disabilities, and the need for academic, social, and emotional accommodations and support. Note: School-based field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts. Equivalent to EDSE 241.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 441: Instructional Strategies for Reading and Writing. 3 credits.
Integrates knowledge of language assessments and the components of quality reading instruction to plan well-sequence and explicit instruction for students with disabilities in the general education curriculum. Examines objectives that align with curriculum standards while still providing individualization. Implements and applies reading and writing instruction to support learning in all content areas. Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: EDSE 341 C.
C Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 443: Instructional Strategies for Math. 3 credits.
Integrate foundational knowledge of numeracy acquisition, mathematical concepts, mathematical thinking, mathematics vocabulary, calculation, and problem-solving to plan well-sequenced and explicit math instruction for students with disabilities in the general education curriculum. Examine objectives that align with the general education curriculum Virginia Standards of Learning in mathematics at the elementary, middle, and secondary levels while still providing individualization. Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 445: Clinical Practice and Seminar I: General. 2 credits.
Exposes teacher candidates to K-12 classroom settings inclusive of students with disabilities who access the general curriculum. Examines the professional realities, roles, and responsibilities of special education teachers based upon a foundation of theory and research designed to stimulate critical reflectivity. Engages with individual and/or small groups of students with high-incidence disabilities in the classroom environment. Assists in the planning and implementation of effective assessment, instruction, and behavior management across subject areas. Includes a 2-hour seminar held nine times throughout the semester and a total of 30 field experience hours. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: EDSE 381 C.
C Requires minimum grade of C.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 446: Clinical Practice and Seminar 2: General. 2 credits.
Applies coursework in Special Education-General Curriculum to planning and supervised instruction of students with disabilities who access the general curriculum in K-12 school settings. Engages in reflection to analyze instruction within the clinical experience setting. Includes a 2-hour seminar held seven times throughout the semester and a minimum of 75 hours of fieldwork in a K-12 clinical experience setting. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: EDSE 445 C.
C Requires minimum grade of C.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 447: Medical and Developmental Risk Factors for Children with Disabilities. 3 credits.
Examines the nature and causes of disabling or special health conditions. Covers screening and evaluation techniques, characteristics, and educational implications. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 451: Transition and Self-Determination. 3 credits.
Examines relevant legislation and evidence-based practices related to person-centered transition planning for students with varying disabilities throughout the K-12 system and into adult life. Focuses on effective alternative assessment, coordination of community services, functional academic and social/life skills, stakeholder involvement, employment, and independent living. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 452: Intersectionality and Disability. 3 credits.
Examines disability within a diversity and intersectionality context in K-12 schools. Analyzes how diversity and intersectionality informs the educational experience of individuals with and without disabilities to include race, gender, sexual orientation, socioeconomic status, and home/language and culture. Assesses how cultural competency and intersectionality awareness on the part of educators enhance the school success of all students. Develops educator capacity to implement trauma-sensitive interventions in diverse settings for all students. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Registration Restrictions:
Required Prerequisite: EDSE 381.C.
C Requires minimum grade of C.

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 453: Clinical Practice and Seminar 1: Adapted (Severe Disabilities). 2 credits.
Applies coursework in Special Education-Adapted Curriculum (Severe Disabilities) to planning and supervised instruction of students with severe disabilities who access the adapted curriculum in K-12 school settings. Engages in reflection to analyze instruction within the clinical experience setting. Includes a 2-hour seminar held seven times throughout the semester and a minimum of 75 hours of fieldwork in a K-12 clinical experience setting. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 454: Foundations of Language and Literacy for Individuals with Severe Disabilities. 3 credits.
Examines the complexity of language acquisition and literacy development. Focuses on typical and atypical language development, connections between language and literacy, and diversity of communication styles in families and cultures. Emphasizes first and second language acquisition. Field experience required. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 455: Interdisciplinary Approach for Children with Sensory and Motor Disabilities. 3 credits.
Focuses on adaptive strategies for working with individuals who have sensory needs including physical, visual, auditory, and oral needs. Emphasizes positioning, handling, and adaptive strategies and on understanding how sensory and sensory-motor issues impact individuals in a learning environment. Focuses on understanding the roles of related disciplines in collaborative planning and service delivery. Offered by Graduate School of Education (p. 162). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
EDSE 481: Internship: Professional Services. 12 credits. Applies university coursework in Special Education to individuals with disabilities in a variety of community or school-based settings in supervised internship. Applies coursework, theories, and research to professional service settings. Sites chosen by client/stakeholders after approval of faculty supervisors. Includes a 2-hour seminar held six times throughout the year. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisite: EDSE 381 C.
C Requires minimum grade of C.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDSE 482: Internship: General. 12 credits. Applies university coursework in Special Education-General Curriculum to instruction of students with disabilities who access the general curriculum in two supervised internship settings, including an elementary and secondary school placement. Includes a 2-hour seminar held six times throughout the semester. Note: Prior to registration, students must demonstrate that VDOE-required teacher assessments and First Aid/CPR/AED certification for licensure have been met, and application for internship must be on file by program deadline. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 483: Internship: Adapted (Severe Disabilities). 12 credits. Applies university coursework in Special Education-Adapted Curriculum to instruction of students with severe disabilities who access the adapted curriculum in two supervised internship settings, including an elementary and secondary school placement. Includes a 2-hour seminar held six times throughout the semester. Note: Prior to registration, students must demonstrate that VDOE-required teacher assessments and First Aid/CPR/AED certification for licensure have been met, and application for internship must be on file by program deadline. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisite: EDSE 466 C.
C Requires minimum grade of C.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

EDSE 484: Internship: Blindness and Visual Impairments. 12 credits. Applies, in supervised internship, university coursework in Blindness and Visual Impairments to instruction of children and their families in school settings. Note: Prior to registration students must demonstrate that VDOE-required teacher assessments and First Aid/CPR/AED certification for licensure have been met, and application for internship must be on file by program deadline. Offered by Graduate School of Education (p. 162). Limited to three attempts.

**Registration Restrictions:**
Required Prerequisites: EDSE 413 C, 417 C, 418 C and 419 C.
C Requires minimum grade of C.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**500 Level Courses**

EDSE 501: Introduction to Special Education. 3 credits. Provides a survey of current knowledge on individuals with disabilities within the context of human growth and development across the lifespan. Includes historical factors, legislation, etiology, characteristics, needs, educational strategies, assessment, and support services for individuals with disabilities ranging from mild and moderate to severe levels of varying disabilities. Includes the impact of disabilities on academic, social, and emotional performances. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 502: Classroom Management and Applied Behavior Analysis. 3 credits. Focuses on identifying, recording, evaluating, and changing social and academic behaviors of special and diverse populations. Explores theories of classroom management and various approaches to management including use of technological advances. Emphasizes developing classroom and individual behavior management plans. Note: Field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 503: Language Development and Reading. 3 credits. Identifies literacy skills for typical and atypical students, and describes reading, language, and writing instruction for students with mild disabilities who access the general curriculum. Explores emergent
literacy skills, phonemic awareness, vocabulary development, and comprehension. Note: Field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 511: Characteristics of Students with Visual Impairments. 2 credits.
Provides an overview of the characteristics of and services to persons with visual impairments, including the impact of visual impairment on infants’ and children's growth and development, child and adolescent emotional and social development, and family interaction patterns. Considers the educational, conceptual, psychosocial, and physical implications of a visual impairment. Notes: Course delivered online. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 512: Braille Code. 3 credits.
Provides understanding of the literary code of Braille and its implications for educational/literacy programs for students with a visual disability. Enables students to better understand the Braille code and how to teach it to students with a visual disability. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDSE 511. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 513: Medical and Educational Implications of Visual Impairments. 3 credits.
Provides an introduction to anatomy and physiology of the visual system and the educational implications of visual pathology. Covers anatomy of the human eye, normal visual development, pathology of the eye, examination procedures for the identification of visual pathology, and the effects of pathology on visual learning and development. Field experience is required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDSE 511. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

EDSE 514: Orientation and Mobility for Students with Visual Impairments. 2 credits.
Provides the foundation for understanding the components and essence of orientation and mobility (O&M). Establishes how the need for independent travel in the blind population created the field of O&M. Explores the philosophy and history of orientation and mobility, including cane instruction, dog guides, and methods of travel. Addresses techniques in developing orientation skills and basic mobility instruction. Emphasizes motor and concept skill development. Field experience is required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDSE 511. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

EDSE 515: Orientation and Mobility for Students with Visual Impairments. 2 credits.
Provides the foundation for understanding the components and essence of orientation and mobility (O&M). Establishes how the need for independent travel in the blind population created the field of O&M. Explores the philosophy and history of orientation and mobility, including cane instruction, dog guides, and methods of travel. Addresses techniques in developing orientation skills and basic mobility instruction. Emphasizes motor and concept skill development. Field experience is required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDSE 511. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

EDSE 516: American Sign Language (ASL) I. 4 credits.
Focuses on introduction of American Sign Language (ASL) and Deaf culture. Teaches basic person-to-person conversational signing. Emphasizes development of expressive and receptive skills. Increases knowledge of ASL vocabulary and the syntax, semantics, and pragmatics of the language. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDSE 511. Concurrent enrollment is also permitted.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 516: American Sign Language (ASL) II. 4 credits.**
Focuses on expanding basic skills in American Sign Language (ASL) and Deaf culture. Emphasizes development of expressive and receptive skills. Increases knowledge of ASL vocabulary and the syntax, semantics, and pragmatics of the language. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** EDSE 515\(^C\) or 115\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 517: Computer Applications for Special Populations. 3 credits.**
Explores the applications of computer technology for instructional programs and computer skills used by teachers of special populations. Provides experience with computer technology designed for special populations. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 518: Curriculum and Assessment of Students with Visual Impairments. 3 credits.**
Provides students with knowledge and understanding of the educational assessment of students with visual impairments and additional disabilities including deaf-blindness. Provides practice assessing and planning educational programs for students with visual impairments. Addresses assessment of technology for students with visual impairments. Examines determination of learning needs and appropriate learning media, relationship of assessment, IEP development, and placement. Notes: Field Experience Required. Delivered online. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDSE 511. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 519: American Sign Language (ASL) III. 4 credits.**
Focuses on intermediate level skills in American Sign Language (ASL) and Deaf culture. Increases competencies in person-to-person conversational signing, including expressive and receptive skills, vocabulary, syntax, semantics, and pragmatics. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** EDSE 516\(^C\) or 116\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 531: Transition and Community-Based Instruction. 3 credits.**
Addresses issues in transition for youth with severe disabilities. Covers self-determination, development, and implementation of a transition plan, post-secondary opportunities including education and community-based instruction, and vocational environments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 532: Positive Behavior Supports. 3 credits.**
Focuses on employing concepts and skills to design, implement, and evaluate behavior support programs derived from functional assessment; addressing relevant replacement skills; facilitating generalization and maintenance of skills; and incorporating individually designed crisis
intervention procedures. Field experience is required. Offered by Graduate
School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 533: Curriculum and Assessment in Severe Disabilities.** 3 credits.
Addresses best practices in curriculum and assessment for individuals
with severe disabilities. Covers the design of assessment and evaluation
techniques and procedures for the severe-needs population, including
adaptations and accommodations. Covers IEP formulation and
implementation with linkage to assessment. Note: Field experience
required. Offered by Graduate School of Education (p. 162). May not be
repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 534: Communication and Severe Disabilities.** 3 credits.
Introduces professionals to augmentative and alternative communication
(AAC) for individuals with severe speech and language impairments.
Addresses the knowledge and skills needed to assess the potential
AAC user, make team decisions, develop and implement instruction, and
evaluate the effects of instruction, aimed at motivating, building, and
expanding communication, choice-making, and social interaction. Offered
by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 540: Characteristics of Students with Disabilities who Access the
General Curriculum.** 3 credits.
Examines the characteristics of students with mild disabilities. Focuses
on etiology, contributing factors, conditions that affect learning, the
challenges of identifying students with disabilities, and the need for
academic, social, and emotional accommodations and support. Notes:
Field experience required. Offered by Graduate School of Education
(p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 544: Adapted Instructional Methods and Transition for Secondary
Learners.** 3 credits.
Provides strategies for teaching functional academics and social/life
skills, facilitating the transition to postsecondary environments. Focuses
on all aspects of transition and alternative assessments for secondary
learners with disabilities. Offered by Graduate School of Education
(p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 547: Medical and Developmental Risk Factors for Children with
Disabilities.** 3 credits.
Examines the nature and causes of disabling or special health conditions.
Covers screening and evaluation techniques, characteristics, and
educational implications. Offered by Graduate School of Education
(p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 557: Foundations of Language and Literacy for Diverse Learners.** 3
credits.
Examines the complexity of language acquisition and literacy
development. Focuses on typical and atypical language development,
connections between language and literacy, and diversity of
communication styles in families and cultures. Emphasizes first and second language acquisition. Notes: Field Experience required Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 562: Foundations of Reading Instruction for Students with Specific Learning Disabilities. 3 credits.
Examines the characteristics of students with specific learning disabilities who demonstrate severe deficits in reading and written language. Addresses language development from an anatomical, physiological, and social perspective. Provides essential knowledge in language development. Examines the legislation that addresses the rights of students with disabilities. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 563: Language Structure and Literacy Development for Students with Specific Learning Disabilities. 3 credits.
Examines the components of the English language, including language processing requirements, integrated with the development of literacy skills. Analyzes language and literacy performance and the variability of language learning in students with specific learning disabilities. Explores environmental, social, and cultural factors, including the impact of second language learning and dual-identification. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDSE 562B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 564: Phonology, Phonics, and Fluency for Students with Specific Learning Disabilities. 3 credits.
Evaluates phonology, phonics, and fluency skills of students with specific learning disabilities using formal and informal measures. Designs instruction to meet the needs of students with learning disabilities who have deficits in these areas. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDSE 563B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 565: Vocabulary, Comprehension, and Written Expression for Students with Specific Learning Disabilities. 3 credits.
Evaluates vocabulary, text comprehension, and written expression skills of students with specific learning disabilities using formal and informal measures. Designs instruction to meet the needs of students with learning disabilities who have deficits in these areas. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDSE 564B.
* May be taken concurrently.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 566: Practicum for Specialized Reading Instruction for Students with Specific Learning Disabilities. 3 credits.
Demonstrate competencies for implementing intensive, data-based interventions to students with specific learning disabilities who have severe deficits in reading and writing. Administer and analyze assessments and design interventions for phonics, fluency, word recognition, text comprehension and written expression. Monitor student progress and modify instruction as needed. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDSE 565B.
B- Requires minimum grade of B-

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**EDSE 590: Special Education Research.** 3 credits.
Describes fundamental concepts and practices in educational research in special education. Covers specific applications of educational research methods to problems in special education. Emphasizes review and critique of special education research, and applied classroom research for teachers. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 597: Special Topics in Education.** 1-6 credits.
Provides advanced study on selected topic or emerging issue in Special Education. Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** Admission to program in Graduate School of Education

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 613: Teaching Methods for Students with Visual Impairments.** 3 credits.
Emphasizes methods of teaching compensatory skills, the core curriculum, and technology for use by students who are blind and visually impaired. Addresses curriculum development, adaptations, and teaching methodology for individuals with visual impairments. Provides information on adaptations within various educational programs and adaptation of general education classroom materials and procedures for use with blind and low vision children and youth. Notes: Delivered online. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDSE 511. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 616: Braille Reading and Writing.** 3 credits.
Provides basic instruction on transcription of advanced Braille codes, including music, foreign language, chemistry, computer Braille, and Nemeth code (Braille math code). Introduces techniques for teaching skills in each code. Explores technology tools used to create Braille and tactile materials in addition to other assistive technologies used for instruction in math and science. Notes: Field experience required. Delivered online. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDSE 511 (may be taken concurrently), EDSE 512.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

Focuses on basic principles and procedures of applied behavior analysis; identification of factors that contribute to behavioral problems and improved performance; and procedures that can be used to minimize behavioral problems, improve performance, teach new behaviors, and increase probability of behaviors occurring under appropriate circumstances. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Applied Behavior Analysis Graduate Certificate Program (ABAC).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 620: Supporting the Behavior and Sensory Needs of Individuals with Autism. 3 credits.
Describes the behavior and sensory development of individuals with autism spectrum disorder across their lifespans. Analyzes the principles of behavior management and the evidence and research-based interventions that have been proven to be effective with individuals with autism and sensory needs. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Focuses on basic content of applied behavior analysis. Teaches how to implement behavioral procedures and develop behavioral programs for clients with fundamental behavioral needs. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDSE 619B.

B= Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 623: Applied Behavior Analysis: Assessments and Interventions. 3 credits.
Expands on basic content of applied behavior analysis and teaches how to implement behavioral procedures and develop behavioral programs for clients with fundamental behavioral needs. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDSE 619B.

B= Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 624: Applied Behavior Analysis: Applications. 3 credits.
Develops capability to deal with more complex behavioral situations, enabling ability to relate to more sophisticated professional issues and environments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDSE 619B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 625: Applied Behavior Analysis: Verbal Behavior. 3 credits.
Expands students’ abilities to deal with more complex behavioral situations and enables students to relate to more sophisticated professional issues and environments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Required Prerequisite: EDSE 619B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 627: Assessment. 3 credits.
Offers knowledge and experiential learning activities related to assessment of students with mild disabilities. Includes statistical and psychometric concepts in assessment. Addresses norm-referenced, criterion-referenced, curriculum-based, and informal assessment for instructional and placement decisions. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 628: Elementary Reading, Curriculum, Strategies for Students Who Access the General Education Curriculum.** 3 credits.
Applies research on instructional approaches in elementary curriculum for individuals with disabilities accessing general education curriculum. Includes curriculum and instructional strategies in reading, language arts, mathematics, science, social studies; cognitive strategies in study skills; attention and memory; and peer-mediated instruction. Note: Field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 629: Secondary Curriculum and Strategies for Students with Disabilities who Access the General Curriculum.** 3 credits.
Applies research on teacher effectiveness, accountability, and instructional approaches at the secondary level for individuals with mild disabilities. Includes instructional methods necessary for teaching reading, writing, math, and other content areas across the curriculum. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 634: Characteristics of Individuals with Autism.** 3 credits.
Describes the varying characteristics of individuals with autism spectrum disorders across their lifespans including, (a) diagnosis, (b) early childhood, (c) school-age, (d) transition, (e) employment, and (f) aging. Examines definitions, eligibility criteria, incidence rates, and etiology of autism spectrum disorders. Analyzes perspectives from students, families, educational, community, and career personnel. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 635: Interventions for Individuals with Autism.** 3 credits.
Analyzes evidence and research-based interventions for individuals with autism in a variety of domains across their lifespans including academic, communication, social, and behavioral. Evaluates methods for prioritizing intervention needs for individuals with autism across their lifespans, developing appropriate interventions to address those needs, and measuring the impact of interventions in a variety of service delivery models. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** EDSE 634. Concurrent enrollment is also permitted.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 636: Supporting Communication and Literacy for Individuals with Autism.** 3 credits.
Surveys the characteristics of communication and literacy, as well as the design and implementation of communication systems for individuals with autism spectrum disorder across their lifespans. Explains methods for assessment, identification of priorities, and monitoring progress of communication and literacy instruction in order to improve behavior, academic skills, and social interactions in various environments. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 637: Autism Across the Lifespan: Collaboration with Critical Partners.** 3 credits.
Examines characteristics, milestones, critical issues, and areas of need for individuals with autism spectrum disorder across their lifespans. Prioritizes key features of effective collaboration and partnership. Utilizes a strengths-based problem solving perspective to frame collaboration and partnership for individuals with autism spectrum disorder across their lifespans and simulates partnership practices with a variety of stakeholders across the lifespan of an individual with autism spectrum disorder. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 661: Curriculum and Methods: Severe Disabilities.** 3 credits.
Focuses on current best practices in curriculum, and methods for students with severe disabilities, including specific strategies for teaching students with severe disabilities, general strategies for working with heterogeneous groups of students in inclusive settings, and methods for adapting the general education curriculum to include students with severe disabilities. Note: Field experience required. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 662: Consultation and Collaboration.** 3 credits.
Provides professionals in special education, regular education, and related fields with knowledge and communication skills necessary for collaborative consultation and technical assistance to other educators and service providers. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Recommended Prerequisite:** Teaching licensure or enrollment in a graduate degree program in education.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 663: Collaborative Teamwork to Support Students with Significant Disabilities.** 3 credits.
Focuses on models of teamwork, group decision making, team process, leadership and communication and how they influence services for individuals with significant disabilities and their families. Provides an understanding of collaborative structures and demonstrates knowledge of skills and strategies to maintain effective relationships with a variety of stakeholders in collaborative settings. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 664: Ethical and Professional Conduct for Behavior Analysis.** 3 credits.
Provides a basis in Virginia Behavior Analyst Licensure law, the Behavior Analyst Certification Board Guidelines for Responsible Conduct and Disciplinary Standards, and professional conduct consistent with the practice of applied behavior analysis. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: EDSE 619B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 669: Interdisciplinary Approach for Children with Sensory and Motor Disabilities.** 3 credits.
Emphasizes positioning, handling, and adaptive strategies. Focuses on understanding the roles of related disciplines in collaborative planning and service delivery. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Graduate or Senior Plus.

Enrollment is limited to Graduate or Undergraduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**EDSE 701: Legal Issues and Special Populations.** 3 credits.
Studies the impact of legislation and litigation on the education of special populations emphasizing IDEA and Section 504. Covers emerging trends in special education based on interpretation of landmark court cases related to disability, legal updates on policies and procedures for exceptional learners, and discussion of the guiding principles of special education law when addressing the needs of special populations. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**700 Level Courses**

**EDSE 701: Legal Issues and Special Populations.** 3 credits.
Studies the impact of legislation and litigation on the education of special populations emphasizing IDEA and Section 504. Covers emerging trends in special education based on interpretation of landmark court cases related to disability, legal updates on policies and procedures for exceptional learners, and discussion of the guiding principles of special education law when addressing the needs of special populations. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 702: Managing Resources for Special Education Programs. 3 credits.
Examines development and delivery of specialized programs for exceptional learners. Covers implementation of Individualized Education Plans via Universal Design, financial and human resource allocation and management, effective supervision and evaluation, and student outcome documentation. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 703: Creating a Collaborative Culture. 3 credits.
Provides leaders in school settings with an opportunity to gain the skills needed to facilitate collaborative environments supportive of all learners. Discusses the impact of diversity on educational settings, developing a vision effective communication teaming and co-teaching techniques, family professional partnerships, implementing schoolwide change initiatives, alternative dispute resolution, and maintaining a positive school climate. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 743: Leadership in Special Education Administration. 3 credits.
Examines leadership issues and applies them to the administration of special education programs. Explores current challenges in the delivery of services for exceptional children through case studies and projects. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 744: Current Issues in Special Education. 3 credits.
Helps students develop an understanding of the role of convergent research evidence in addressing current issues in special education practice and policy. Familiarizes students with current issues in special education and the group experimental, single subject, and qualitative research designs used to address these current issues. Students evaluate research studies in terms of their methodological strengths and weaknesses and their part in providing convergent bodies of evidence that can be used for defining practice and policy. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDSE 783: Internship: Special Education in General Curriculum. 3-6 credits.
Applies, in supervised internships, university course work in General Curriculum to instruction of children and their families in school settings. Notes: Demonstration that RVE, VCLA, Praxis Entry, and other program-specific requirements have been met; application for internship on file by program deadline. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to students with a major, minor, or concentration in General Curriculum (K-12) or Students W/Dis Access Gen Curr.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Education Human Development college.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDSE 784: Internship: Adapted Curriculum. 3-6 credits.
Applies, in supervised internships, university course work in Adapted Curriculum to instruction of children and their families in school settings. Notes: Demonstration that VCLA, Praxis Entry, and other program-specific requirements have been met; application for internship on file by program deadline. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 6 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Students W/Dis Access Adp Curr.

Enrollment is limited to Graduate or Non-Degree level students.

Enrollment limited to students in a Graduate Certificate degree.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDSE 785: Internship: Visual Impairment. 2-6 credits.
Applies, in supervised internships, university course work in Visual Impairment to instruction of children and their families in school settings. Notes: Passing scores on Praxis Entry requirement; demonstration that reading content and other program specific requirements have been met; application for internship on file by program deadline. Offered by Graduate School of Education (p. 162). May be repeated within the term for a maximum 6 credits.
Recommended Prerequisite: EDSE 411 or 511; EDSE 412 or 512; EDSE 513.

Registration Restrictions:
Enrollment is limited to students with a major in Visual Impairments Lic PK-12.

Enrollment is limited to Graduate or Non-Degree level students.

Enrollment limited to students in a Graduate Certificate degree.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDSE 794: Special Topics. 1-6 credits.
Advanced study of selected topics in education for students preparing for doctoral studies or who have been admitted to the PhD program in education. Offered by Graduate School of Education (p. 162). May be repeated within the degree.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 795: Standard Applied Behavior Analysis Practicum. 3 credits.
Meets standard practicum supervision requirements by the BACB to provide hands-on experience designing, implementing, and evaluating behavior analytic procedures under the supervision of a Board Certified Behavior Analyst. Notes: This Applied Behavior Analysis Practicum follows the experience guidelines of the Behavior Analysis Certification Board (www.BACB.com) Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: EDSE 619 or PSYC 619 or permission by the instructor

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDSE 799: Intensive Applied Behavior Analysis Practicum. 6 credits.
Meets intensive practicum supervision requirements by the BACB to provide hands-on experience designing, implementing, and evaluating behavior analytic procedures under the supervision of a Board Certified Behavior Analyst. Notes: This Applied Behavior Analysis Practicum follows the experience guidelines of the Behavior Analysis Certification Board (www.BACB.com). Offered by Graduate School of Education (p. 162). May be repeated within the degree for a maximum 18 credits.

Recommended Prerequisite: EDSE 619 or PSYC 619 or permission of instructor.

Recommended Prerequisite: EDSE 619 or PSYC 619 or permission of the instructor.

Recommended Prerequisite: EDSE 411 or 511; EDSE 412 or 512; EDSE 513.

Registration Restrictions:
Enrollment is limited to students with a major in Visual Impairments Lic PK-12.

Enrollment is limited to Graduate or Non-Degree level students.

Enrollment limited to students in a Graduate Certificate degree.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

EDSE 841: Intervention Research in Special Education. 3 credits.
Provides advanced graduate students with opportunities for in-depth study, analysis, and discussion of original intervention research in special education. Emphasizes analyzing research methodology, coding original intervention research, analyzing results, synthesizing findings, formulating future research questions relevant to individuals with disabilities, and gaining an understanding of the submission process for conferences and publications. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 842: Application of Research Standards for Individuals with Disabilities. 3 credits.
Provides knowledge and skills in the application of research standards across different methods for conducting survey research, single-subject, experimental and correlational research, mixed methods, and qualitative research. Emphasizes application to disability-related research across different contexts. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 843: Leading Change in Special Education and Disability Policy. 3 credits.
Examines leadership issues among varied stakeholders within the special education field including leaders in PK12, higher education, government agencies, and special interest groups. Explores current challenges and opportunities in the effort to support and promote appropriate services for individuals with disabilities through case studies and projects. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment limited to students in a Doctor of Philosophy degree.

Schedule Type: Seminar

Grading:
EDSE 844: Current Issues in Special Education. 3 credits.
Develops understanding of the role of convergent research evidence in addressing current issues in special education practice and policy. Describes current issues in special education and the group experimental, single subject, and qualitative research designs used to address these current issues. Students evaluate research studies in terms of methodological strengths and weaknesses, and their part in providing convergent bodies of evidence that can be used for defining practice and policy. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 845: Personnel Preparation Programs in Special Education. 3 credits.
Provides an in-depth study, analysis, and discussion of personnel preparation programs in special education including: scope and sequence of teacher preparation programs as they align with state and national teacher licensure standards, bodies of accreditation, syllabi development, delivery models, and frameworks for curriculum design; teacher evaluation; and how policies, research, and issues of accountability can transform teacher preparation programs. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 846: Assessment, Evaluation, and Instrumentation in Special Education Research. 3 credits.
Provides in-depth study, analysis and discussion of the past, present and future directions of assessment, evaluation, and instrumentation research in special education. Emphasizes reliability and validity of the research instruments, evaluating research methodology, analyzing results, synthesizing findings with respect to present assessment and evaluation policies; formulating future research questions relevant to assessment and evaluation of individuals with disabilities. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 847: Problem Solving in Contemporary Initiatives in Special Education. 3 credits.
Addresses contemporary initiatives in special education: those introductory and leading actions intended to implement positive change, that can be promoted by federal agencies, professional or advocacy organizations. Focuses on understanding of contemporary special education initiatives through evaluation and analysis. Background, relevant legislative history, existing empirical evidence, and designing future research addressing contemporary initiatives will be studied and discussed. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Education.

Enrollment is limited to Graduate level students.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

EDSE 885: Writing Grants. 3 credits.
Focuses on identification of funding sources, description of grant components, and development of grant budgets. Includes independent writing of an entire small grant, a significant portion of a large grant, and participation in grant peer-review process. Offered by Graduate School of Education (p. 162). May not be repeated for credit.

Recommended Prerequisite: EDRS 811 or EDRS 812.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Sport Management (SPMT)

100 Level Courses

SPMT 100: Current Events in Sport Business. 1 credit.
Engages students in a discussion about recent developments in the sport industry, using the Sport Business Journal to stimulate the discussion as well as provide the student with current information about this rapidly changing industry. There will be two field trips conducted as part of this class. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 110: Basketball Officiating. 1 credit.
Teaches the fundamentals of officiating basketball including a thorough discussion of each of the rules as well as instruction of two person mechanics. Provides opportunity to become a certified Virginia High School League (VHSL) official. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
SPMT 111: Football Officiating. 1 credit.
Teaches the fundamentals of officiating football including a thorough
discussion of each of the rules as well as instruction of crew mechanics.
Provides opportunity of becoming a certified Virginia High School League
(VHSL) official. Offered by Recreation, Health & Tourism (p. 221). Limited
to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 112: Soccer Officiating. 1 credit.
Teaches the fundamentals of officiating soccer including a thorough
discussion of each of the rules as well as instruction of crew mechanics.
Provides opportunity of becoming a certified Virginia High School League
(VHSL) official. Offered by Recreation, Health & Tourism (p. 221). Limited
to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses
SPMT 201: Introduction to Sport Management. 3 credits.
Introduces sport management profession. Primary focus is on sport
industry, including professional sport entertainment, amateur sport
entertainment, for-profit sport participation, nonprofit sport participation,
sporting goods, and sport services. Notes: Open to non majors. Offered
by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 202: Mental Skills for Sport Performance. 2 credits.
Introduces mental skills training for sport performance used within the
field of sport and exercise psychology. Demonstrates mental practice
techniques to be practiced and assessed. Offered by Recreation, Health &
Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 210: Foundations of Sport Coaching. 3 credits.
Introduction to the scientific bases for coaching sports and the process
of coaching athletes. It includes the development of an individual
coaching philosophy and the application of scientific training in the
psychological, physiological, pedagogical and managerial bases of sport
coaching. Offered by Recreation, Health & Tourism (p. 221). Limited to
three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 241: Practicum. 3 credits.
Paid or voluntary experience in sport industry setting. Work sites chosen
by students after receiving approval of faculty supervisors. Offered by
Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: SPMT 201D.  
D Requires minimum grade of D.
Enrollment is limited to students with a concentration in Sport
Management.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses
SPMT 302: Philosophical and Ethical Dimensions of Sport. 3 credits.
Investigates moral issues in sport and judgments about right and wrong
behavior among athletes, coaches, spectators, and others. Offered by
Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 304: Sport, Culture, and Society. 3 credits.
Analyzes sport from educational, political, economic, and cultural
perspectives. Offered by Recreation, Health & Tourism (p. 221). Limited to
three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 318: Diversity and Inclusion Issues in Sport. 3 credits.
Focuses on sport participant and employee diversity and inclusive
practices; and how differences based on religion disability,
socioeconomic class, sex, gender, sexual orientation and racial
hierarchies impacts historical and current sport experiences and
outcomes. Offered by Recreation, Health & Tourism (p. 221). Limited to
three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 320: Psychology of Sport. 3 credits.
Psychological theories of personality, motivation, and anxiety explored
in sport environment. Examines social-psychological research on
audience effects, team cohesion, leadership, and fan behavior. Offered by
Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SPMT 321: America Through Baseball. 3 credits.
This course is designed for the student to gain an understanding of the
past and present role of baseball in American culture. The course focuses
on the development of professional baseball over the past 160 years and
the ways in which the history of America as a nation and culture can be
"read" through baseball. Offered by Recreation, Health & Tourism (p. 221).
Limited to three attempts.
**400 Level Courses**

**SPMT 405: Sport Venues and Events.** 3 credits.
Principles and techniques of event planning and operations in sport facilities and venues. Emphasizes principles and concepts of organization and administration including communication, personnel management, management of physical resources, and risk management. Examines a variety of sport events and venues such as indoor stadiums, athletic field complexes, and managing recreation and intramural activities. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**SPMT 412: Sport Marketing and Sales.** 3 credits.
Investigates principles and processes in sport marketing and finance. Focuses on research and development, sport promotion, sport sponsorship, advertising, merchandising, and distribution of sporting goods. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**SPMT 420: Economics and Finance in the Sport Industry.** 3 credits.
Examines the principles of economics, budgeting, and finance as it applies to the sport industry. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**SPMT 425: Sport Analytics.** 3 credits.
Discusses theories and concepts in sport analytics. Topics cover player performance, player management, sports data strategies, team management, and game day operations and strategies. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**SPMT 430: Sport Communication.** 3 credits.
Provides a senior-level exploration of the role of sport communication in contemporary cultures. Readings and discussions address questions about how communication about/in sports highlights the importance of sports, the cultural identities of those who engage in sport communication, and the pervasiveness of sport communication practices.
in industry. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** General COMM course.

**Registration Restrictions:**
**Required Prerequisite:** SPMT 201\(^D\).
\(^D\) Requires minimum grade of D.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPMT 440: Global Perspectives in Sport.** 3 credits.
An interdisciplinary examination of sport as a global phenomenon. Historical, cultural, economic, and governance perspectives are considered. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** 60 hours.

**Registration Restrictions:**
**Required Prerequisite:** SPMT 201\(^D\).
\(^D\) Requires minimum grade of D.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPMT 455: Governance and Policy in Sport Organizations.** 3 credits.
Examines sport organizations focused on both professional and amateur governance structures and processes. The study of policy in educational, nonprofit, and professional sport venues is also addressed. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** Completion of 60 hours.

**Registration Restrictions:**
**Required Prerequisite:** SPMT 201\(^D\).
\(^D\) Requires minimum grade of D.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPMT 462: Sport Business Law.** 3 credits.
Students in this course will receive instruction in the major areas of the law that impacts the sport industry. Students will also see how knowledge of sport law can make them better sport managers. There will be an introduction to the legal system in the United States and then we will see how the law has shaped the management of sport organizations and the playing and staging of the games. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** 60 credits.

**Registration Restrictions:**
**Required Prerequisite:** SPMT 201\(^D\).
\(^D\) Requires minimum grade of D.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPMT 470: Strategic Management and Leadership in Sport Organizations.** 3 credits.
Provides a foundation in organizational studies. It addresses the theoretical underpinnings and applications of leadership. It examines strategic planning processes and management within sport organizations. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** 60 hours.

**Registration Restrictions:**
**Required Prerequisite:** SPMT 201\(^D\).
\(^D\) Requires minimum grade of D.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPMT 475: Sport Management Professional Development Seminar.** 3 credits.
This is a seminar format in which students synthesize and apply theories, concepts, and practices in the leadership and management of sport organizations. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Recommended Prerequisite:** 75 hours.

**Registration Restrictions:**
**Required Prerequisite:** SPMT 241\(^D\).
\(^D\) Requires minimum grade of D.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPMT 480: Special Topics in Sport Management.** 3 credits.
Selected topics reflecting interest in specialized areas of sport management announced in advance. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SPMT 490: Internship.** 12 credits.
Paid or voluntary work experience in sport industry settings. Requires minimum period of 10 to 12 weeks of full-time employment. Applies course work, theories, and research to work settings. Work sites chosen by students after approval of faculty supervisors. Includes meetings and assignments before and during the internship. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

**Mason Core:** Capstone (p. 142)

**Recommended Prerequisite:** SPMT 475 and completion of 90 credits.

**Registration Restrictions:**
**Required Prerequisite:** SPMT 241\(^C\).
Requires minimum grade of C.

Enrollment is limited to students with a concentration in Sport Management.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

SPMT 499: Independent Study. 1-3 credits.
Faculty-directed independent study of approved topics in sport management. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

SPMT 551: Sport in the Global Marketplace. 3 credits.
Explores sport business internationally including the production and consumption of professional and Olympic-linked sports and the impact of globalization on sport. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPMT 555: The Australian Model of Sport. 3 credits.
Examines the Australian model of sport which has been adopted in many countries. Analyzes government sport policy and the organization and administration of Australian professional sports. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: SPMT 551.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPMT 611: Sport Marketing and Sales. 3 credits.
Examines principles and processes in sport marketing. Focuses on research and development, sport promotion, sport sponsorship, advertising, merchandising, and distribution of sporting goods. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPMT 612: Economics and Financial Management in the Sport Industry. 3 credits.
Examines principles of economics, budgeting, and finance as they apply to the sport industry. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPMT 613: Strategic Leadership in Sport Organizations. 3 credits.
Examines the theoretical underpinnings and effective strategic processes of leadership in sport organizations. Leader behaviors, characteristics, situational influences, and the cognitive dimensions of leadership will be explored within the organizational context. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.
**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPMT 614: Legal Issues in Sport.** 3 credits.
Examines legal issues as they apply to the sports industry. Course content includes, but is not limited to: tort law, risk management procedures, product liability, constitutional/contract/administrative/statutory law, crowd control/security, personal/professional values, and situational analysis. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPMT 620: Ethical Issues in Global Sport.** 3 credits.
Investigates moral issues in sport, and judgments about right and wrong behavior among organizations, athletes, coaches, spectators, and others at the global level. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SPMT 631: Theoretical Models of Sport Coaching.** 3 credits.
Examines the scientific bases for coaching athletes. Emphasizes philosophical underpinnings and theoretical foundations in the psychological, physiological, pedagogical, and managerial bases of sport coaching. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

**Recommended Prerequisite:** SPMT 551.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SPMT 652: Governance and Policy in International Sport. 3 credits.
Explores sport governance and policy in the international context with focus on international federations, professional leagues and comparative analyses of governmental sporting policies. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: SPMT 551.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Sports and Recreation Studies (SRST)

200 Level Courses

SRST 200: History of Sport and Leisure in America. 3 credits.
Traces the history of sport and leisure in America. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

300 Level Courses

SRST 360: Sport Based Youth Development. 3 credits.
An interdisciplinary examination of current trends and issues in youth sport, with a focus on non-school based community programs. Emphasis is placed on the structural characteristics of sport and physical activity programs as they pertain to proper development of children and adolescents. Offered by Recreation, Health & Tourism (p. 221). Limited to two attempts. Equivalent to PHED 360.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

SRST 450: Research Methods. 3 credits.
Covers the development of empirical research designs for both practical and theoretical problems in health, fitness, and recreation resources management. Includes literature review of hypothesized relationships, and formulation of research proposals. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: 60 credits.

Registration Restrictions:
Required Prerequisites: STAT 250\textsuperscript{C}, DESC 210\textsuperscript{C}, OM 210\textsuperscript{C} or IT 250\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

SRST 595: Thesis Preparation. 2 credits.
Provides a basic overview and working knowledge of the procedures to be used towards completion of the thesis. With competencies gained in previous sport and recreation studies courses, the student will begin to form the criteria, considered evidence, and judgment towards a research topic for SRST 799. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

SRST 598: Special Topics. 1-6 credits.
Focuses on projects related to sport and/or recreation studies. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SRST 599: Independent Study in Sport and Recreation Studies. 1-3 credits.
Studies problem area in sport and recreation studies research, theory, or practice under direction of faculty member. Notes: Students engage in one-on-one or seminar independent study with an SRST faculty member. The faculty member may be the student’s thesis or project supervisor. While SRST 599 is repeatable, 3 credit hours must be designated for Preparation of Thesis or Project Proposal. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 3 credits.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)
600 Level Courses

SRST 606: Foundations of Sport and Recreation Studies. 3 credits.
Examines the historical development of the Sport and Recreation Studies fields. Explores the interconnection between these phenomena in the context of the social, cultural and economic forces shaping American and global societies. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to English Language, Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SRST 623: Research Design and Statistical Reasoning. 3 credits.
Introduces basic principles of scientific and scholarly inquiry in Sport and Recreation Studies. Explores the logic and practice of methods and techniques employed in research related to sport and recreation. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SRST 796: Seminar in Sport and Recreation Studies. 1 credit.
Scholarly forum for the presentation and discussion of contemporary topics in sport and recreation studies. Graduate students, faculty, and visiting scholars/practitioners share ongoing research and practical applications. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Recommended Prerequisite: All other coursework with the exception of concurrent capstone.

Schedule Type: Seminar

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

SRST 798: Master's Project/Internship. 1-6 credits.
Offers capstone experience to enable students to demonstrate their integrative knowledge and skills accrued through study in their concentration area within Sport and Recreation Studies. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

Recommended Corequisite: SRST 796.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

SRST 799: Master's Thesis. 1-6 credits.
Explores sport and recreation problem using appropriate research methodology and under supervision of graduate faculty member. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:

Recommended Pre-requisite: SRST 623B.
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Statistics (STAT)

200 Level Courses

STAT 250: Introductory Statistics I. 3 credits.
Elementary introduction to statistics. Topics include descriptive statistics, probability, and estimation and hypothesis testing for means and proportions. Statistical software used for assignments. Offered by Statistics (p. 1136). Limited to three attempts.

Mason Core: Quantitative Reasoning (p. 142)

Recommended Prerequisite: High school algebra.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 260: Introduction to Statistical Practice I. 3 credits.
Data-oriented introduction to fundamental concepts and methods of applied statistics. Topics include: exploratory data analysis; sampling and principles of experimental design; sampling distributions; confidence intervals and tests for one and two sample means and proportions; analysis of contingency tables; simple linear regression; and correlation. Extensive use of statistical software. Intended primarily for students in the Statistics Bachelor's program. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:

Required Prerequisites: MATH 113 C, 115 C or 124 C.

May be taken concurrently.
300 Level Courses

STAT 334: Introduction to Probability Models and Simulation. 3 credits.
Introduction to basic probability and principles of simulation. Emphasis is placed on formulation of models and simulation applications to statistical methodology. Topics include: basic probability rules, counting methods, discrete and continuous probability spaces, independence, conditional probability, expectation, variance, and limit theorems. Distributions covered include the binomial, hypergeometric, Poisson, normal, Gamma, Beta, multinomial, and bivariate normal. Intended primarily for students in the Statistics Bachelor’s program. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: STAT 260\(^C\) and (MATH 114\(^C\) or 116\(^C\)) and STAT 362\(^C\).
\(^C\) May be taken concurrently.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 344: Probability and Statistics for Engineers and Scientists I. 3 credits.
Introduction to probability and statistics with applications to computer science, engineering, operations research, and information technology. Basic concepts of probability, random variables and expectation, Bayes rule, bivariate distributions, sums of independent random variables, correlation and least squares estimation, central limit theorem, sampling distributions, confidence interval construction, and hypothesis testing for a single sample and two samples. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MATH 114\(^C\) or 116\(^C\)).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 346: Probability for Engineers. 3 credits.
Introduction to probability with applications to electrical and computer engineering, operations research, information technology, and economics. Basic concepts of probability, conditional probability, random variables and moments, specific probability distributions, multivariate distributions, moment-generating functions, limit theorems, and sampling distributions. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (MATH 213\(^C\) or 215\(^C\)).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 350: Introductory Statistics II. 3 credits.
Further examination of statistics and data analysis with an emphasis on applications. Inference for comparing multiple samples, experimental design, analysis of variance and post-hoc tests. Simple linear, multiple and logistic regression. Analysis of contingency tables and categorical data. A statistical computer package is used for data analysis. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: STAT 250\(^C\) or 260\(^C\).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 354: Probability and Statistics for Engineers and Scientists II. 3 credits.
Multivariate probability distributions, variable transformations, properties of estimators, inference on means, variances, and proportions for two samples, contingency tables, goodness-of-fit test, nonparametric tests, simple linear regression, multiple linear regression, logistic regression, ANOVA, basic experimental design, basic resampling methods such as the bootstrap. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: STAT 334\(^C\) or 344\(^C\) or (STAT 346\(^C\) and 362\(^C\)).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 356: Statistical Theory. 3 credits.
Introduction to the mathematical theory of statistical inference, emphasizing inference for standard parametric families of distributions. Topics include: properties of estimators; Bayes and maximum likelihood estimation; sufficient statistics; properties of test of hypotheses; most powerful and likelihood-ratio tests; and distribution theory for common statistics based on normal distributions. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: STAT 346\(^C\) or MATH 351\(^C\).
\(^C\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 360: Introduction to Statistical Practice II.** 3 credits.
Continued study of the process, concepts, and methods of statistical investigations with the communication of statistical results being emphasized. Topics in the course will include: chi-square procedures, an introduction to the design and analysis of experiments, ANOVA, simple linear and multiple regression, nonparametric methods and basic resampling methods such as bootstrap. Statistical software will be used extensively throughout the course. Offered by Statistics (p. 1136). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (STAT 250\* or 260\*) and (MATH 114\* or 116\*).
*C Requires minimum grade of C.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 362: Introduction to Computer Statistical Packages.** 3 credits.
Use of computer packages in statistical analysis of data. Topics include data entry, checking, and manipulation, and use of computer statistical packages for graphical procedures, basic descriptive and inferential procedures, and regression. Offered by Statistics (p. 1136). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: STAT 250\*, 260\*, BUS 310\* or STAT 344\*.
*C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**STAT 455: Experimental Design.** 3 credits.
Introduces problems and techniques inherent in design of experiments, which refers to planning an experiment so that collected data can be analyzed by statistical methods. Covers the two aspects to any experimental problem: the design itself and the analysis of the resulting data. Examples from numerous disciplines in the sciences and the humanities are discussed. Data analysis is emphasized. Offered by Statistics (p. 1136). Limited to two attempts.

**Recommended Corequisite:** STAT 362

**Registration Restrictions:**
Required Prerequisites: STAT 350\*, 354\* or 360\*.
*C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 456: Applied Regression Analysis.** 3 credits.
Introduces statistical modeling with a focus on regression. Topics include: Correlation, simple and multiple regression models, model fitting, variable selection, diagnostic tools, model validation, inference for regression parameters, and matrix forms for multiple regression. Additional topics covered include logistic regression and time series analysis with a focus on smoothing techniques and decomposition. A statistical software package is used extensively throughout the course. Offered by Statistics (p. 1136). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: STAT 350\*, 354\* or 360\*.
*C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 460: Introduction to Biostatistics.** 3 credits.
Focuses on biostatistical aspects of design and analysis of biomedical studies, including epidemiologic observational studies and randomized clinical trials. Topics include randomization principle, confounding, ethics in human experimentation, methods of randomization, stratification, primary outcome analyses, covariate-adjusted analyses, epidemiologic measures, and sample size and power computation. Offered by Statistics (p. 1136). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (STAT 350\*, 354\* or 360\*) and (STAT 362\*).
*M May be taken concurrently.
*C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 462: Applied Multivariate Statistics.** 3 credits.
Introduces a variety of multivariate statistical methods as aids to analyzing and interpreting large data sets. These methods will have general applications across a wide range of disciplines. Topics include: principal components analysis, cluster analysis, discriminant analysis, multi-dimensional scaling, correspondence analysis, and canonical correlation analysis. Extensive use of statistical software. Offered by Statistics (p. 1136). Limited to two attempts.

**Recommended Corequisite:** STAT 362

**Registration Restrictions:**
Required Prerequisites: STAT 350\*, 354\* or 360\*.
*C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 463: Introduction to Exploratory Data Analysis.** 3 credits.
Features statistical graphics, maps and simple models used to bring out patterns in data. Introduces statistical software and addresses data access and import. Presents exploratory strategies motivating data transformations. Stresses the cognitive foundations of good graphics.
Graphics include dot plots, box plots, Q-Q plots, parallel coordinate plots, scatterplot matrices and linked views. Exploration includes use of dynamic graphics. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: STAT 350C, 354C, 360C or BUS 310C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 465: Nonparametric Statistics and Categorical Data Analysis. 3 credits.
Introduction to nonparametric methods and categorical data analysis. Topics include: tests for one-sample, two-related samples, and two independent samples; concepts of nonparametric ANOVA; tests for proportions; chi-squared tests, log-linear models, and contingency tables; goodness-of-fit tests; correlation and association analysis; nonparametric regression including logistic and Poisson regression; and bootstrapping, jackknifing, and cross-validation. Notes: Students may not receive credit for both STAT 465 and STAT 525. Offered by Statistics (p. 1136). Limited to two attempts.

Recommended Corequisite: STAT 362

Registration Restrictions:
Required Prerequisites: STAT 350C, 354C or 360C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 472: Introduction to Statistical Learning. 3 credits.

Recommended Corequisite: STAT 362

Registration Restrictions:
Required Prerequisite: STAT 456C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 474: Introduction to Survey Sampling. 3 credits.
Introduction to design and analysis of sample surveys. Sample designs include simple random sampling; systematic sampling; and stratified, cluster, and multistage sampling. Analytical methods include sample size determination, ratio and regression estimation, imputation for missing data, and nonsampling error adjustment. Practical problems encountered in conducting a survey are discussed, such as questionnaire design. Methods applied to case studies of actual surveys. Class project may be required. Notes: Recommended for students of decision, information, social sciences, and mathematics. Offered by Statistics (p. 1136). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (STAT 350C, 354C or 360C) and STAT 362C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 489: Pre-Capstone Professional Development. 3 credits.
Develops skills in the areas of technical writing and oral communication. Students will develop a historical and ethical appreciation of the field of statistics as well as connect methods from their undergraduate coursework to solve problems. Students will work in small groups to develop a project proposal for STAT 490. Offered by Statistics (p. 1136). Limited to two attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisites: (STAT 354C or 360C) and STAT 362C and ENGH 302C and (COMM 100C or 101C).
C Requires minimum grade of C.

Enrollment limited to students with a class of Senior.

Enrollment is limited to students with a major in Statistics.

Enrollment limited to students in a Bachelor of Science degree.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

STAT 490: Capstone in Statistics. 3 credits.
Students will synthesize methods and ideas acquired in their undergraduate courses by working in small groups on a project and presenting their findings in a written report and an oral presentation. Offered by Statistics (p. 1136). Limited to two attempts.

Mason Core: Capstone (p. 142)

Registration Restrictions:
Required Prerequisite: STAT 489C.
C Requires minimum grade of C.

Enrollment is limited to students with a major in Statistics.

Enrollment limited to students in a Bachelor of Science degree.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture
Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 494:** *Intermediate Methods*. 3 credits.
Topics of special interest to undergraduates. Notes: May be repeated if topics are substantially different. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Completion of at least 60 credits.

**Registration Restrictions:** Enrollment is limited to students with a major in Statistics.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 498:** *Independent Study in Statistics*. 1-3 credits.
Directed self-study of special topics of current interest in statistics. Notes: May be repeated if topics are substantially different. Offered by Statistics (p. 1136). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 60 hours. Must be arranged with a faculty member of the Statistics Department and approved by the department chair before registering.

**Registration Restrictions:** Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 499:** *Special Topics in Statistics*. 0-3 credits.
Topics of special interest to undergraduates. Notes: May be repeated if topics are substantially different. Offered by Statistics (p. 1136). May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** 60 undergraduate credits.

**Registration Restrictions:**
Washington Consortium level students may not enroll.

Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**STAT 515:** *Applied Statistics and Visualization for Analytics*. 3 credits.
Introduces multivariate regression and random forests for modeling data. Addresses data access, variable selection and model diagnostics. Introduces foundations for visual thinking. Reviews common statistical graphics such as dot plots, box plots, q-q plots. Addresses more advanced methods such as scatterplot matrices enhanced by smoothed or density contours, and search tools for finding graphics with suggestive patterns. Notes: Course will introduce R software for analysis. A final project will involve visualization of a real data set. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** STAT 250 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 517:** *Experimental Design*. 3 credits.
Introduces problems and techniques inherent in design of experiments, which refers to planning an experiment so that collected data can be analyzed by statistical methods. Covers the two aspects to any experimental problem: the design itself and the analysis of the resulting data. Examples from numerous disciplines in the sciences and the humanities are discussed. Data analysis is emphasized. Notes: Students may not receive credit for both STAT 455 and STAT 517. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** STAT 535 or 554.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 522:** *Applied Multivariate Statistics*. 3 credits.
Introduces a variety of multivariate statistical methods as aids to analyzing and interpreting large data sets. These methods will have general applications across a wide range of disciplines. Topics include: principal components analysis, cluster analysis, discriminant analysis, multi-dimensional scaling, correspondence analysis, and canonical correlation analysis. Extensive use of statistical software. Notes: Students may not receive credit for both STAT 462 and STAT 522. Cannot be used to satisfy requirements for MS in Statistical Science. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** STAT 535 or 554.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

STAT 525: Nonparametric Statistics and Categorical Data Analysis. 3 credits.
Introduction to nonparametric methods and categorical data analysis. Topics include tests for one-sample, two-related samples, and two independent samples; concepts of nonparametric ANOVA; tests for proportions; chi-squared tests, log-linear models, and contingency tables; goodness-of-fit tests; correlation and association analysis; nonparametric regression including logistic and Poisson regression; and bootstrapping, jackknifing, and cross-validation. Notes: Students may not receive credit for both STAT 465 and STAT 525. Cannot be used to satisfy requirements for MS in Statistical Science. Offered by Statistics (p. 1136). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: STAT 536B- or 554B-.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

STAT 526: Applied Regression Analysis. 3 credits.
Introduces statistical modeling with a focus on regression. Topics include: Correlation, simple and multiple regression models, model fitting, variable selection, diagnostic tools, model validation, inference for regression parameters, and matrix forms for multiple regression. Additional topics covered include logistic regression and time series analysis with a focus on smoothing techniques and decomposition. A statistical software package is used extensively throughout the course. Notes: Students may not receive credit for both STAT 456 and STAT 526. Cannot be used to satisfy requirements for MS in Statistical Science. Offered by Statistics (p. 1136). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: STAT 536B- or 554B-.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

STAT 527: Topics in Applied Statistics. 0-3 credits.
Topics in applied statistics of interest to graduate students in statistics certificate programs. Notes: May be repeated for credit when topic is different. Cannot be used to satisfy requirements for MS in Statistical Science. Offered by Statistics (p. 1136). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: Permission of instructor; specific prerequisites vary with the nature of the topic.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 544: Applied Probability.** 3 credits.
The axioms of probability, conditional probability, random variables and expectation, multivariate and conditional distributions, conditional expectation, order statistics, transformations, moment generating functions, special distributions, limit theorems. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** MATH 213 and STAT 346, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 554: Applied Statistics I.** 3 credits.
Application of basic statistical techniques. Focus is on the problem (data analysis) rather than on the theory. Topics include descriptive statistics; exploratory data analysis; sampling distributions; one- and two-sample tests and confidence intervals for means, medians, proportions, and variances; and goodness-of-fit tests. Normal theory is introduced first with discussion of what happens when assumptions break down. Alternative robust and nonparametric techniques are presented. Notes: Certificate program students granted credit for only one of STAT 535 or 554. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** MATH 114 and (STAT 334 or STAT 344 or STAT 346) and (Course in Statistics)

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 574: Survey Sampling I.** 3 credits.
Design and implementation of sample surveys. Covers components of a survey; probability sampling designs to include simple random, systematic, Bernoulli, proportional to size, stratified, cluster and two-stage sampling; and ratio and regression estimators. Discusses practical problems in conducting a survey. Methods applied to case studies of actual surveys. Class project may be required. Notes: Students may not receive credit for both STAT 474 and STAT 574. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** STAT 346 and a course in Statistics, or STAT 344; and working knowledge of SAS.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**STAT 634:** Case Studies in Data Analysis. 3 credits.
Examination of a wide variety of case studies illustrating data-driven model building and statistical analysis. With each case study, various methods of data management, data presentation, statistical analysis, and report writing are compared. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Working knowledge of SAS and R.

**Registration Restrictions:**

**Required Prerequisites:** STAT 654\(^B\) and 544\(^B\). \(^B\) Requires minimum grade of B.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

STAT 652: *Statistical Inference.* 3 credits.
Fundamental principles of estimation and hypothesis testing. Topics include limiting distributions and stochastic convergence, sufficient statistics, exponential families, statistical decision theory and optimality for point estimation, Bayesian methods, maximum likelihood, asymptotic results, interval estimation, optimal tests of statistical hypotheses, and likelihood ratio tests. Offered by Statistics (p. 1136). May not be repeated for credit. Equivalent to CSI 672.

Registration Restrictions:
Required Prerequisites: STAT 544\(^B\) and 554\(^B\).
\(^*\) May be taken concurrently.
\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

STAT 654: *Applied Statistics II.* 3 credits.
Overview of statistical principles of modeling. Topics include methods for analyzing data based on generalized linear models and diagnostic methods for assessing the assumptions of such models. Methods covered include multiple regression, analysis of variance, simultaneous inference, logistic and Poisson regression, and hierarchical log linear models for contingency tables. Offered by Statistics (p. 1136). May not be repeated for credit.

Recommended Prerequisite: MATH 203 and MATH 213 and STAT 346

Registration Restrictions:
Required Prerequisite: STAT 554\(^B\).
\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy or Graduate.

Enrollment is limited to students with a major in Biostatistics or Statistical Science.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

STAT 656: *Regression Analysis.* 3 credits.
Simple and multiple linear regression, polynomial regression, general linear models, subset selection, step-wise regression, and model selection. Also covered are multicollinearity, diagnostics, and model building as well as the theory and practice of regression analysis. Offered by Statistics (p. 1136). May not be repeated for credit. Equivalent to CSI 676.

Registration Restrictions:
Required Prerequisites: STAT 544\(^B\) and 554\(^B\).
\(^*\) May be taken concurrently.
\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

STAT 657: *Nonparametric Statistics.* 3 credits.
Distribution-free procedures for making inferences about one or more samples. Tests for lack of independence, association or trend, and monotone alternatives are included. Measures of association in bivariate samples and multiple classifications are discussed. Both theory and applications are covered. Students are introduced to appropriate statistical software. Offered by Statistics (p. 1136). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (STAT 544\(^B\) and 554\(^B\)).
\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

STAT 658: *Time Series Analysis and Forecasting.* 3 credits.
Modeling stationary and nonstationary processes, autoregressive, moving average and mixed model processes, autocovariance functions, autocorrelation functions, partial autocorrelation functions, spectral density functions, identification of models, estimation of model parameters, and forecasting techniques. Offered by Statistics (p. 1136). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: (STAT 544\(^B\) and 554\(^B\)).
\(^B\) Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 662: Multivariate Statistical Methods. 3 credits.**
Standard techniques of applied multivariate analysis. Topics include review of matrices, multivariate normal theory, principal components, canonical correlation, classification, factor analysis, clustering, and multidimensional scaling. Applications to data analytics. Computer implementation via a statistical package is an integral part of the course. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Matrix algebra, and working knowledge of SAS.

**Registration Restrictions:**
**Required Prerequisites:** STAT 554\textsuperscript{B-} and 544\textsuperscript{B-}.
\textsuperscript{1} May be taken concurrently.
\textsuperscript{B-} Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 663: Statistical Graphics and Data Exploration I. 3 credits.**
Introduces statistical graphics that show distribution features and functional relationships in the presence of noise. Introduces cognitive research guidance for graphics design and reasoning. Stresses quantitative comparisons from multiple perspectives. Features new micromaps designs for spatial and temporal comparisons. Introduces R, the grammar of graphics, and dynamic graphics software. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** A 300-level statistics course and a programming course, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 665: Categorical Data Analysis. 3 credits.**
Analyzes cross-classified categorical data in two and higher dimensions. Topics include association tests and measures of association in two- and three-dimensional contingency tables, logistic regression, and log linear models. SAS is used extensively for data analysis. Offered by Statistics (p. 1136). May not be repeated for credit.

**Required Prerequisite:** Working knowledge of SAS.

**Registration Restrictions:**

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**Recommended Prerequisites:** STAT 654\textsuperscript{B-} and 544\textsuperscript{B-}.
\textsuperscript{1} May be taken concurrently.
\textsuperscript{B-} Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 668: Survival Analysis. 3 credits.**
Survival Analysis is a class of statistical methods for studying the occurrence and timing of events. In medical research, the events may be deaths, and the objective is to determine factors affecting survival times of patients following treatment, usually in the setting of clinical trials. Methods can also be applied to the social and natural sciences and engineering where they are known by other names (reliability, event history analysis). Concepts of censored data, time-dependent variables, and survivor and hazard functions are central. Nonparametric methods for comparing two or more groups of survival data are studied. The Cox regression model (proportional hazards model), Weibull model, and the accelerated failure time model are studied in detail. Concepts are applied to analysis of real data from major medical studies using SAS software. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Working knowledge of R and SAS.

**Registration Restrictions:**
**Required Prerequisites:** (STAT 544\textsuperscript{B-} and 554\textsuperscript{B-}).
\textsuperscript{B-} Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 672: Statistical Learning and Data Analytics. 3 credits.**
The course focuses on statistical learning theory by introducing the statistical and optimization background essential for understanding statistical learning algorithms. Also discusses applications of statistical learning algorithms to the solution of important problems in many areas of science. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
**Required Prerequisites:** (STAT 544\textsuperscript{B-} and 554\textsuperscript{B-}).
\textsuperscript{B-} Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 674: Survey Sampling II.** 3 credits.
Continuation of STAT 574. Applications to case studies of actual surveys. Categorical data analysis, regression models, and domain estimation from complex sampling designs, introduction to variance estimation, weighting adjustments for nonresponse, and imputation. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: (STAT 574B).
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 676: Alternative Regression Methods.** 3 credits.
Presents several modern regression methodologies that are useful in data analysis when some of the assumptions of linear regression theory fail to hold. Topics include non-linear regression, quantile regression, robust regression, and computational methods for fitting these models. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Working knowledge of SAS.

**Registration Restrictions:**
Required Prerequisite: STAT 654B.
B- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 689: Topics in Statistics.** 1-3 credits.
Special topics of interest to graduate students in statistics. Notes: May be repeated for credit when topic is different. Offered by Statistics (p. 1136). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** Permission of instructor; specific prerequisites vary with the nature of the topic.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 758: Advanced Time Series Analysis.** 3 credits.
Mathematical modeling and methods for model identification and forecasting of nonstationary and seasonal time series data (ARIMA models), multivariate time series, and state-space models. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisite: (STAT 658B).
B- Requires minimum grade of B-.

Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 760: Advanced Biostatistical Methods.** 3 credits.
Advanced statistical methods in the drug development process. Provides the theoretical statistical basis for the design and analysis of pharmaceutical clinical trials. Topics include the theory of randomization, randomization-based inference, restricted, response-adaptive, and covariate-adaptive randomization, the modern theory of group sequential monitoring, statistical aspects of determination of dose-response relationships. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Working knowledge of statistical programming language.

**Registration Restrictions:**
Required Prerequisites: (STAT 652B and 654B).
B- Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 763: Statistical Graphics and Data Exploration II.** 3 credits.
Addresses data set size and human comprehension challenges. Introduces case and variable reduction methods, and overview production. Incorporates cognitive science guidance. Utilizes data mining models and visual analytic algorithms to find patterns and prioritize graphics. Addresses applications from both information and scientific visualization. Tracks advances in web graphics including citizen science.
projects harnessing the visual power of thousands of people. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**

**Required Prerequisites:** (STAT 663\(^B\) or 515\(^B\)).

B\(^-\) Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**STAT 771:** *Spatial Data Analysis.* 3 credits.

Presents analysis techniques for spatially-indexed or spatially-correlated data that arise in many areas of science, including medicine, transportation, and atmospheric sciences. Focus is on data analysis rather than theory, though theory will necessarily be covered. Topics include analysis of point patterns, trend and surface estimation, and spatial regression. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Working knowledge of R and SAS.

**Registration Restrictions:**

**Required Prerequisites:** (STAT 652\(^B\) and 654\(^B\)).

B\(^-\) Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**STAT 773:** *Statistical Methods for Longitudinal Data Analysis.* 3 credits.

Presents modern statistical approaches to the analysis of longitudinal data, i.e., data collected repeatedly on experimental units over time (or other conditions). Topics include linear mixed effects models, generalized linear models for correlated data (including generalized estimating equations), and computational issues and methods for fitting models. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Working knowledge of SAS.

**Registration Restrictions:**

**Required Prerequisites:** (STAT 652\(^B\) and 654\(^B\)).

B\(^-\) Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**STAT 778:** *Algorithms and Simulation for Statistics in C.* 3 credits.

Introduces high level simulations and algorithms for complex statistical problems using C. Topics include: pointers, arrays, random number generation, iterative numerical algorithms, sorting, matrix operation, numerical integration and Bayesian computation, advanced data structure for complex problems, and parallel processing. Complex programming problems related to statistical modeling and inference are studied. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**

**Required Prerequisites:** STAT 652\(^B\) or CSI 672\(^B\).

B\(^-\) Requires minimum grade of B-.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**STAT 796:** *Independent Studies/Directed Readings.* 1-3 credits.

Reading and research on a specific topic in statistics under guidance of graduate faculty member. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** Permission of instructor and department’s graduate coordinator.

**Registration Restrictions:**

Enrollment is limited to Graduate, Non-Degree or Washington Consortium level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**STAT 798:** *Master’s Research Project.* 3 credits.

Project chosen and completed under guidance of graduate faculty member that results in acceptable technical report. Offered by Statistics (p. 1136). May not be repeated for credit.

**Recommended Prerequisite:** 9 graduate credits, and permission of instructor.

**Registration Restrictions:**

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**

This course is graded on the Graduate Special scale. (p. 84)

**STAT 799:** *Master’s Thesis.* 1-6 credits.

Project chosen and completed under guidance of graduate faculty member that results in acceptable technical report and oral defense. Offered by Statistics (p. 1136). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** 9 graduate credits, and permission of instructor.

**Registration Restrictions:**

Enrollment is limited to Graduate or Non-Degree level students.
Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Thesis

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### 800 Level Courses

**STAT 889:** Advanced Topics in Statistics. 3 credits.
Advanced topics not occurring in regular sequence. Offered by Statistics (p. 1136). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** Doctoral standing and permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 896:** Advanced Directed Reading. 3 credits.
Individualized study with a graduate faculty member in the Department of Statistics. Syllabus and grading criteria must be preapproved by the PhD in Statistical Science Program Director. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Statistical Science.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 900 Level Courses

**STAT 971:** Probability Theory. 3 credits.
A rigorous measure-theoretic treatment of probability. Includes expectation, distributions, laws of large numbers and central limit theorems for independent random variables, characteristic function methods, conditional expectations, martingales, strong and weak convergence, and Markov chains. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students in the VS-PHD-STAT program.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 972:** Mathematical Statistics I. 3 credits.
Focuses on theory of estimation. Includes method of moments, least squares, maximum likelihood, and maximum entropy methods. Details of minimum variance unbiased estimation. Topics include sufficiency and completeness of statistics, Fisher information, Cramer-Rao bounds, Bhattacharyya bounds, asymptotic consistency and distributions, statistical decision theory, minimax and Bayesian decision rules, and applications to engineering and scientific problems. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: (STAT 652B or CSI 672B) and (CSI 876*B, STAT 971**B or CSI 971*B).
* May be taken concurrently.
**B Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 973:** Mathematical Statistics II. 3 credits.
Continuation of STAT 972/CSI 972. Concentrates on theory of hypothesis testing. Topics include characterizing decision process, simple versus simple hypothesis tests, Neyman-Pearson Lemma, uniformly most powerful tests, unbiasedness and invariance of tests, and randomized and sequential tests. Applications of testing principles made to situations in normal distribution family and other families of distributions. Offered by Statistics (p. 1136). May not be repeated for credit.

**Registration Restrictions:**
Required Prerequisites: (STAT 972B or CSI 972B).
**B Requires minimum grade of B-.

Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**STAT 990:** Dissertation Topic Presentation. 1 credit.
Students put together a professional presentation of a research proposal and present it for critique to fellow students and interested faculty. Notes: May be repeated with change of research topic, but credit towards doctoral degree is given once. Offered by Statistics (p. 1136). May not be repeated for credit. Equivalent to CEIE 990, CS 990, IT 990.

**Recommended Prerequisite:** Completion of all course requirements for PhD, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Research

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**STAT 998:** Doctoral Dissertation Proposal. 1-12 credits.
Work on research proposal that forms basis for doctoral dissertation. Notes: No more than 24 credits of STAT 998 and 999 may be applied to
doctoral degree requirements. Offered by Statistics (p. 1136). May be repeated within the degree.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**STAT 999: Doctoral Dissertation.** 1-12 credits.
Formal record of commitment to doctoral dissertation research under direction of faculty member in statistics. Notes: No more than 24 credits of STAT 998 and 999 may be applied to doctoral degree requirements. Offered by Statistics (p. 1136). May be repeated within the degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

# System Engineering (SYST)

## 100 Level Courses

**SYST 101: Understanding Systems Engineering.** 3 credits.
Introduces systems engineering and curriculum for BS in field. Introduces large and small systems, and explains them through some hands-on experiences. Key concepts include understanding requirements for system and translation of system-level requirements to component-level requirements. Several different kinds of example systems presented and discussed: objectives, major components, how system works, and major design issues. Each student gives a similar presentation on system of choice. Students work in groups design, develop, and test system, and give oral presentation. Students are responsible for writing several short papers on curriculum and presentations they have heard. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Registration Restrictions:**
Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 198: Independent Study in Systems Engineering.** 1-3 credits.
Must be arranged with instructor and approved by department chair before registering. Directed self-study of special topics of current interest in systems engineering. Notes: May be repeatable if topics are substantially different. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

## 200 Level Courses

**SYST 202: Engineering Systems in a Complex World.** 3 credits.
This course introduces students to the study of engineering systems as a means of understanding larger historical trends in a global society. Students will use case studies and historical analyses to think strategically and globally about the management and execution of complex systems in the context of culture, environment, politics and economics, and learn how to employ such analyses as decision-making tools for leadership. Students will be required to critically analyze articles and books, and work in groups to investigate and present topics of current national and international relevance. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to HIST 202.

**Mason Core:** Global Understanding (p. 142)

**Registration Restrictions:**
Students with the terminated from VSE major attribute may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 205: Systems Engineering Principles.** 3 credits.
Introduction to systems engineering principles. Emphasize development of analytical, technical, management, and teamwork skills through exercises in planning, documentation, presentation, and the creative process of IT and engineering design. Analyze case studies involving systems engineering role in cyber security, IT, engineering, non-engineering, or management disciplines. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Registration Restrictions:**
Students cannot enroll who have a major in Systems Engineering.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 210: Systems Design.** 3 credits.

**Recommended Prerequisite:** SYST 101.

**Registration Restrictions:**
Students with a class of Freshman may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 220: Dynamical Systems I.** 3 credits.
Introduces modeling of dynamical systems. Formulation of mathematical models from system descriptions, including computer, biological, economic, transportation, and mechanical systems. Analytical and
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 230: Object-oriented Modeling and Design. 4 credits.
This course describes fundamental principles of object-oriented modeling, requirements development, analysis, and design. Topics include specification of software requirements; object-oriented analysis approaches, including dynamic and static modeling with the Unified Modeling Language (UML); object-oriented design; object-oriented reuse, including design patterns; and software implementation concerns. Other topics include the Systems Modeling Language (SysML), Object-Oriented Systems Engineering Methodology (OOSEM), managing object-oriented projects, and the Object Constraint Language (OCL). There will be an emphasis on the systems engineering lifecycle (requirements capture, architecture definition, sub-system design and testing, integration, implementation and validation) and project management. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: (CDS 130 or CS 112) and (SYST 210 or 205). * May be taken concurrently.
C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 335: Discrete Systems Modeling and Simulation. 3 credits.
Introduces basic concepts of modeling complex discrete systems by computer simulation. Topics include Monte-Carlo methods, discrete-event modeling, specialized simulation software, and statistics of input and output analysis. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to OR 335.

Registration Restrictions:
Required Prerequisites: (CDS 130 or CS 112) and (SYST 334, 344, 346 or MATH 351) and (SYST 230 or CS 211). * May be taken concurrently.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 371: Systems Engineering Management.** 3 credits.
Study of basics of systems engineering management. Includes engineering economics, planning, organizing, staffing, monitoring, and controlling process of designing, developing, and producing system to meet stated need in effective and efficient manner. Discusses management tools, processes, and procedures, including various engineering documentation templates, managerial processes, and dealing with personnel issues. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** SYST 210°C and 330°C.
\* May be taken concurrently.
\* Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 395: Applied Systems Engineering.** 3 credits.
The course will enhance the student's system engineering experience by designing and building projects involving real world complex systems. The course will build physical models that follow the steps of system life cycle process: statement of need, design, requirements, architecture, implementation, testing, verification and validation. Projects are multidisciplinary in nature, requiring the student teams to learn about various real world systems such as internet communications, navigation, robotics, creating a GUI, and transmitting and receiving data from sensors. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Registration Restrictions:**
**Required Prerequisites:** (SYST 210°C and 101°C) and (SYST 220°C, 221°C, 335°C and 371°C).
\* May be taken concurrently.
\* Requires minimum grade of C.

Students cannot enroll who have a major in Undeclared.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**400 Level Courses**

**SYST 420: Network Analysis.** 3 credits.

**Registration Restrictions:**
**Required Prerequisites:** (OR 441°C) and (MATH 213°C or 215°C).
\* Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 421: Classical Systems and Control Theory.** 3 credits.

**Registration Restrictions:**
**Required Prerequisite:** ECE 220°C.
\* Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 438: Analytics for Financial Engineering and Econometrics.** 3 credits.
Introduces the basic analytics for financial engineering and econometrics. Topics include financial transactions and econometric data management, correlation, linear and multiple regressions for financial and economic predictions, financial time series analysis, portfolio theory, and risk analysis. Provides a foundation of basic theory and methodology as well as applied examples with techniques to analyzing large financial and econometric data. Hands-on experiments with R will be emphasized throughout the course. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to OR 438.

**Recommended Corequisite:** STAT 354

**Registration Restrictions:**
**Required Prerequisites:** STAT 250°C, 260°C, 334°C, 344°C, 346°C or MATH 351°C.
\* Requires minimum grade of C.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 460: Introduction to Air Traffic Control.** 3 credits.
Introduction to Air Traffic Control (ATC) for those who plan professions in the air transportation industry. Surveys the entire field, presenting the history of ATC and how it came to be as it is, the technology on which the system is based, the procedures used by controllers to meet the safety and efficiency goals of the system, the organizational structure of the FAA, challenges facing the system, and means under investigation to meet these challenges. Some fieldwork will be required to acquire and analyze airport operational data. A brief introduction to airport design will be discussed. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.
**Recommended Prerequisite:** Junior standing or graduate standing.

**Registration Restrictions:** Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 461:** Air Transportation System Engineering. 3 credits.
Focuses on the theory and practice of system engineering in a national air transportation system. Stresses the application of mathematical techniques to analyze and design complex network transportation systems, airports, airspace, airline schedules, and traffic flow. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Recommended Prerequisite:** SYST 460 or permission of instructor.

**Registration Restrictions:** Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 462:** Flight Training Lab I. 3 credits.
This course fulfills the requirements of 14 CFR, Section 141, Appendix B for obtaining a private pilot certificate with airplane category, single engine land class rating. Flight Training 1 will include the flight training up to and including maneuvering and navigating the aircraft. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Recommended Corequisite:** SYST 460.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Aviation Flight Trng and Mgmt.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 463:** Flight Training Lab II. 3 credits.
This course fulfills the requirements of 14 CFR, Section 141, Appendix B for obtaining a private pilot certificate with airplane category, Airplane - Single Engine Land class rating. Flight Training II will include the flight training up to and including the dual and solo flight instruction in cross-country navigation by pilotage, dead reckoning, and use of VOR, NDB, and HSI. Flight test preparation for private pilot certification. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Recommended Prerequisite:** SYST 462.

**Registration Restrictions:**
Enrollment is limited to students with a major, minor, or concentration in Aviation Flight Trng and Mgmt.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 465:** Pricing in Optimization and Game Theory. 3 credits.
Allocation of limited resources among competing activities to maximize the outcome or minimization of expenses required to produce a given assortment of goods and services are two typical problems faced by any economic institution. Mathematical modeling of such problems and finding efficient mathematical tools for solving them are two main goals of modern optimization theory. Pricing theory can also give rise to numerical methods for finding optimal solutions and economic equilibrium. Fundamental tools in pricing theory are the classical Lagrangian and Lagrange multipliers for constrained optimization. Covers the basic ideas and methods of linear programming and matrix games. Particular emphasis to pricing for both theoretical analysis and numerical methods. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Recommended Prerequisite:** MATH 203 or 216 and OR 441, or permission of instructor.

**Registration Restrictions:** Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 468:** Applied Predictive Analytics. 3 credits.
Introduces students to the fundamentals of data analysis and some of the most widely used models in applied predictive analytics. The students learn how to summarize data and explore relationship between variables, including principle component analysis and multidimensional scaling. Class instruction follows with a presentation of commonly used tables, visualizations, and statistical tests for comparing groups. Linear predictive models for both continuous and binary outcomes (logistic regression) are discussed in detail. The course introduces students to clustering and classification using random forest and naive Bayes. The course concludes with topics on choice modeling. Hands-on programming with R is emphasized. While no prior knowledge on R is required, students must be well prepared in programming. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Registration Restrictions:**
Required Prerequisites: (STAT 334°C, 344°C, 250°C, 260°C or MATH 351°C) and (CDS 130°C, IT 206°C or CS 112°C).

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**SYST 469:** Human Computer Interaction. 3 credits.
Covers principles of human-computer interaction, including information processing design, cognitive models, ergonomics, and design metaphors. Students learn to evaluate interface design in terms of effectiveness, efficiency, and cost. Notes: Students who receive credit for SYST 470 may not receive credit for this course. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.
Registration Restrictions:
Required Prerequisites: (STAT 250 C, 260 C, 334 C, 344 C or MATH 351 C) and (IT 106 C, 109 C or CS 112 C).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 470: Human Factors Engineering. 3 credits.
Human information processing, inferential analysis, biases and heuristics in human information processing, support systems to aid in human information processing, human-system interaction, and software systems engineering considerations. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: SYST 210 C and (STAT 334 C, 344 C, 346 C or MATH 351 C).
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 473: Decision and Risk Analysis. 3 credits.
Studies analytic techniques for rational decision making that address uncertainty, conflicting objectives, and risk attitudes. Covers modeling uncertainty; rational decision making principles; representing decision problems with value trees, decision trees, and influence diagrams; solving value hierarchies, decision trees and influence diagrams; defining and calculating the value of information; incorporating risk attitudes into the analysis; and conducting sensitivity analyses. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Registration Restrictions:
Required Prerequisites: STAT 250 C, 260 C, 334 C, 344 C, 346 C or MATH 351 C.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 480: Economic Systems Design I: Principles and Experiments. 3 credits.
Introduces design principles used in developing systems used to allocate resources. Students required to participate in experiment demonstrations of different allocation mechanisms. Students are also exposed to experimental methods in economics and market design. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to ECON 440.

Recommended Prerequisite: OR 441.

Recommended Corequisite: SYST 465.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 488: Financial Systems Engineering. 3 credits.
This course is an introduction to financial engineering. Financial engineering is a cross-disciplinary field which relies on mathematical finance, numerical methods, and computer simulations to make trading, hedging, and investment decisions. This course will introduce basic types of derivatives, such as forward, futures, swaps, and options; as well as financial models such as Brownian motion, Ito’s formula, and Black-Scholes model. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Recommended Prerequisite: OR 441.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 489: Senior Seminar. 3 credits.
Introduces several important topics in systems engineering, providing additional experience in writing and giving presentations, and obtaining feedback on curriculum for BS in systems engineering. Several lectures devoted to ethics; writing and making presentations also covered. Students attend technical lectures and write paper. Students are required to a write long paper on new technology. Instructor and guest lecturers present material not part of required course load to expand horizons. Examples are “knowledge-based” design, enterprise-wide reengineering, electronic commerce, and optimization by “natural analogy” (simulated annealing, neural networks, genetic algorithms). In addition, students work in teams to critique and redesign curriculum. Each group delivers written product, and provides at least one briefing to class. Best critique and redesign presented to faculty. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Specialized Designation: Writing Intensive in Major

Registration Restrictions:
Required Prerequisite: SYST 490 C.
* May be taken concurrently.
C Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 490: Senior Design Project I. 3 credits.
First part of capstone course in systems engineering program. Students apply knowledge they have gained to group project. Students perform concept definition and requirements analysis. Plan for carrying out project is developed, culminating in proposal presented to faculty at end of semester. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.
Recommended Prerequisite: 90 satisfactory credits.

Registration Restrictions:
Required Prerequisites: (SYST 335\(^\text{C}\), 371\(^\text{C}\) and 395\(^\text{C}\)) and (SYST 320\(^\text{C}\), 470\(^\text{C}\), 473\(^\text{C}\), 489\(^\text{C}\) and OR 441\(^\text{C}\)).
\(^\text{C}\) May be taken concurrently.
\(^\text{C}\) Requires minimum grade of C.

Enrollment is limited to students with a major in Systems Engineering.
Enrollment limited to students in a Bachelor of Science degree.
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 491: Industrial Project. 1-3 credits.
Semester-long work experience in systems engineering in industrial or governmental organization. Work supervised jointly by systems engineer from sponsoring organization and department faculty member. Project and arrangements for supervision must be approved by student’s faculty advisor. Periodic reports, presentations, and a written final report are required. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Recommended Prerequisite: 75 credits toward BS in Systems Engineering; SYST 330; GPA of at least 3.00.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 495: Senior Design Project II. 3 credits.
Second part of capstone course. Design project plans formulated in SYST 490 are reviewed and modified. Additional instruction on documentation and project management is given. Design project completed; formal report prepared, presented, and evaluated. Students are strongly recommended to take STAT 354 before enrolling in SYST 490/495. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Mason Core: Capstone, Synthesis (p. 142)

Registration Restrictions:
Required Prerequisites: (SYST 320\(^\text{C}\), 470\(^\text{C}\), 473\(^\text{C}\), 489\(^\text{C}\) and 490\(^\text{C}\)) and (SYST 330\(^\text{C}\) and STAT 354\(^\text{C}\)).
\(^\text{C}\) May be taken concurrently.
\(^\text{C}\) Requires minimum grade of C.

Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 497: Applied Engineering Abroad. 3 credits.
Introduces students to applications of engineering processes outside USA. The students will gain hands-on project management, critical thinking, intercultural and career skills by exploring engineering aspects such as auto assembly, airliner manufacturing, metropolitan infrastructure, and bridge designs. By visiting technology museums, students will learn to appreciate the rich history of the country’s technology and manufacturing. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts. Equivalent to CEIE 497, ME 497.

Mason Core: Global Understanding (p. 142)

Registration Restrictions:
Enrollment limited to students with a class of Junior, Senior Plus or Senior.
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 498: Independent Study in Systems Engineering. 1-3 credits.

Recommended Prerequisite: 60 credits towards BS in systems engineering, and GPA of at least 3.00.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

SYST 499: Special Topics in Systems Engineering. 3 credits.
Topics of special interest to undergraduates. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

Recommended Prerequisite: 60 credits toward BS in systems engineering; specific prerequisites vary with nature of topic.

Registration Restrictions:
Students with the terminated from VSE major attribute may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

500 Level Courses

SYST 500: Quantitative Foundations for Systems Engineering. 3 credits.
Provides quantitative foundations necessary for core courses in systems engineering and operations research master's program, and certificate program in C4I. Topics include vectors and matrices, infinite series, partial differentiation, multiple integrals, differential and difference equations; linear systems; Laplace and Z-transforms, and probability theory. Students receive graduate credit for this course, which, when used on plan of study, extends minimum credit requirements for degree. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to CSI 600.

Recommended Prerequisite: MATH 203 and 213.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 505: Systems Engineering Principles. 3 credits.
This course is an introduction and overview of the methods and tools systems engineers use to define, develop, and deploy systems. It serves as a foundation for the other courses in the MS/SE curriculum. During this course, the different components of the system lifecycle will be explored as well as the economic value of systems engineering. The course will convey to students the essential elements of systems engineering; including systems thinking, concept and system definition, integration and test, product and service life management, systems engineering management, logistics and supportability, and disposal/system retirement. This course is suitable for those who are new to systems engineering or have limited knowledge and/or experience in the field. Students enrolling in this course should have an engineering, science, or mathematics degree and one year of experience in science or engineering, or permission from the student’s academic advisor and the course instructor. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 508: Complex Systems Engineering Management. 3 credits.
Introduces the organizational, economic, technological and societal factors (POETS) that apply to the development of large-scale, complex mega-systems, and shows that "one size does not fit all" when it comes to the project management of mega-systems. Notes: Course cannot be applied for credit toward the MS in Systems Engineering degree. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 514: Systems Thinking.** 3 credits.
Enables students to understand and use systems thinking concepts, tools and techniques that can apply across all system types, especially those which exhibit a fusion of technology and human activities. Additionally, the course extends the understanding of systems beyond technology, to systems with significant human activity components, such as organizations and enterprises. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Corequisite:** SYST 505.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 520: System Engineering Design.** 3 credits.
System engineering design methods are studied and practiced, including object-oriented and structured analysis based techniques. Design Description languages such as UML, SysML, IDEF0 and IDEF1x are introduced and used in carrying out complete system designs. Teams make presentations of their designs. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to ECE 550.

**Recommended Corequisite:** SYST 505

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 521: Network Analysis.** 3 credits.

**Recommended Prerequisite:** MATH 203 and 213, OR 441 or OR 541.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 523: Engineering Resilient and Agile Enterprise Systems.** 3 credits.
Large-scale enterprise systems have ill-defined boundaries, complex behaviors, and evolve in unplanned ways. Enterprise systems need to be resilient and agile. This course introduces several tools and frameworks that can be used to understand resilience and agility, design resilience and agility into enterprises, and measure the degree of enterprise resilience and agility. Case studies are used to explore these concepts. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** SYST 503.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 530: Systems Engineering Management I.** 3 credits.
Provides techniques for evaluating cost and operational effectiveness of system designs and systems management strategies. Discusses performance measurement, work breakdown structures, cost estimating, quality management, configuration management, standards, and case studies of systems from different application areas. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** SYST 510.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**SYST 538:** Analytics for Financial Engineering and Econometrics. 3 credits. This course introduces the basic analytics for financial engineering and econometrics, topics include financial transactions and econometric data management, correlation, linear and multiple regressions for financial and economic predictions, financial time series analysis, portfolio theory and risk analysis. It will provide a foundation of basic theory and methodology as well as applied examples with techniques to analyzing large financial and econometric data. Hand-on experiments with R will be emphasized throughout the course. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 538.

**Recommended Prerequisite:** STAT 515 or STAT 544.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**SYST 542:** Decision Support Systems Engineering. 3 credits. Studies design of computerized systems to support individual or organizational decisions. Teaches systems engineering approach to decision support system (DSS) development. DSS is end product of development process, and process is key to successfully integrating DSS into organization. Any DSS is built on a theory (usually implicit) of what makes for successful decision support in given context. Empirical evaluation of specific DSS and the underlying theory should be carried on throughout development process. Course examines prevailing theories of decision support, considers issues in obtaining empirical validation for theory, and discusses empirical support that exists for theories considered. Students design decision support system for semester project. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** SYST 301

**Registration Restrictions:**

**Required Prerequisites:** SYST 573B, 473B or OR 681B.

B* Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**SYST 560:** Introduction to Air Traffic Control. 3 credits. Introduction for those who plan professions in aviation industry. Surveys entire field, presenting history of ATC and how it came to be, technology on which system is based, procedures used by controllers to meet safety and efficiency goals, organizational structure of the FAA, challenges facing system, and means under investigation to meet these challenges. Involves some field work for data collection and analysis. Class project requiring system simulation required. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**SYST 563:** Evidence-Based Systems Engineering. 3 credits. A common cause of failure and risk in system development is making decisions when lacking clear evidence to support them. This course presents frameworks and methods used to make sound, evidence-based decisions throughout the system lifecycle. Students learn what information to gather, how to analyze it, and how to present those analyses when deciding on the adequacy of programmatic decisions. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** STAT 344 and STAT 354 or equivalent.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 568: Applied Predictive Analytics. 3 credits.**
Introduces predictive analytics with applications in engineering, business, and econometrics. Topics include time series and cross-sectional data processing, correlation, linear and multiple regressions, time series decomposition, predictive modeling and case study. Provides a foundation of basic theory and methodology with applied examples to analyze large engineering and econometric data for predictive decision making. Hands-on experiments with R will be emphasized. Offered by Systems Engr & Operations Rsch. (p. 1151). May not be repeated for credit. Equivalent to OR 568.

**Recommended Prerequisite:** STAT 515 or enrollment in the MSOR or MSSE programs.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Undergraduate level students.

- Students in a Non-Degree Undergraduate degree may **not** enroll.
- Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 574: Quality Control and Process Management. 3 credits.**
Provides fundamentals of quality control and process management methodologies that are applicable in manufacturing industries. Introduces the basic concepts of engineering process and product quality management techniques. Provides exposition of fundamentals of lean Six Sigma and total quality management and maintainability. Offered by Systems Engr & Operations Rsch. (p. 1151). May not be repeated for credit. Equivalent to OR 574.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

- Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
- Students in a Non-Degree Undergraduate degree may **not** enroll.
- Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 576: Manufacturing Systems Analysis. 3 credits.**
Provides fundamentals of modeling and analysis of general manufacturing systems that are also applicable to semiconductor manufacturing. Introduces the basic concepts of scheduling, inventory control, and enterprise resource management. Offered by Systems Engr & Operations Rsch. (p. 1151). May not be repeated for credit. Equivalent to OR 576.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

- Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.
- Students in a Non-Degree Undergraduate degree may **not** enroll.
- Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 584: Heterogeneous Data Fusion. 3 credits.**
Introduces the theory, design and implementation of multi-source information fusion systems in various domains. The course covers distinct technologies for combining data from multiple, heterogeneous sources and performing inferences in support to applications such as cyber security, Semantic Web, decision support systems, situational awareness, intrusion detection, crisis management, and others. The technical content is largely multi-disciplinary, encompassing disciplines such as knowledge engineering, ontologies, statistical learning, artificial intelligence, and data mining. Offered by Systems Engr & Operations Rsch. (p. 1151). May not be repeated for credit. Equivalent to OR 584.
**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 588: Financial Systems Engineering I: Introduction to Options, Futures, and Derivatives. 3 credits.**

This course is an introduction to financial engineering. Financial engineering is a cross-disciplinary field which relies on mathematical finance, numerical methods, and computer simulations to make trading, hedging, and investment decisions. This course will introduce basic types of derivatives, such as forward, futures, swaps, and options; as well as financial models such as Brownian motion, Ito’s formula, and Black-Scholes model. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 588.

**Recommended Prerequisite:** Eng. or Math Graduate standing, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**600 Level Courses**

**SYST 611: System Methodology and Modeling. 3 credits.**

Provides broad yet rigorous foundations and applications of dynamic modeling. Emphasizes methodologies used across various disciplines. Topics include modeling and analysis of time-driven and event-driven, linear and nonlinear systems. The applications are presented with real-world example systems. Methodologies address dynamic systems using the concepts of composition, abstraction, execution, and performance. The issues of stochastic modeling and decision analysis are also covered. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** SYST 500 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 618: Model-based Systems Engineering. 3 credits.**

Model-based Systems Engineering (MBSE) provides a formalized application of modeling to support the engineering of systems. The purpose of the course to study and practice the leading methodologies for MBSE and illustrate the MBSE approaches in systems engineering and management. The advanced objected-oriented systems engineering methodology and model transformation techniques are addressed. Software tools are introduced and used for supporting systems engineering design. Students are expected to develop a system design of their choice using MBSE approaches presented in class and they will make presentations on these designs. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** SYST 520.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 620: Discrete Event Systems. 3 credits.**

Introduces modeling and analysis of discrete event dynamical systems. Course covers elements of discrete mathematics and then focuses on Petri Net models and their basic properties. Relation to other discrete event models of dynamical systems. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to ECE 673.

**Recommended Prerequisite:** SYST 611 or ECE 521, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.
Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 621: Systems Architecture Design.** 3 credits.
Architecture design and representation and the methodologies used to obtain them. Approaches based on system engineering constructs such as object orientation and service oriented architectures are used to design architectures and then represent them in conformance with an architecture framework such as DoDAF. Executable models of the architecture are derived to be used for architecture evaluation. Examples from current practice are used. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to ECE 674.

**Recommended Prerequisite:** SYST 520/ECE 550.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 630: Systems Engineering Management II.** 3 credits.
Study of more advanced topics in systems engineering management. Students expected to read selections from current literature as well as make presentations and produce papers on engineering management topics. Work in groups to create SEMP, RMP, and PAP. Focuses strongly on the practical impacts of various system engineering management techniques and practices on projects, organizations, and personnel. Offered by Systems Engr & Operations Rsch (p. 1151). Limited to two attempts.

**Recommended Prerequisite:** SYST 471 or SYST 530.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Students with the terminated from VSE major attribute may **not** enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 659: Topics in Systems Engineering.** 3 credits.
Topics not covered in department’s regular systems engineering offerings. Course content may vary each semester depending on instructor and the perception of students’ needs. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the term for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 660: Air Transportation Systems Modeling.** 3 credits.
Introduces range of current issues in air transportation, including public policy toward the industry, industry economics, system capacity, current system modeling capability, human factors considerations, safety analysis and surveillance systems, and new technological developments. Students expected to develop broad understanding of contemporary and future issues. Knowledge evaluated through class discussions, a take-home midterm exam and a term project to be completed by the end of the semester. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 660.

**Recommended Prerequisite:** SYST 460/560, or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 664: Bayesian Inference and Decision Theory.** 3 credits.
Introduces decision theory and relationship to Bayesian statistical inference. Teaches commonalities, differences between Bayesian and frequentist approaches to statistical inference, how to approach statistics problem, and how to combine data with informed expert judgment to derive useful and policy relevant conclusions. Teaches theory to develop understanding of when and how to apply Bayesian and frequentist methods; and practical procedures for inference, hypothesis testing, and developing statistical models for phenomena. Teaches fundamentals of Bayesian theory of inference, including probability as
a representation for degrees of belief, likelihood principle, use of Bayes Rule to revise beliefs based on evidence, conjugate prior distributions for common statistical models, and methods for approximating the posterior distribution. Introduces graphical models for constructing complex probability and decision models from modular components. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to CSI 674, OR 664.

Recommended Prerequisite: STAT 544, STAT 554, or equivalent.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 670: Metaheuristics for Optimization. 3 credits.
Course on the theory and practice of metaheuristics, i.e. solution search techniques for solving combinatorial optimization problems. It will introduce the theory, applications (scheduling in manufacturing, transportation, and in other engineering and service industries), and computational aspects of directly searching for solutions to solve computationally complex optimization problems without a well-defined analytical model. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 670.

Recommended Prerequisite: OR 441/541 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 671: Judgment and Choice Processing and Decision Making. 3 credits.
How do people make judgments and decisions? Course presents initial review of scientific literature directed toward answering this question, and emphasizes importance when performing decision analysis and designing systems to support judgment and decision processes. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 671.

Recommended Prerequisite: STAT 344/354, OR 542 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 674: Dynamic Programming. 3 credits.
Theory and practice of dynamic programming, i.e., optimal sequential decision making over time in the presence of uncertainties is covered. Stresses intuition, the mathematical foundations being for the most part elementary. It will introduce the theory, applications (finance, engineering, and biology), and computational aspects of dynamic programming for deterministic and stochastic problems. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 674.

Recommended Prerequisite: OR 442 or OR 542 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 675: Reliability Analysis. 3 credits.
Introduction to component and system reliability, their relationship, and problems of inference. Topics include component lifetime distributions and hazard functions, parameter estimation and hypothesis testing, life testing, accelerated life testing, system structural functions, and system maintainability. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 675.

Recommended Prerequisite: STAT 544/554, OR 542 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 680: Principles of Command, Control, Communications, Computing, and Intelligence (C4I).** 3 credits.
Broad introduction to fundamental principles of command, control, communications, computers, and intelligence (C4I). Principles and techniques applicable to wide range of civilian and military situations. Discusses modeling and simulation of combat operations. Studies in detail sensing, fusion, and situation assessment processes. Derives optimal decision-making rules; discusses concepts of C4 architectures; and develops tools to evaluate and design C4 systems such as queuing theory. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to ECE 670.

**Recommended Prerequisite:** ECE 528 or OR 542 or SYST 611 or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 682: Space Systems Engineering.** 3 credits.
Overview of the scientific and engineering foundations of spacecraft systems and interaction among satellite subsystems. Topics include fundamentals on astrodynamics, power, communications, command and data handling, thermal management, attitude control, mechanical configuration, structures and launch systems. In addition to traditional instruction, a number of case studies and a team design project provide further breadth and exposure. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Recommended Prerequisite:** SYST 520

**Registration Restrictions:**
**Required Prerequisites:** SYST 500 and MATH 203.
- Requires minimum grade of B-.
- Requires minimum grade of B-.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 683: Modeling, Simulation, and Gaming.** 3 credits.

**Recommended Prerequisite:** MATH 213, SYST 500 or equivalent, and graduate standing.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 687: Cybersecurity Systems Engineering.** 3 credits.
This course addresses cybersecurity from the standpoint of systems engineers. It introduces core principles for the design and management of resilient and robust systems throughout their complete lifecycle. Topics include but are not limited to lifecycle assurance of systems, risk analysis, models for secure systems development and management, gap analysis, quantitative methods for cybersecurity, and special topics in cybersecurity. The course also covers the technology and methodologies for assessing system vulnerabilities, measuring and modeling risk, reducing uncertainty in risk management, and others. Target audience consists of engineers who want to expand their skill sets to better align with the demands of current cyber security jobs, as well as those who intend to work on cyber security research. Cyber security professionals would also benefit from the course by being exposed to a systems engineering, holistic perspective on cyber security design, development, and management. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 688: Financial Systems Engineering II: Derivative Products and Risk Management.** 3 credits.
Financial engineering is a cross-disciplinary field which relies on mathematical finance, numerical methods, and computer simulations to make trading, hedging, and investment decisions, as well as facilitating the risk management of those decisions. This course will focus on risk management for both market risk and credit risk. It will cover a broad range of derivatives products and hedging strategies with emphasis on how risks are managed in financial institutions. Offered by Systems Engr
Recommended Prerequisite: OR 588 or SYST 588 or permission of instructor.

Registration Restrictions: Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

SYST 735: Advanced Stochastic Simulation. 3 credits.
Special topics and recent developments in Monte Carlo simulation methodology for discrete-event stochastic systems. Contents vary; possible topics include statistical analysis of simulation output data, random number and random variate generation, variance reduction techniques, sensitivity analysis and optimization of simulation models, distributed and parallel simulation, object-oriented simulation, and specialized applications. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 735.

Recommended Prerequisite: OR 635 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

SYST 740: Advances in Multi-Modeling. 3 credits.
Focuses on the inter-operation of multiple models expressed in different modeling languages but which draw from the same data set: i.e., multi-modeling. Socio-technical systems often require a variety of modeling tools to define their operation accurately. An ontology based approach is used to analyze the validity of a proposed modeling architecture and workflow to address a specific issue. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Recommended Prerequisite: SYST 620 or ECE 673 or permission of instructor.

Registration Restrictions: Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading: This course is graded on the Graduate Regular scale. (p. 84)

SYST 750: Advanced Topics in Systems Engineering. 3 credits.
Advanced topics not covered in department’s regular systems engineering offerings. Course content may vary each semester depending on instructor and the perception of students’ needs. May be repeated for credit when topics are distinctly different. Offered by Systems Engr
Recommended Prerequisite: 600-level course that varies with content of course.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 763: Research Methods in Systems Engineering and Information Technology. 3 credits.
Examines alternative paradigms of scientific research and their applicability to research in information technology. Topics include fundamental elements of scientific investigation, basic principles of experimental design and statistical induction, philosophy of science and its relation to the information technology sciences, and case studies of information technology research. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 763.

Recommended Prerequisite: STAT 554, OR 542, or permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 787: Cybersecurity Systems Engineering. 3 credits.
This course addresses cybersecurity from the standpoint of systems engineers. It introduces core principles for the design and management of resilient and robust systems throughout their complete lifecycle. Topics include but are not limited to lifecycle assurance of systems, risk analysis, models for secure systems development and management, gap analysis, quantitative methods for cybersecurity, and special topics in cybersecurity. The course also covers distinct technologies for assessing system vulnerabilities, measuring and modeling risk, reducing uncertainty in risk management, and others. Target audience consists of engineers who want to expand their skill sets to better align with the demands of current cyber security jobs, as well as those who intent to work on cyber security research. Cyber security professionals would also benefit from the course by being exposed to a systems engineering, holistic perspective on cyber security design, development, and management. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

SYST 799: Master's Thesis. 1-6 credits.
Research project chosen and completed under the guidance of a graduate faculty member, which results in a technical report acceptable to a three-member faculty committee, and an oral defense. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the degree.

Recommended Prerequisite: 21 graduate credits and permission of instructor.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

800 Level Courses

SYST 842: Models of Probabilistic Reasoning. 3 credits.
Survey of alternative views about how incomplete, inconclusive, and possibly unreliable evidence might be evaluated and combined. Discusses Bayesian, Baconian, Shafer-Dempster, and Fuzzy systems for probabilistic reasoning. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit.
**Recommended Prerequisite:** STAT 544, OR 542, OR 681 or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 850: Topics in Systems Integration Engineering.** 3 credits.
Covers lifecycles; large systems comprising heterogeneous components; human, organizational, and technological basis for integration; societal and cultural basis; conceptual frameworks; structure, function, and purpose of industry; risk management; user requirements and functional specifications; bid and proposal process; systems integration and federal government; standards; integration of systems and federations of systems; integrated process and product development; architectures; systems management and cost estimation; reengineering; quality management; increasing returns to scale, network effects, and path dependency issues; and systems integration ecology and evolutionary systems integration Notes: May be repeatable if topics are substantially different. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 944.

**Recommended Prerequisite:** SYST 510 or SYST 520.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SYST 888: Distributed Estimation and Multisensor Tracking and Fusion.** 3 credits.
Centralized and distributed estimation theory, hierarchical estimation, tracking and data association, multisensor multtarget tracking and fusion, distributed tracking in distributed sensor networks, track-to-track association and fusion, and Bayesian networks for fusion. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 888.

**Recommended Prerequisite:** ECE 734 or SYST 611.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**900 Level Courses**

**SYST 944: The Process of Discovery and Its Enhancement in Engineering Applications.** 3 credits.
Studies ingredients of imaginative reasoning as they concern efficient discovery of new ideas and valid evidential test of them. Topics include different interpretations of Peirce's theory of abductive reasoning and other forms of reasoning, Hintikka's analysis of process of inquiry, and current attempts to design systems that provide assistance in discovery-related or investigative activities. Offered by Systems Engr & Operations Rsch (p. 1151). May not be repeated for credit. Equivalent to OR 944.

**Recommended Prerequisite:** IT 842, or permission of instructor.

**Registration Restrictions:**
Enrollment is limited to Graduate level students.

Enrollment limited to students in the College of Science or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**Systems Engineering and Operations Research (SEOR)**

**700 Level Courses**

**SEOR 750: Advanced Topics in Systems Engineering and Operations Research.** 3 credits.
Advanced topics, applications, or recent developments in the interface of systems engineering and operations research. Course content may vary each semester depending on instructor and the perception of students' needs. May be repeated for credit when topics are distinctly different. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** 600-level course.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**SEOR 796: Directed Reading and Research.** 1-3 credits.
Reading and research on specific topic in systems engineering or operations research under direction of faculty member. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 900 Level Courses

**SEOR 998: Doctoral Dissertation Proposal.** 1-12 credits.
Work on research proposal that forms basis for doctoral dissertation. Notes: No more than 24 credits of SEOR 998 and 999 may be applied to doctoral degree requirements. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the degree.

**Registration Restrictions:**
Enrollment limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**SEOR 999: Doctoral Dissertation.** 1-12 credits.
Formal record of commitment to doctoral dissertation research under direction of faculty member approved by SEOR Department. Offered by Systems Engr & Operations Rsch (p. 1151). May be repeated within the degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Enrollment limited to students in the Volgenau School of Engineering college.

**Schedule Type:** Dissertation

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

### Technology Management (TECM)

#### 600 Level Courses

**TECM 601: Business Models.** 1 credit.
Provides an introduction to high tech industries, emerging technologies and business models that are transforming technology-intensive industries such as music, financial services and healthcare. The course covers techniques for analyzing how organizations create, deliver and capture value. The students use case-based approach to analyze traditional and high-tech organizations to understand their business models, and identify causes for success and failures. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 603: IT Leadership and the Global CIO.** 1 credit.
This course provides an introduction and overview of Information Technology (IT) leadership and the role of the evolving CIO. The focus is on the global nature of the CIO position in organizations today. The relationship between the CIO and other c-level executives is examined including new positions such as the Chief Digital Officer that overlap with the CIO position. The responsibilities of the CIO in organizations in the US and abroad are explored. This course integrates with the global residency and global business perspectives course. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 611: Leadership and Change Management.** 2 credits.
Examines the critical roles and functions of leadership with special attention to how leaders influence organizational performance and manage change. Topics include providing direction, creating a culture for effectiveness, the use of power and influence, leadership development, leading under changing conditions, and leading and managing change. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MSIS 611.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 614: Financial and Cost Accounting.** 2 credits.
Focuses on the economics and analysis of business transactions and financial reporting. Topics include an introduction to the financial reporting framework, review of how accountants measure and manage financial reporting, an introduction to cost concepts and product costing, and an analysis of capital investments and management control. Emphasis is placed on providing an analytic framework for evaluating transactions and companies. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MSIS 614.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 620: Economics of Global Technology Management.** 1-3 credits. This course will take an economics-based approach to developing a framework for managers to use in analyzing problems and making decisions in a global business context. Emphasis will be placed on the importance of incentives and information in shaping decisions and results. Major elements to be treated include factors influencing the global demand for products and services, the nature of input-output relationships, the determinants of costs and profitability, and the global competitive environment within which firms operate. Particular attention will be directed toward the role of information-technology resources in determining organizational performance, the significant features of global markets related to information technology, and the potential for innovation to create competitive advantages. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MSIS 620.

**Recommended Prerequisite:** Admission to Technology Management Program or permission of the program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 635: Decision Models for Technology Management.** 1-3 credits. Explores current metrics and metric development for quality, intangible assets, and project management as required within information technology companies. Applies statistical tools of best use with these metrics. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MSIS 635.

**Recommended Prerequisite:** Admission to Technology Management Program or permission of the program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 641: Negotiation and Conflict Management.** 1-3 credits. Students acquire insights and skills for negotiation and conflict resolution as they relate to a variety of organizational situations - including teamwork, communication and coordination, power and influence, legal disputes, career development, cross-cultural and international issues, as well as tackling ethical problems. The course is highly experiential, and is built on a foundation of hands-on exercises and extensive class discussion. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 643: Managerial Finance.** 2 credits. Surveys the theory and practice of corporate financial management with specific application to the technology sector. Students develop an understanding of key elements required in the valuation of project alternatives; including their strategic importance. Students evaluate and use financial management models and gain an understanding of how finance can be employed as a source of potential competitive advantage. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MSIS 643.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 696: Directed Studies in Technical Management.** 1-3 credits. Approval by faculty member and program director required prior to registration. Studies specialized topics in business not otherwise available in the curriculum. Offered by School of Business (p. 888). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Admission to the TECM program or permission of the program director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Schedule Type: Independent Study
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 697: Special Topics in Technology Management. 1-3 credits.
Sections established as necessary to focus on various topical issues that emerge in practice of business. Offered by School of Business (p. 888). May be repeated within the term for a maximum 6 credits.

Recommended Prerequisite: Admission to the TECM program or permission of the program director.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

700 Level Courses

TECM 702: Building High Performance Global Teams. 2 credits.
This course seeks to deepen your understanding of human behavior in organizations and to improve your ability to manage human capital from a global business perspective. Topics include effective managerial learning, problem solving, decision making, building and maintaining effective work relationships, building and leading teams, and motivating and evaluating performance from a cultural and international business context. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students with a major in Professional Studies(Tech Mgt) or Technology Management.

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Special scale. (p. 84)

TECM 711: Deriving Strategic Value from IT Investments. 2 credits.
Reviews approaches for aligning IT strategy and investment with organizational strategy. The course covers methodologies for IT investment, planning and control including cost benefit, economic and risk analysis; benefits of alternative IT investments; methods of technology road mapping; and capital investment analysis. IT performance assessment methodologies and acquisition planning and design, are also reviewed. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MSIS 711.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 720: Competitive Strategy in Technology Industries. 2 credits.
Provides students with an understanding of the impact of information technology on firms and industries and equips them to develop and execute appropriate strategies. Although the emphasis is on information technology firms and industries, a key goal of the course is to better prepare students to respond to a diverse array of information technology challenges. Course work covers the demand and the supply side of information technology, as well as the development of frameworks and analytical tools to help put events, behaviors, and processes into understandable contexts. Offered by School of Business (p. 888). May not be repeated for credit.

Recommended Prerequisite: Admission to Technology Management Program or permission of the program director. TECM 615 and 620.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 721: Digital Transformation. 1-3 credits.
This course will focus on understanding IT strategy and the alignment to business strategy and current digital transformation initiatives. Digital transformation represents a major initiative for most companies and requires considerable organizational change over time. Many companies have hired Chief Digital Officers to lead this effort in companies. This course will provide industry perspectives on digital transformation trends and competitive implications. Industry examples and company strategies will be examined. Students will learn the skills to set a vision, develop a
strategy, and execute a plan for digital transformation for an organization. This course is designed around industry perspectives with experts on digital transformation across industries participating in the classes. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 735:** Technology Management Capstone Project. 0 credits.
Teams undertake a strategic evaluation and plan for IT-driven business initiatives. Presentation includes analysis of competitive forces and the value chain; recommendations, including changes in goals and organizational design; plan of action integrating marketing, human resource development, organizational design, finance, and information technology; and implementation plan using theories of communication and change management, to include business case and business plan. Offered by School of Business (p. 888). May not be repeated for credit. Equivalent to MSIS 735.

**Recommended Prerequisite:** Admission to Technology Management Program or permission of the program director.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**TECM 745:** Leading and Managing IT Operations. 2 credits.
Explores best practices in the IT industry. Students analyze practices in terms of gaining competitive advantage in an industry where the scarcity economic model for products no longer applies. Course work focuses on leading an organization with the IT function. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to students with a major in Professional Studies(Tech Mgt) or Technology Management.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TECM 746:** Enterprise Architecture and IT Governance. 2 credits.
Examines the operational, financial and strategic considerations of leading enterprise architecture and reviews the historical development of enterprise architecture. Major enterprise architecture frameworks including Zachman and TOGAF are examined. The relationship of enterprise architecture to IT governance, approaches to IT governance and the role of the CIO, and the relationship of IT governance to organizational performance, are also discussed. Offered by School of Business (p. 888). May not be repeated for credit.

**Registration Restrictions:**
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
Register Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 747: Information Assurance and Security Management. 2 credits.
Addresses the increasingly critical areas of information security and information assurance. Specific focus is on best practices for assessment, planning and management of information security strategy, policy, organizations and controls to minimize the risks pertaining to unauthorized use, processing, storage, and communication of digital information. Pertinent legislation and policy requirements are also covered. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 749: Developing and Emerging Technologies. 1–3 credits.
This course will focus on an understanding of the current technology landscape of emerging technologies and technologies that are moving into the maturing phase. It is essential that IT leaders keep abreast of the latest technologies and understand the implications for industries, the workplace, and society. Emerging technologies can be disruptive to business as usual and understanding the business implications early is crucial for success. The course is designed around industry perspectives with experts on various technologies participating in the classes. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to students for a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 750: Global Technology Management. 1–3 credits.
Provides the opportunity for students to spend a week in a country or countries that are leading edge in technology and technology management. Students visit corporations and governments and interact with corporate and IT executives, and government leaders. Topics include CIO and eGovernment, commercialization of emerging technologies, national competitiveness, international development, global supply chains and virtual teams. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 752: Global Technology Management. 1–3 credits.
Provides the opportunity for students to spend a week in a country or countries that are leading edge in technology and technology management. Students visit corporations and governments and interact with corporate and IT executives, and government leaders. Topics include CIO and eGovernment, commercialization of emerging technologies, national competitiveness, international development, global supply chains and virtual teams. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 753: Global Leadership Perspectives. 1–3 credits.
This course will focus on understanding global dimensions of doing business across borders that IT leaders need to understand to conduct their business successfully. It has become essential that IT leaders understand the political, legal, economic, social, and technological issues that impact business operations in other countries. Global supply chains and integration of technology through global networks require an understanding of global operations, differences in negotiating contracts, and importance of establishing relationships. Understanding differences and similarities in developing and emerging markets is key to reverse innovation success in these markets. This course is designed around industry perspectives with various experts on global topics participating in the classes. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 760: CIO Applied Project. 1–3 credits.
This course represents the applied project for the CIO Certificate. Students will develop a strategic IT project that addresses an IT issue that impacts business operations in other countries. Global supply chains and integration of technology through global networks require an understanding of global operations, differences in negotiating contracts, and importance of establishing relationships. Understanding differences and similarities in developing and emerging markets is key to reverse innovation success in these markets. This course is designed around industry perspectives with various experts on global topics participating in the classes. Offered by School of Business (p. 888). May not be repeated for credit.

Registration Restrictions:
Required Prerequisites: TECM 602B, 620B, 702B, 752B, and 763B.
B- Requires minimum grade of B.

Enrollment is limited to students with a major in Technology Management.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Fieldwork

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TECM 761: Global IT Leadership Applied Project. 1–3 credits.
This course is a Global IT applied project that intersects with a specific company need and student team interest. Students will work in teams to complete a project that relates to global IT management and provides value to the company undertaking the project. Projects may focus on global reverse innovation strategies, global expansion strategies, merger and acquisition strategies across borders, or other project that has a
substantial IT component that IT leaders might encounter. Students will present their recommendations to representatives of the company and/or faculty and others from the business community. Offered by School of Business (p. 888). May be repeated within the term for a maximum 3 credits.

**Registration Restrictions:**
**Required Prerequisites:** TCOM 602\(^B\), 620\(^B\), 702\(^B\) and 752\(^B\).
- \(^B\) Requires minimum grade of B-.

Enrollment is limited to students with a major in Global IT Leadership or Technology Management.

Enrollment is limited to Graduate level students.

**Schedule Type:** Fieldwork

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 762:** IT Strategy and Digital Transformation Applied Project. 1-3 credits.
This course represents the applied project for the IT Strategy and Digital Transformation Certificate. Students will work in teams to develop a digital transformation strategy for a company. Company representatives will work with students to develop the strategy based on requirements of the company that may be comprehensive or focus on a particular domain such as customer experience. Prior course work provides the foundation and skills for students to complete this applied project. Students will present their recommendations to representatives of the company and/or faculty and others from the business community. Offered by School of Business (p. 888). May be repeated within the term for a maximum 3 credits.

**Registration Restrictions:**
**Required Prerequisites:** TCOM 602\(^B\), 620\(^B\), 702\(^B\) and 752\(^B\).
- \(^B\) Requires minimum grade of B-.

Enrollment is limited to students with a major in Global IT Leadership or Technology Management.

Enrollment is limited to Graduate level students.

**Schedule Type:** Fieldwork

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**Telecommunications (TCOM)**

**500 Level Courses**

**TCOM 500:** Modern Telecommunications. 3 credits.
Comprehensive overview of telecommunications, including current status and future directions. Topics include review of evolution of telecommunications; voice and data services; basics of signals and noise, digital transmission, network architecture and protocols; local area, metropolitan and wide area networks and narrow band ISDN; asynchronous transfer mode and broadband ISDN; and satellite systems, optical communications, cellular radio, personal communication systems, and multimedia services. Examples of real-life networks illustrate basic concepts and offer further insight. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 575, or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 514:** Basic Switching: Lecture and Laboratory Course. 3 credits.
Basic switching techniques and protocols for low and high-speed digital packet networks (Ethernet, Frame Relay, ATM, X.25) are taught within a half semester lecture series, followed by hands-on laboratory for remainder of semester. Real-life scenarios taught in the laboratory element through exercises that involve configuring switches and routers. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 530.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 515:** Internet Protocol Routing: Lecture and Laboratory Course. 3 credits.
Internet Protocol (IP) routing overview; static routing; dynamic routing; default routing; access lists; route redistribution; RIP, OSPF, IGRP, EIGRP, IS-IS, and BGP protocols submitted for comment. Real-life scenarios taught in laboratory element through exercises that involve configuring routers as network elements. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 535.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.
Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 521: Systems Engineering for Telecommunications Management.** 3 credits.
Advanced software principles, techniques, and processes for designing and implementing complex telecommunication systems. Planning and implementation of telecommunications systems from strategic planning through requirements, initial analysis, general feasibility study, structured analysis, detailed analysis, logical design, and implementation. Current system documentation through use of classical and structured tools and techniques for describing flows, data flows, data structures, file designs, input and output designs, and program specifications. Practical experience gained through project. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 500.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 530: Data Communications Fundamentals.** 3 credits.
Covers the foundations of modern data communications. The lower layers of the OSI reference model are discussed with an emphasis on the data link and the network layers. Concepts are illustrated by drawing examples from important data networks ranging from local are networks to the Internet. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 535: The TCP/IP Suite of Internet Protocols.** 3 credits.

**Recommended Prerequisite:** TCOM 530.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 547: Project Management in Telecommunications.** 3 credits.
Develops integrated approach to managing major telecommunications project; evaluates and uses tools and software for project management, with specific goals of containing costs and time overruns; introduces elements for resolving conflict resolution and applying motivation within project team, and gaining the ability to monitor and control projects in changing environment; develops understanding of unique attributes of major telecommunications systems such as interoperability requirements and international technical standards. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 551: Digital Communication Systems.** 3 credits.
Digital transmission of data, voice, and video. Covers signal digitization; modulation and demodulation; error correction coding; multiple access methods; multiplexing; synchronization; channel equalization; frequency spreading; encryption; transmission codes; digital transmission using bandwidth compression techniques; elements of information theory; and development of link budget evaluation such as system noise temperature, Nyquist filter concepts, antenna gain, and filter bandwidth. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.
Recommended Prerequisite: TCOM 500.

Registration Restrictions:
Enrollment restricted to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TCOM 552: Introduction to Mobile Communications Systems. 3 credits.
Introduces mobile communication system design and analysis. Topics include mobile communication channel, access and mobility control, mobile network architectures, connection to fixed network, and signaling protocols for mobile communication systems. Offers examples of mobile communication systems including panEuropean GSM system, North American DAMPS system, and Personal Communication Systems. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: TCOM 500, TCOM 551.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TCOM 561: Security, Privacy, and Applied Cryptography for Telecommunications. 3 credits.
Introduces the full spectrum of network security. Topics include taxonomy such as language commonality in incident handling, national strategy for secure cyberspace, and cybersecurity organizations; organizational structure for network defense; best practices, security policy, and threats; actors and tools, countermeasures, vulnerability identification/correction, intrusion detection, and impact assessment; firewalls and intrusion detection systems; antivirus software; active defense; disaster recovery; and law enforcement and privacy issues. Reviews threats and vulnerabilities in network systems based on reports, case studies available in the literature, and actual experience. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: TCOM 500 and TCOM 530.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TCOM 598: Independent Study in Telecommunications. 1.5-3 credits.
Directed self-study of special topics in telecommunications that relate to
specialty modules 1, 2, and 3. Topics must be arranged with instructor
and approved by program director before registering. Notes: May be taken
for either 1.5 credits or 3.0 credits in fall and spring semesters. No more
than total 6 credits may be taken from combination of TCOM 598, 599,
696, and 697 courses for credit in TCOM program. Offered by Electrical &
Comp. Engineering (p. 1086). May be repeated within the degree for a
maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of
Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

600 Level Courses

TCOM 606: Advanced Mobile Communications Systems. 3 credits.
Introduction to post-second generation cellular systems; benefits and
features of third-generation (3G) systems and personal communications
services (PCS); review of air interface standards and transmission
technologies for mobile and quasi-stationary wireless systems, including
cellular networks, satellite networks, indoor systems (Wi-Fi, Personal
Local Area Networks, Orthogonal Frequency Multiplexing, Ultra Wide
Band technologies); review of network control strategies; investigation
of user authentication, privacy, and data and voice encryption aspects.
Evolving technology, analysis of competing multiple access methods,
transition plans, and backward compatibility between 2G, 21/2 G, 3G,
and future systems, with possible fallback plans. Offered by Electrical &
Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: TCOM 552.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of
Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TCOM 607: Satellite Communications. 3 credits.
Topics include introduction to satellite communications systems;
historical aspects; orbital mechanics and launchers; satellite
components such as payload, orbital maneuvering systems, cooling
systems, and antennas; look angle predictions; link budget; overall
link design; multiple access such as TDMA, CDMA, ALOHA, TDMA, and
MFTDMA; error control for digital satellite links; propagation effects on
satellite links; elements of VSAT systems and nongeostationary satellite
systems; and direct broadcast satellite services. Offered by Electrical &
Comp. Engineering (p. 1086). May not be repeated for credit.

Recommended Prerequisite: TCOM 551.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of
Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TCOM 608: Optical Communications Systems. 3 credits.
Introduction and Overview of Optical Fiber Communications Systems
and Optical Communication Networks. Specific topics include Optical
Resonators; Photons and Matter, Lasers, Photons in Semiconductors;
Semiconductor Photon Sources and Detectors; Light Emitting Diodes;
Modulation of Optical Signals; Optoelectronic Networks; FDDI, Fiber
channel, SONET, SDH, Ethernet on Optical Networks; Wavelength Division
Multiplexing (WDM) networks; Basics of Fiber Optic System Design.
Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated
for credit.

Recommended Prerequisite: TCOM 500.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy,
Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level
students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of
Policy and Gov or Volgenau School of Engineering colleges.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TCOM 609: Interior Gateway Protocol (IGP) Routing. 3 credits.
Discusses development of Interior Gateway Protocols, including
standards documents; interaction between various interior and exterior
gateway protocols; design procedures and implementation aspects; field
trial issues; and analysis of latest RFC information posted on IETF web
site. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 515 and TCOM 535, or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 610:** *Border Gateway Protocol (BGP) Routing*. 3 credits.
Discusses development of Border Gateway Protocol and its application in today's Internet routing architecture. Covers evolution of Internet, BGP routing standard specifications (RFCs), interaction between various routing protocols, network BGP routing design principals and procedures for enterprise and ISP networks, BGP's real-world implementation and configuration syntax, network scalability and convergence issues, and the latest extension and proposals for new standards. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 509 and TCOM 515, or equivalent.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 611:** *Multi-Protocol Label Switching (MPLS)*. 3 credits.
Develops full understanding of Multi-Protocol Label Switching (MPLS) theory, technology, and implementation aspects through detailed analysis of MPLS routing concepts and protocol stacks, and completion of major project to reinforce understanding of MPLS. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 609 or 610

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 614:** *Advanced Routing Lab*. 3 credits.
Covers the principles and theory of Multiprotocol Label Switching (MPLS). Topics include MPLS Architecture, Label Distribution Protocols, MPLS Virtual Private Network, MPLS traffic engineering, Any Transport over MPLS (AToM), and Quality of Service (QoS). The class is interleaved with hands-on labs, detailing how to implement and troubleshoot MPLS and its applications. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 535 and (TCOM 514 or TCOM 515)

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 616:** *Scalable Network Architecture*. 3 credits.
Covers concepts and protocols associated with designing highly available and scalable networks on the cloud. Topics include server class operating systems and their application in Internet and enterprise deployments, techniques used to support an enterprise cloud network, networking in virtualized environments and fundamentals of cloud computing. Course also includes exercises and lab work that applies concepts learned throughout the course. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 514, TCOM 515 and TCOM 535

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Laboratory, Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 617:** *Enterprise Network Architecture*. 3 credits.
Cover various advanced technologies used in ensuring quality for critical business applications and cost-effective solutions for providing both secure and non-secure communication across a public infrastructure. Topics covered include Quality of Service Performance Routing (PFR), IPSec Virtual Private Networks (VPNs), and Data Center Interconnect (DCI). Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 535

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 631:** Voice Over IP. 3 credits.

Presents the protocols used for transporting voice over Packet Switched Network. Topics include: Signaling basics; Topics; VoIP Network Scenarios and Connection Strategies; Communication Protocols: RTP, RTCP; VoIP Decomposition; Performance and quality metrics for VoIP; VoIP Signaling Protocols: H.323, SIP, SS7; Softswitches: architecture, functionality, application; VoIP-PSTN integration and migration; VOIP Quality and QoS; VoIP Security: Vulnerabilities, remedies; NextGen VoIP. VoIP Mobility, Equipment, Voice XML, IMS; Future of VoIP. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 535.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 653:** Global Positioning System (GPS). 3 credits.


**Recommended Prerequisite:** TCOM 500.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 660:** Network Forensics. 3 credits.

Deals with collection, preservation, and analysis of network-generated digital evidence so it can be successfully presented in civil or criminal court of law. Examines relevant federal laws and private sector applications. Examines capture/intercept of digital evidence, analysis of audit trails, recordation of running processes, and reporting of such information. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to CFRS 660.

**Recommended Prerequisite:** TCOM 535, and working knowledge of computer programming.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 661:** Digital Media Forensics. 3 credits.

Covers the collection, preservation, and analysis of digital media such that the evidence can be successfully presented in a court of law (both civil and criminal). The relevant federal laws and private sector applications will be examined, as well as the seizure, preservation, and analysis of digital media. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to CFRS 661.

**Recommended Prerequisite:** CFRS 510 and a working knowledge of computer operating systems (e.g. CYSE 211, IT 342, or equivalent).

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the following colleges:

- College of Science
- Schar School of Policy and Gov
- School of Business
- Volgenau School of Engineering

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
TCOM 662: Advanced Secure Networking. 3 credits. Advanced technologies in network security that can be applied to enhance enterprise and ISP’s network security. Covers network perimeter defense concept and various components for complete layered defense system. Examines each component and its technologies, including TCP/IP protocol vulnerabilities, router access control list (ACL), dynamic ACL, firewall, network address translation (NAT), virtual private network (VPN), IPSec tunnels, intrusion detection system (IDS), routing protocol security, denial-of-service (DOS) attack, DOS detection and mitigation techniques. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** TCOM 535 and TCOM 562, and a working knowledge of network routing protocols.

**Registration Restrictions:** Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

TCOM 663: Operations of Intrusion Detection for Forensics. 3 credits. Introduces students to network and computer intrusion detection and its relation to forensics. Addresses intrusion detection architecture, system types, packet analysis, and products. Presents advanced intrusion detection topics such as intrusion prevention and active response, decoy systems, alert correlation, data mining, and proactive forensics. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit. Equivalent to CFRS 663.

**Recommended Prerequisite:** TCOM 535 and a working knowledge of computer programming.

**Registration Restrictions:** Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

TCOM 690: Advanced Topics in Telecommunications. 3 credits. Advanced topics from recent developments and applications in various engineering disciplines in specialty modules 1, 2, and 3 of TCOM program. Advanced topics chosen so that they do not duplicate existing TCOM courses. Active participation of students encouraged in form of writing and presenting papers in various research areas of advanced topic. Enhances professional engineering community’s understanding of breakthrough developments in specific areas. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** Permission of instructor; specific prerequisites vary.

**Registration Restrictions:** Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:** This course is graded on the Graduate Regular scale. (p. 84)

TCOM 696: Independent Reading and Research. 1.5-3 credits. Study of selected area in specialty modules 1, 2, or 3 under supervision of faculty member. Written report required. Notes: No more than total of 6 credits may be taken from combination of TCOM 598, 599, 696, and 697 for credit in TCOM program. Offered by Electrical & Comp. Engineering (p. 1086). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:** Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Independent Study

**Grading:**

This course is graded on the Graduate Special scale. (p. 84)

**TCOM 698:** **Telecommunications Projects Course.** 3 credits.

To be taken toward end of degree program within any of modules 1, 2, or 3. Primary activity is completing major applied project, preferably with group of two to three people. Secondary goal is consolidating training before graduation so that, in some cases, it may act as capstone course. Students and outside telecommunication industry managers present ideas for projects and, through grouping of students, new skills and approaches may be learned. Some class time used for discussion of projects, either to monitor progress or explore alternative approaches. Readings, class-time discussion of current trends, difficulties, and new opportunities for industry most relevant to module. Concludes with presentations of projects to department faculty. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** Graduate standing with at least 18 credits or permission of department.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (p. 84)

**TCOM 750:** **Coordinating Seminar.** 3 credits.

Open only to students in MA or MS in telecommunications programs with at least 18 credits of course work prior to registration. Topics include specific telecommunications problems in management, law, engineering, education, and communications. Focuses on ways a problem in one area can create or solve a problem in other areas. Offered by Electrical & Comp. Engineering (p. 1086). May not be repeated for credit.

**Recommended Prerequisite:** Open only to students in the MA or MS in telecommunications programs with at least 18 credit hours of course work prior to registration.

**Registration Restrictions:**

Enrollment limited to students with a major in Telecommunications or Telecommunications.

Enrollment is limited to Graduate or Non-Degree level students.

**Recommended Prerequisite:** Open only to students with a major in Telecommunications or Telecommunications.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Enrollment limited to students in the College of Science, Schar School of Policy and Gov or Volgenau School of Engineering colleges.

**Schedule Type:** Laboratory

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 101:** **Theatrical Medium.** 3 credits.

Theater from the inside workings of production to informed and lively engagement with the art. Enhances an understanding of the nature of theater in society. Offered by Theatre (p. 878). Limited to three attempts.

**Mason Core:** Arts (p. 142)

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 150:** **Greeks to Restoration.** 3 credits.

Examines the development of Western drama and the collective art of theater from its beginnings through Shakespeare. Considers readings in dramatic literature and history of theater in social and cultural contexts. Offered by Theatre (p. 878). Limited to three attempts.

**Mason Core:** Arts (p. 142)

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 151:** **Romanticism to Present.** 3 credits.

Considers readings in dramatic literature and history of western theater in social and cultural contexts from the romantic period to present day. Offered by Theatre (p. 878). Limited to three attempts.

**Mason Core:** Arts (p. 142)

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 191:** **Theater Support/Engagement.** 0 credits.

Each semester, registered students complete four activities in support of the School of Theater. To graduate as a Theater major, students must complete 4 semesters of the course. Offered by Theatre (p. 878). May be repeated within the term for a maximum 12 credits.

**Schedule Type:** Laboratory

**Grading:**

This course is graded on the Satisfactory/No Credit scale. (p. 84)

**THR 196:** **Performance or Design Practicum.** 1 credit.

Academic credit awarded for satisfactory completion of a minimum of 30 hours of assignment on a Mason Player production. Assignments include performance, design, and stage management. Open to all Theater majors, theater minors, and non-majors. Notes: Successful completion of this
course is required to earn a Theater degree. Offered by Theatre (p. 878)
Limited to three attempts.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**THR 197:** Stage or Literary Practicum. 1 credit.
Academic credit awarded for satisfactory completion of a minimum of 30 hours of assignment on a Mason Players production. Positions include directing, dramaturgy, and leadership in technical productions. Open to all theater majors, theater minors, and non-majors. Notes: Successful completion of this course is required to earn a Theater degree. Offered by Theatre (p. 878). Limited to three attempts.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**THR 198:** Theatrical Construction Practicum. 1 credit.
Academic credit awarded for satisfactory completion of a minimum of 30 hours of participation on a Mason Players production. Areas include scenery construction, scene painting, costume construction, props and other technical assignments. Theater majors, theater minors, and non-majors welcomed. Notes: Successful completion of this course is required to earn a Theater degree. Recommended for freshman Theater majors, first year transfers, and new Theater majors. Contact School of Theater for CRN. Offered by Theatre (p. 878). Limited to three attempts.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**THR 199:** Production Run Crew Practicum. 1 credit.
Academic credit awarded for satisfactory completion of a minimum of 30 hours of assignment on a Mason Players production. Assignments include run crew, light board operator, sound board operator, wardrobe, and fly crew. Theater majors, theater minors, and non-majors welcomed. Notes: Successful completion of this course is required to earn a Theater degree. Recommended for freshman Theater majors, first year transfers, and new Theater majors. Contact School of Theater for CRN. Offered by Theatre (p. 878). Limited to three attempts.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**200 Level Courses**

**THR 200:** Play Production Practicum. 1 credit.
Academic credit is awarded for satisfactory completion of a minimum of 30 hours of assignment on a Mason Players production. Students who have completed THR 196, THR 197, THR 198, and THR 199 may register for THR 200 to receive credit for their participation on additional productions. Offered by Theatre (p. 878). May be repeated within the term for a maximum 8 credits.

**Schedule Type:** Laboratory

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)

**THR 201:** Stage Management. 3 credits.
Introduction to the fundamentals of stage management and the stage manager’s role for production. Learn and develop the organizational skills of running and maintaining a production with emphasis on skillful methods in communication and problem solving. Analyzes text from a Stage Manager’s perspective. Requirements include creating a stage manager prompt book containing important show documents. Offered by Theatre (p. 878). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 210:** Acting I. 3 credits.
Students practice contemporary acting techniques individually and in a group. Promotes and develops performance and practical communication skills. Attend theatrical productions, and respond to those experiences. Offered by Theatre (p. 878). Limited to three attempts.

**Mason Core:** Arts (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 230:** Fundamentals of Production. 3 credits.
Students explore current production practices in scenery, costumes, lighting, and sound through classroom and hands on experience. Concepts and skills acquired in this class may be applied in theater, film, dance, game design, art, corporate events, and architecture. Lab hours include work on live performances. Offered by Theatre (p. 878). Limited to three attempts.

**Mason Core:** Arts (p. 142)

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

**THR 300:** Voice and Speech. 3 credits.
For performers, presenters, and anyone wishing to improve their speaking voice. Basic techniques in breathing, vocal production, and articulation. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 210 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 301:** Advanced Study in Voice. 3 credits.
Addresses various topics in technique of vocal production for the actor with an emphasis on playing characters for stage, radio, voice-over, and screen. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 9 credits.

**Recommended Prerequisite:** THR 300 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 303: Movement for Actors.** 3 credits.
Develops the physical aspect of the actor’s instrument emphasizing free and responsive expression of impulse and intention, as well as character development and visual storytelling. Offered by Theatre (p. 878). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 304: Advanced Movement for Actors.** 3 credits.
Advanced work in physical expression, for character development. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 305: Unarmed Stage Combat.** 3 credits.
Studies safe, effective techniques for performing violence for stage and screen. Emphasizes acting the fight, safety, and storytelling. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 210 and 310 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 306: Movement in Musical Theater.** 3 credits.
Students will explore and perform Movement for Musical Theater to include both character development and choreography. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment is limited to students with a major in Arts Management, Art and Visual Technology, Dance, Film and Video Studies, Computer Game Design, Music or Theatre.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 310: Acting I.** 3 credits.
Depends on existing skills in observation, sense memory, relaxation, and improvisation. Students learn variety of methods for scene preparation to apply to their own acting process. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 210 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 311: Acting II.** 3 credits.
Practical and theoretical instruction on becoming theatrical electrician. Includes ideas on workplace safety, basic electrical procedures, theatrical electrical production, integrating with other theater professionals, and professionalism. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 210 or permission of instructor.

**Recommended Corequisite:** THR 200.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 312: Scene Painting.** 3 credits.
A theoretical and practical study of event technology. The course will include specifications, layout installation techniques and operation of sound systems, lighting systems and video systems for event industry sectors. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 313: Scene Technical Production.** 3 credits.
Students experience the art and craft of scene painting with the goal of translating design elevations into paint on muslin. Students learn fundamental scene painting techniques and how to use them in combinations to create portraits, murals, landscapes, and textures. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**THR 314: Lighting Stagecraft.** 3 credits.
Builds on existing skills in observation, sense memory, relaxation, and improvisation. Students learn variety of methods for scene preparation to apply to their own acting process. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Recommended Corequisite:** THR 200.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
THR 321: *Acting Shakespeare*. 3 credits.
Develops understanding of challenges of performing Shakespeare by building on body of acting skills and knowledge. Focuses on how structure of language in plays reflects, reveals, and expresses character's emotional life. Students use detailed script analysis, expansion of vocal range, and use of actions and objectives to achieve experience of transforming Shakespeare's language into powerful theatrical expressions. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 210 and 310 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 329: *Directing*. 3 credits.
Introduces process for directing through text analysis, rehearsal and staging techniques, and collaborative development of production idea. Students direct and apply concepts to develop a critical and productive perspective. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 150, 151, THR 210, THR 350, or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 330: *Seminar in Technical Theater*. 3 credits.
Offered periodically; addresses selected topic in design or technical theater on advanced level. Offered by Theatre (p. 878). May be repeated within the term for a maximum 24 credits.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 331: *Drafting and Model Making*. 3 credits.
Studies conventions and techniques of drafting and model making as methods of communication in the theatrical production process. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 332: *History of Fashion and Dress*. 3 credits.
Explores evolution of silhouette, color, fabric, accessories, and make-up appropriate to development of clothing during specific historical eras. Offers broader understanding of sociological context influencing Western dress. Notes: May be repeated if specific course content differs. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 333: *Scenic Design*. 3 credits.
Fundamentals of creating, developing, and communicating design idea through sketches, plans, rendering, or models. Analysis of text from designer's perspective. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 334: *Lighting Design*. 3 credits.
Introduces the fundamentals of lighting design, including research, paperwork communication, and technology for lighting. Topics include the controllable qualities of light, basic terminology, equipment, personnel and procedures. Learn to see light and develop a shared vocabulary for describing light and the process. Analyzes texts from designer's perspective. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 335: *Costume Design*. 3 credits.
Project-oriented class emphasizing the art and process of designing costumes for the stage and screen, including historical period, script analysis, design concepts, color theory, and costume rendering. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 336: *Technical Direction*. 3 credits.
Analyze scenic units for construction including building techniques, material choices, hardware, stage rigging, and budget estimates. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 337: *Sound Design*. 3 credits.
Study theory and practice of sound design for theater and the entertainment industry. Offered by Theatre (p. 878). Limited to three attempts.

**Recommended Prerequisite:** THR 230 or permission of instructor.

**Schedule Type:** Studio

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
THR 339: Principles of Design. 3 credits.
Introduction to the principles of theatrical design. Course explores various design responsibilities and methods to create visual images for the stage through script analysis, research, and production team collaboration. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: THR 230 or permission of instructor.

Schedule Type: Studio
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 340: Advanced Studies in Directing. 3 credits.
Expands directing techniques through staging extended scenes or one-act plays. Emphasizes collaborative process and production organization. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: THR 329 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 341: Puppetry. 3 credits.
Project-oriented class emphasizing puppetry, and experiments with building and performance styles, through Original work. Offered by Theatre (p. 878). May be repeated within the term for a maximum 9 credits.

Recommended Prerequisite: THR 150 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 342: Makeup Design. 3 credits.
Project-oriented class emphasizing makeup for different performance spaces, character age analysis, facial anatomy, and specialized application for theater, opera, dance, film, and television. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: THR 230 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 343: Costume Technology. 3 credits.
This course focuses on methods of costume construction. Lectures and demonstrations will address patterning, cutting, and sewing. The class will include hands-on lab activities. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: THR 230 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 344: World Stages. 3 credits.
Introduces variety of theatrical traditions and performance theories from around the world, with special emphasis on those not covered in introductory Western drama survey courses, 150 and 151. Students read and discuss dramatic texts, performance theory, and video clips to understand variety of theatrical traditions in cultural and historical contexts. Requirements include two team presentations (taking turns as writer and presenter), one midterm paper, and one solo presentation with accompanying paper. Offered by Theatre (p. 878). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 345: Script Analysis. 3 credits.
Critical analysis of dramatic literature as preparation for production and performance. Examination of plot, character, theme, audience impact, and cultural context, and the transformation of intellectual ideas into physical theatrical production elements. Offered by Theatre (p. 878). Limited to three attempts.

Specialized Designation: Writing Intensive in Major

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 351: Dramatic Theory and Criticism. 3 credits.
Chronological study of development of dramatic theory and criticism from Plato and Aristotle through modern movements. Students read plays, theoretical works, and critical responses, and write original criticism of performances or texts. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: THR 150 or permission of instructor.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 352: Dramatic Literature Seminar. 3 credits.
Rotating topic. Intensive study of particular topic, period, or genre in dramatic literature. Notes: May be repeated if specific course content differs. Offered by Theatre (p. 878). May be repeated within the term for a maximum 9 credits.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 355: Moral Vision in American Theater. 3 credits.
Examines vision of American society created and presented in contemporary American theater. Subject defined as "moral" vision because focus is on how we perceive ourselves in relation to others and society's value standards. Perspectives include sociology, theory of culture, practical theater craft, and literary criticism. Features plays by range of American playwrights. Offered by Theatre (p. 878). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 359: World Stages. 3 credits.
Introduces variety of theatrical traditions and performance theories from around the world, with special emphasis on those not covered in introductory Western drama survey courses, 150 and 151. Students read and discuss dramatic texts, performance theory, and video clips to understand variety of theatrical traditions in cultural and historical contexts. Requirements include two team presentations (taking turns as writer and presenter), one midterm paper, and one solo presentation with accompanying paper. Offered by Theatre (p. 878). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
THR 365: Characterization. 3 credits.
Explores method and approach of understanding and creating characters for theater modeled on people from personal experience and observation, imagination, dreams, and other media. Transforms that information into detailed, specific, and vivid physical manifestations. Through presentations of characters drawn from personal experience, students shift understanding of characterization from "outward directed" physical adjustments to physical characteristics and personality character traits that are immediate, familiar, and completely realized from "inner driven" connections to their own lives. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: THR 210.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 380: Playwriting I. 3 credits.
Exposure to principles of dramatic writing, including character, plot, dramatic structure, dialogue, exposition, setting, and creating theatrical images using examples from plays, screenplays, and students' own work. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 381: Playwriting II. 3 credits.
Intensive continuation of work begun in THR 380. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: THR 380 or permission of instructor.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 382: Screenplay Workshop. 3 credits.
Studies screenwriting as dramatic form of 20th, 21st centuries. Explores story, plot structure, three act-structures, mythic structures, fundamental story patterns, character, thinking, and writing visually. Offered by Theatre (p. 878). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 395: Theater as the Life of the Mind. 3 credits.
Traces four subjects (battle of the sexes, good gifts, cyclical tragedy, and eschatology) from ancient theater to contemporary plays, television, and movies, using literary criticism, history, political theory, comparative religion, sociology, and anthropology. Offered by Theatre (p. 878). Limited to three attempts.

Mason Core: Arts (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

THR 401: Professional Presentation. 3 credits.
Examines persuasive communication, with an emphasis on making presentations and addressing groups, both large and small. Hones the ability to project a personal passion while communicating information about any discipline to general audiences. Offered by Theatre (p. 878). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 405: Advanced Stage Combat. 3 credits.
Armed Stage Combat techniques are explored, unarmed techniques solidified, and advanced choreography mastered in this study of safe and effective theatrical storytelling through violence for Stage and Screen appropriate towards national certification as Actor-Combatant. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: THR 305 or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 410: Acting for the Camera. 3 credits.
Designed for students with a strong interest in pursuing a professional career in acting and is focused primarily on the particular techniques for screen acting in film and television. Offered by Theatre (p. 878). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: THR 310C.
C Requires minimum grade of C.

Enrollment is limited to students with a major, minor, or concentration in Theatre.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 411: Great Film Directors. 3 credits.
Students view and analyze films in order to explore important film genres and examine influential directors. Offered by Theatre (p. 878). Limited to three attempts.

Mason Core: Arts (p. 142)

Recommended Prerequisite: Sophomore standing (30 credit hours completed).

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 412: Great Film Performances. 3 credits.
Students view and analyze films in order to examine the development and evolution of film acting. Offered by Theatre (p. 878). Limited to three attempts.
Mason Core: Arts (p. 142)

Recommended Prerequisite: Sophomore standing (30 credit hours completed).

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 415: Advanced Sound Engineering. 3 credits.
Advanced study in theory and practice of audio engineering for theater and the entertainment industry. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: THR 315 and THR 230 or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 420: Advanced Performance Studio. 3 credits.
Advanced scene study for stage and film. Rotating topics address professional perspectives and acting styles. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:
Required Prerequisite: THR 320\(^C\).
\(^C\) Requires minimum grade of C.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 421: One-Person Show. 3 credits.
Explores creative writing, staging, and performance while developing short, original work culminating in the successful writing, a one-person show. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: THR 210 and 310 or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 423: Audition Techniques: Stage and Camera. 3 credits.
Develops effective audition techniques for performers through preparation of material for stage and camera, and explores industry standards and casting protocols through practical application. Offered by Theatre (p. 878). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: (THR 310\(^C\)).
\(^C\) Requires minimum grade of C.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 424: Contemporary Women Playwrights. 3 credits.
Explores identity and culture, sexuality and gender, work, relationships, and power through the eyes of female dramatists and performance artists. Analyzes texts and issues through readings, video, and live performances. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Junior standing or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 425: Verse Speaking. 3 credits.
Explores verse literature and mechanics of verse structure through reading, discussing, and reciting major verse plays of Western drama from the Middle Ages through the 20th century. Focuses on various verse forms, paying particular attention to vocal clues within verse structure, the meaning of rhythm, and practicing vocal techniques used in speaking texts in class. Students also prepare weekly presentations of playwrights, and historical backgrounds of plays and their periods. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: THR 210 and 310 or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 427: Musical Theater Workshop. 3 credits.
Develops performance techniques necessary for performance in musical theater. Students will prepare and perform musical theater pieces. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 12 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 428: Musical Theater Ensemble. 3 credits.
Rehearses a musical or musical theater review in a workshop environment. The result of the work will be public performance(s). Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Audition.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

THR 434: Advanced Lighting Design. 3 credits.
In-depth study of lighting design focused on the aesthetics of stage lighting and advanced conceptualization and communication of design ideas. Extensive work with script analysis, research, and graphic representation of theatrical lighting designs. Intensive practical experience in laboratory and production assignments. Offered by Theatre (p. 878). Limited to three attempts.
Recommended Prerequisite: THR 230, THR 334, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 440: Advanced Studies in Directing/Dramaturgy. 3 credits.
Examines theory and practice of collaborative development of production ideas by director and dramaturg teams. Students draw from extensive study in field to support production ideas from classical and modern repertoire to be presented as written and oral projects before faculty panel. Offered by Theatre (p. 878). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: Junior or Senior standing. Completion, or concurrent enrollment in, all Mason Core courses. THR 150 or 151, and THR 329, or permission of instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 448: Foundations of Theater Education. 3 credits.
Introduces and explores various theater teaching specialties. Examines philosophical, pedagogical, and practical issues in context of diverse teaching situations and venues that range from public school to undergraduate and graduate training to commercial establishments. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Junior standing (60 credit hours completed) and Theater Teaching Concentration admission requirements or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 449: Elementary Theater Education. 3 credits.
An in-depth exploration of teaching methods and classroom management for PK-6 theater education. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Junior standing (60 credit hours completed) Theater Teaching Concentration admission requirements or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 450: Secondary Theater Education. 3 credits.
This course explores teaching methods for theater that are appropriate for all students, including exceptional students, gifted and talented, and those with disabling conditions. It will cover requirements of the Virginia Theater Standards of learning, curriculum and instructional procedures for secondary grades 6-12 (both middle and secondary schools). Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: Junior standing (60 credit hours completed) Theater Teaching Concentration admission requirements or permission of the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 455: Theater Education Internship. 6-12 credits.
Full semester of supervised teaching experience in approved school programs PK-12. Credits based on number of teaching contact hours per week. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Successful completion of Theater Teaching Concentration Coursework and students must pass the VCLA before student teaching (and the Praxis II (Theater: Content Knowledge) test during the internship semester).

Schedule Type: Internship

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 480: Advanced Playwriting. 3 credits.
Advanced playwriting workshop in which students explore their own voice in theatrical writing. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: THR 381 or Permission of Instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 482: Advanced Screenplay Workshop. 3 credits.
Screenwriting workshop emphasizing student development in screenplay form, structure, and storytelling with emphasis on craft, character, and story culminating in a screenplay. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Specialized Designation: Writing Intensive in Major

Recommended Prerequisite: THR 382 or ENGH 332/ENGH 372 or other writing preparation course as approved by the instructor.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 484: Translation & Adaptation for Stage & Screen. 3 credits.
This interdisciplinary course will introduce students to the arts of translation and adaptation for the stage and screen. Students will read examples of translations and adaptations, identify challenges in each, and discuss them with professionals who translate or adapt works for theater, film and/or opera. Students are also expected to apply their skills to one short and one long translation/adaptation project, and present their work to the class. Offered by Theatre (p. 878). Limited to three attempts.

Recommended Prerequisite: Junior standing

Schedule Type: Seminar
THR 493: Field Experience. 1-6 credits.
Experience in a theatrical organization to provide opportunity to apply classroom training, knowledge, skills, and theory in a professional situation. Activity must be approved by department chair. Offered by Theatre (p. 878). May be repeated within the term for a maximum 12 credits.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

THR 495: Senior Capstone Project. 3 credits.
Student must submit a written project proposal to area of concentration for consultation. If accepted, proposal will be presented to the full faculty for approval. Notes: Production proposals will be subject to calendar availability. Course is repeatable with permission of Chair. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Must have declared a concentration, have completed at least 60 credit hours, and must have completed 4 credits of Practicum.

Schedule Type: Studio

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 496: Text in Production. 3 credits.
In-depth investigation of collaborative nature of theatrical arts. Examines discrete creative disciplines; acting, directing, dramaturgy, and design as discussed by distinguished professionals and scholars. In-depth exploration of one selected playscript for the entire semester. Students will work collaboratively in small groups to research, design, direct, and perform scenes from selected text. Offered by Theatre (p. 878). Limited to three attempts.

Mason Core: Synthesis (p. 142)

Recommended Prerequisite: Completion or concurrent enrollment in all theater core courses and in all other required Mason Core courses.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

THR 497: Independent Study. 1-6 credits.
Individual research and creative project in close consultation with instructor. Selection from projects in performance, directing, technical theater and design, playwriting, or theater history and criticism. Notes: May be repeated, provided suffix citing specific course content is different. Offered by Theatre (p. 878). May be repeated within the term for a maximum 24 credits.

Recommended Prerequisite: Open only to THR majors with 90 hours and by permission of department chair.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
500 Level Courses

THR 525: Advanced Musical Theater Workshop. 3 credits.
Students hone performance techniques necessary for performance in musical theater and contemporary operetta. Students will practice and perform musical theater pieces. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 530: Topics in Theater Design. 3 credits.
In-depth study of scenic, costume, lighting, or sound design. Extensive work with script analysis, historical and conceptual research, visual communication of design ideas, and technical paperwork. Focus on aesthetics, production requirements, and collaboration. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 12 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Special scale. (p. 84)

THR 539: Aesthetics for the Theater. 3 credits.
Students will develop skills in design while exploring significant developments within the area of concentration. Creative projects, including research and design, will be supervised on an individual basis. Offered by Theatre (p. 878). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 540: Directing Techniques. 3 credits.
As an examination of the directorial process for stage and screen, this course will explore directing theory, preparation, and practice. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 548: Advanced Foundations of Theater Education. 3 credits.
Explores various theater teaching specialties in venues that range from public school to undergraduate and graduate training to commercial establishments. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Graduate standing, eligibility for post-baccalaureate certificate in Theater Education or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 549: Advanced Elementary Theater Ed. 3 credits.
An in-depth exploration of teaching methods and classroom management for PK-6 theater education combined with advanced managerial skill training. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Graduate standing, eligibility for post-baccalaureate in Theatre Education Licensure, or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
THR 550: Advanced Secondary Education. 3 credits.
This course explores teaching methods for theater that are appropriate for all students, including exceptional students, including gifted and talented and those with disabling conditions. It will cover requirements of the Virginia Theater Standards of Learning, curriculum and instructional procedures, as well as theater classroom management, for secondary grades 6-12 (both middle and secondary schools). Offered by Theatre (p. 878). May not be repeated for credit.

Recommended Prerequisite: Graduate standing, eligibility for post-baccalaureate certificate in Theater Education or permission of the instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 555: Theater Education Internship. 1-12 credits.
Full semester of supervised teaching experience in approved school programs PK-12. Credits based on number of teaching contact hours per week. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Successful completion of Theater Teaching Concentration Coursework and students must pass the VCLA and Praxis I prior to the internship semester.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Internship
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 560: Advanced Script Analysis. 3 credits.
Critical analysis of dramatic literature as preparation for production and performance. Examination of plot, character, theme, audience impact, and cultural context, and the transformation of intellectual ideas into physical theatrical production elements. Offered by Theatre (p. 878). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 571: Advanced Playwriting Workshop. 3 credits.
Advanced playwriting workshop in which students explore their own voice in theatrical writing. Offered by Theatre (p. 878). May not be repeated for credit.

Recommended Prerequisite: Undergraduate degree or equivalent, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 590: Special Topics for Graduate Study. 1-6 credits.
Rotating topic. Advanced seminar in topics for stage and screen studies, including education, performance, design, research, writing, and styles in theater or other media. Offered by Theatre (p. 878). May be repeated within the term for a maximum 18 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

THR 591: Graduate Seminar. 1-3 credits.
Addresses the realities living and working in the theater and the film industry. Notes: Rotating Topics. Dependent on credits hours offered, class time will vary from 1 hour to 2 hours, 40 minutes. Offered by Theatre (p. 878). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Theatre.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture
Grading:
This course is graded on the Graduate Regular scale. (p. 84)

**THR 599: Independent Study. 1-6 credits.**
Independent reading, performance, or research on a specific project under direction of selected faculty member. May include attendance in a parallel undergraduate course. Offered by Theatre (p. 878). May be repeated within the term for a maximum 18 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

### 600 Level Courses

**THR 610: Acting Mentorship. 3 credits.**
This class gives students the chance to work with a faculty mentor while they apply their acting skills to a full-length public performance. Students create a record of the creative process through mentored practical production assignments. Actors enrolled in this course must receive prior approval for their projects for the stage or screen and will be expected to submit a written reflection on the complete acting process. Offered by Theatre (p. 878). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**THR 620: Acting Techniques. 3 credits.**
Students explore selected acting techniques for stage and screen. Topics vary from scene work to specialty areas - such as movement, voice and style - with an emphasis on developing bold physical, psychological and emotional expression. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 12 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**THR 630: Design Mentorship. 3 credits.**
Students work with a mentor while they apply design and technical skills to a full-length public performance. Students create a record of the creative process through mentored practical production assignments. Students must receive prior approval on projects for the stage or screen and will be expected to submit a written reflection on the process. Notes: Students must attain a B or higher to receive credit. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**THR 640: Directing Mentorship. 3 credits.**
This class gives students the chance to work with a faculty mentor while they apply their directing skills to a full-length public performance. Students create a record of the creative process through mentored practical production assignments. Directors enrolled in this course must receive prior approval for their projects for the stage or screen and will be expected to submit a written reflection on the full directorial process. Offered by Theatre (p. 878). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**THR 651: Advanced Dramatic Theory and Criticism. 3 credits.**
A chronological study of development of dramatic theory and criticism from Plato and Aristotle through modern movements. Students read plays, theoretical works, and critical responses, and write original criticism of performances or texts. They also take turns leading critical texts, meet one-on-one with their instructor for individualized mentoring, and prepare at least one essay for publication. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 9 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)
**THR 652: Writing Seminar. 3 credits.**

Students develop writing skills and explore significant developments and periods within the field. Offered by Theatre (p. 878). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Graduate Program in CVPA.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

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**THR 655: Teaching Practicum. 3 credits.**

Students develop and teach undergraduate curriculum related to their area of emphasis. Notes: Students must attain a B or higher to receive credit. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

**Recommended Prerequisite:** Admission to Graduate Program in CVPA.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

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**THR 691: Professional Development. 1 credit.**

Students develop materials and strategies toward the next stage of career in the field. Offered by Theatre (p. 878). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Independent Study

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**THR 694: Graduate Field Experience. 1-6 credits.**

Experience in a professional theater or screen production. Activity is subject to prior faculty approval. Students will present a final portfolio of work. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Internship

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**THR 696: Advanced Acting Practicum. 3 credits.**

Academic credit awarded for satisfactory completion of a minimum of 60 hours approved production experience. Offered by Theatre (p. 878). May be repeated within the degree.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

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**THR 697: Advanced Playwriting and Dramaturgy Practicum. 1-3 credits.**

Academic credit awarded for satisfactory completion of a minimum of 60 hours approved production experience. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Laboratory

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**THR 698: Advanced Directing Practicum. 1-3 credits.**

Academic credit awarded for satisfactory completion of a minimum of 60 hours approved production experience. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.
Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

THR 699: Advanced Design Practicum. 1-3 credits.
Academic credit awarded for satisfactory completion of a minimum of 60 hours of approved production experience. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

THR 740: Directors and Dramaturg in Collaboration. 3 credits.
Students work in director-dramaturg pairs to create a hypothetical theater company, craft its mission, plan its season and pitch their ideas for production. Additional assignments include a director's approach, dramaturg's protocol, annotated bibliography, research paper and lecture on a related topic. Notes: Students must attain a B or higher to receive credit. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

THR 755: Academic Track Practicum. 3 credits.
Students prepare a semester worth of course material for undergraduate class. Notes: Students must attain a B or higher to receive credit. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: Admission to Graduate Program in CVPA.

Registration Restrictions:
Enrollment limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Laboratory

Grading:
This course is graded on the Graduate Special scale. (p. 84)

THR 790: Directed Research. 3 credits.
Students delve into a specialty topic of research in the area of emphasis within the Theater concentration. Notes: Students must attain a grade of B or higher to receive credit. Offered by Theatre (p. 878). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

THR 796: Directed Reading. 1 credit.
In preparation for a thesis, students develop and complete a body of reading relating to their thesis. Offered by Theatre (p. 878). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Graduate Special scale. (p. 84)

THR 797: Project Preparation. 3 credits.
Students document their pre-production process in preparation for their culminating artistic project. Notes: Students must attain a B or higher to receive credit. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 6 credits.

Recommended Corequisite: THR 796.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Independent Study

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

THR 798: Project Practicum. 3 credits.
Students document their production process during the culminating artistic project. Notes: Students must attain a B or higher to receive credit. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

Recommended Corequisite: THR 797.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)
THR 799: Thesis. 1-3 credits.
Students reflect upon their culminating artistic project and articulate original conclusions regarding practice in their area of emphasis. Notes: Subject to Faculty majority. Students must attain a B or higher to receive credit. Offered by Theatre (p. 878). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: Research Methods Core Requirement.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Thesis

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Tourism and Events Management (TOUR)

100 Level Courses

TOUR 110: Professionalism and Civility. 1 credit.
Focuses on developing competencies in the areas of professionalism and civility in a variety of settings including professional image, conduct at work, telephone, written, oral, and electronic etiquette, table manners, and social networking with an emphasis on the cultural needs for honoring commitments and obligation. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 190: Wedding Planning. 3 credits.
Introduction to the planning and management of weddings. Explores social, political, economic, cultural, religious, and historical influences on wedding planning decision-making and business strategies. Reviews practices relevant to successful wedding planning, and consultancy for diverse clients and settings. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

TOUR 200: Introduction to Tourism Management. 3 credits.
Introduces travel and tourism from local to international levels. Covers the scale, scope and organization of the industry. Emphasizes the development and management of natural, cultural, heritage and recreational resources of tourism. Identifies issues related to the economic, technological and political aspects of tourism. Notes: Open to nonmajors. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 210: Global Understanding through Travel and Tourism. 3 credits.
Examines tourism as a global industry and human activity that promotes and facilitates understanding of historical and cultural values, and of international institutions that characterize the broader global system. Notes: Open to nonmajors. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 214: Hospitality Tourism and Events Management Accounting. 3 credits.
Provides an overview of financial accounting for hospitality, tourism and event managers. Presents financial accounting from the perspective of recording financial transactions, developing financial statements and evaluating investment and operational decisions. Emphasizes efficient use of spreadsheets in managerial decision making. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 220: Introduction to Event Management. 3 credits.
Explores principles and practices of managing medium- and large scale events including festivals, conventions, concerts, shows, sporting events, and ceremonies. Emphasizes organization, site preparation, communications, personnel, and security as well as evaluation and innovation. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 221: Event Implementation and Evaluation. 3 credits.
Introduction to event implementation and evaluation through involvement in on-site event delivery and analysis. Studies participant motivation and economic, social, environmental, and cultural impacts in relation to an event’s products and services. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 220°.
°Requires minimum grade of D.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 230: Introduction to Hospitality Management. 3 credits.
This course is an introduction to hospitality management, including an overview of management in the hospitality industry and professional opportunities. The concepts and practices of hospitality management are examined and discussed. The scope and forms of hospitality organizations are reviewed, as well as trends within these organizations. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.


Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 241: Hospitality, Tourism, and Events Management Practicum. 3 credits.
Provides 120 hours of introductory supervised professional fieldwork experience in an approved tourism, events, or hospitality management setting for 10 to 14 weeks (10 weeks only for the Summer term) under the supervision of a practicum Faculty Supervisor and Agency Supervisor. Includes meetings and assignments before, during, and after the practicum. Notes: Students must complete the mandatory pre-experience orientation session online before registering for this course. Hourly requirement per week is 15-20 for Summer term. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: TOUR 200D, 220D and 230D.
D Requires minimum grade of D.

Students with a class of Freshman may not enroll.

Enrollment is limited to students with a major in Tourism and Events Management.

Schedule Type: Internship

Grading: This course is graded on the Satisfactory/No Credit scale. (p. 84)

300 Level Courses

TOUR 301: Hotel Management. 3 credits.
Explores interrelated systems in hotel management, including front desk, reservations, housekeeping, food/beverage, telecommunications, guest services and security. Reviews and segments hotel products and associated management challenges. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 230D.
D Requires minimum grade of D.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 310: Food and Beverage Management. 3 credits.
Explores the principles of foodservice management regarding production and selling of food and beverage products. Categorizes various types of food, wine, beer and spirits. Reviews foodservice buying, pricing, menu planning, production, storage, service, controls and quality assurance. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 230D.
D Requires minimum grade of D.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 311: Women and Tourism. 3 credits.
Focuses on women as hosts and guests. Using social theory, explores issues regarding the history and evolution of tourism as a gendered system. Addresses family, solo and business travel, and employment, taking into consideration issues related to more and lesser developed countries as they relate to the roles of women in international tourism. Notes: Open to nonmajors. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 313: Event Technical Production. 3 credits.
Explores theoretical and practical considerations of event technology. Examines specifications, layout installation techniques and operation of sound systems, lighting systems and video systems for event industry sectors. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 220D.
D Requires minimum grade of D.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 314: Hospitality, Tourism, and Events Revenue Management. 3 credits.
Provides an overview of revenue management as utilized in a hospitality context. Presents the dynamics of revenue management and demonstrates strategic and operations perspectives. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: TOUR 200C, 220C or 230C.
C Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 320: Hospitality, Tourism and Event Management Information Systems. 3 credits.
Introduces management information systems (MIS) technology and its application to hospitality, tourism and event management (HTEM) sectors from managerial and strategic perspectives. Surveys computer applications, products and trends in gathering, analyzing, storing and communicating information within the HTEM sectors. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: TOUR 200D, 220D or 230D.
D Requires minimum grade of D.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 330: Resort Management. 3 credits.
Surveys effective practices in the management of resort recreation enterprises. Examines basic resort operations, including front desk, food and beverage, amenities, and housekeeping. Covers management of a variety of resort types, such as ski resorts, beach resorts, dude ranches, business retreats, adventure camps, health spas, and golf resorts. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: TOUR 200\(^D\) or 230\(^D\).
\(^D\) Requires minimum grade of D.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 331: Cruise Ship Management. 3 credits.
Surveys effective practices in the management and operation of cruise ships. Includes on-site examination of basic cruise operations including sales and booking, food and beverages, hotel operations, security, recreation activities, shore excursions and personnel management. Examines historical foundations of the cruise industry, related leisure and management theory, and leisure trends specific to mass international maritime travel. Notes: Includes on-campus classroom lectures and week-long on-board cruise ship instructional experience. Must be 21 years of age by beginning of semester. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: TOUR 200\(^C\) and 230\(^C\).
\(^C\) Requires minimum grade of C.

Students with a class of Freshman or Sophomore may not enroll.

Enrollment is limited to students with a major in Tourism and Events Management.

Enrollment limited to students in a Bachelor of Science degree.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 340: Sustainable Tourism. 3 credits.
Studies the characteristics of environmentally, economically and socioculturally sustainable tourism and assesses the possibilities and limitations for its implementation within a variety of destinations and product settings. Emphasizes conventional “mass” tourism and small-scale “alternative” tourism as they apply to hospitality, event, and tourism management. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:
Required Prerequisite: TOUR 200\(^D\).
\(^D\) Requires minimum grade of D.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 341: Film and Medical Tourism. 3 credits.
This two-part course introduces film-induced tourism and medical tourism. The evolution of each type of tourism, and the opportunities and challenges of each type of tourism, will be explored in-depth. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 200\(^C\).
\(^C\) Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 342: Sacred Spaces and Dark Tourism. 3 credits.
In-depth examination of the tourist experience at popular sacred sites and at attractions that offer socially unapproved or harmful personal touristic experiences. Management issues at touristic sacred sites and dark tourism enterprises will be identified and compared. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 200\(^C\).
\(^C\) Requires minimum grade of C.

Enrollment limited to students with a class of Junior, Senior Plus or Senior.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 343: Wine and Food Tourism. 3 credits.
Considers the characteristics of food and wine tourism related to environmental, economic and socio-cultural sustainable tourism and assess the possibilities and limitations for implementation within a variety of destinations and settings. Includes the development of the global food chain, artisan food and drink production, and the role of food and wine in the tourist experience. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 200\(^C\).
\(^C\) Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 352: Heritage and Cultural Tourism. 3 credits.
Analyzes historical and cultural attractions, including museums, canals, monuments, pilgrimage sites, military sites, and cultural and heritage landscapes. Covers presentation and interpretation, African-American and Native American heritage, management and operational considerations, and marketing. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 200\(^D\).
\(^D\) Requires minimum grade of D.
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 355: Event Logistics. 3 credits.
Explores practical considerations of event logistics and operations for conferences, conventions and exhibitions throughout the event industry sector. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 220\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 362: Cultural and Environmental Interpretation. 3 credits.
Focuses on communication processes and practices used by professionals to explain and interpret special characteristics of cultural and environmental resource sites for visitors. Discusses conceptual principles for planning interpretive programs, as well as techniques for analyzing and disseminating information and entertainment through various media. Examines delivery of interpretive messages across a variety of audiences, strategies for programming interpretive services, and the administration and evaluation of interpretive services at tourism, event, and recreation sites. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts. Equivalent to PRLS 362.

Registration Restrictions:
Required Prerequisites: PRLS 300\textsuperscript{C} or TOUR 352\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses

TOUR 410: Tourism Economics. 3 credits.
Introduces both macro and micro economic theory as it relates to hospitality, tourism and events management fields. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 241\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 412: Hospitality, Tourism, and Events Management Marketing and Sales. 3 credits.
Provides understanding and tools for marketing and management of financial resources in entrepreneurial tourism enterprises. Also includes market planning, business planning, feasibility assessment, investment analysis, basic accounting, and operational control. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: TOUR 241\textsuperscript{C} or PRLS 241\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 414: Hospitality, Tourism, and Events Management Finance. 3 credits.
Develops skills and competencies for the management of financial resources in hospitality, tourism and events management enterprises. Covers economic principles, the time value of money, revenue streams, pricing and expenditure management. Applies fundamental principles to personal financial management. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisites: TOUR 241\textsuperscript{C} and 214\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 420: Tourism Planning/Policy. 3 credits.
Principles of planning and policy that apply to integrated and sustainable tourism development at the international, national, state, regional, local, and site scale. Considers government, industry, and community perspectives. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:
Required Prerequisite: TOUR 241\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 430: Destination Marketing and Management. 3 credits.
Discusses the theories and concepts of destination management with a comprehensive approach that emphasizes planning, development, and marketing a destination. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 241\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 440: Meetings and Conventions. 3 credits.
Analyzes meetings, incentives, conventions, and exhibitions with respect to business environment and structure, industry suppliers, site and facility selection, human resource management, legal and financial issues, marketing and promotion, and event organization. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 241\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 445: Restaurant Management. 3 credits.
Advances knowledge gained in Food and Beverage Management, basic cooking skills, and human resource management to include hands-on operations of a full-service restaurant. Knowledge needed to successfully manage both back-of-the-house and front-of-the-house operations will be taught. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: Safe Serve Certification

Registration Restrictions:
Required Prerequisites: TOUR 310\textsuperscript{C}, 450\textsuperscript{C} and NUTR 410\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Laboratory

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 450: Hospitality Human Resources Management. 3 credits.
Reviews concepts and methods related to the achievement of strategic business goals through employee recruitment, training and development. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 241\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 460: Hospitality Facilities Operations. 3 credits.
Explores the principles applied to facilities systems operations in hospitality sectors. Considers design, planning, layout and maintenance of hospitality properties and systems. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 230\textsuperscript{C}.
\textsuperscript{C} Requires minimum grade of C.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 470: Career Preparation. 1 credit.
Focuses on current issues in tourism, events and hospitality management with an emphasis on career development strategies. Notes: Meets for half the semester Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Registration Restrictions:
Required Prerequisite: TOUR 241\textsuperscript{D}.
\textsuperscript{D} Requires minimum grade of D.

Students with a class of Freshman or Sophomore may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 480: Special Topics. 1-3 credits.
Selected topics reflect interest in specialized area of tourism and events management. Announced in advance. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the term for a maximum 9 credits.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TOUR 490: Hospitality, Tourism, and Events Management Internship. 12 credits.
Provides 400 hours of advanced supervised professional experience in an approved tourism, events, or hospitality management setting for a minimum of 30 hours/week, and a maximum of 40 hours/week (summer term only). Provides a continuous and structured opportunity to apply principles and skills developed in the classroom to the solution of practical problems. Notes: Students must attend mandatory pre-experience orientation session before registering and must participate in the mandatory final presentations upon completion of internship. Can register for only one additional course for up to 3 credits. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Mason Core: Capstone (p. 142)

Registration Restrictions:
Required Prerequisites: TOUR 241\textsuperscript{D} and 470\textsuperscript{D}.
\textsuperscript{D} Requires minimum grade of D.

Enrollment limited to students with a class of Senior Plus or Senior.

Enrollment is limited to students with a major in Tourism and Events Management.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

TOUR 499: Independent Study. 1-3 credits.
Faculty directed independent study of approved topics in tourism and events management. Offered by Recreation, Health & Tourism (p. 221). Limited to three attempts.

Recommended Prerequisite: TOUR 200 and 220, and 90 credits.

Registration Restrictions:
Enrollment is limited to students with a major in Tourism and Events Management.

Schedule Type: Independent Study

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)
500 Level Courses

TOUR 540: Sustainable Tourism Management. 3 credits.
Examines components and interrelationships within tourism systems and assesses the potential economic, sociocultural, and environmental impacts associated with this sector. Considers managerial strategies that minimize the negative impacts and maximize the positive impacts, thereby attaining sustainable tourism. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TOUR 598: Special Topics in Hospitality, Tourism and Events Management. 3 credits.
Focuses on Hospitality, Tourism and Events Management projects related to sport and recreation studies. Offered by Recreation, Health & Tourism (p. 221). May be repeated within the degree for a maximum 6 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

100 Level Courses

TURK 110: Elementary Turkish. 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

700 Level Courses

TOUR 710: Advanced Administrative Practices in Tourism and Events. 3 credits.
Explores best practices in the administration of tourism and events businesses. Particular emphasis will be placed on contract management, and strategic planning for dynamic markets and changing technologies, with specific applications to geographically dispersed consumers and suppliers. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

TOUR 712: Marketing Tourism and Event Planning Services. 3 credits.
Focuses on the unique challenges and opportunities faced by tourism and event marketers in producing, delivering, pricing, and promoting tourism and event services. Offered by Recreation, Health & Tourism (p. 221). May not be repeated for credit.

Registration Restrictions:
Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

Turkish (TURK)

100 Level Courses

TURK 110: Elementary Turkish. 6 credits.
Introduces elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

TURK 201: Intermediate Turkish I. 3 credits.
Further development of skills in listening, speaking, and writing. Notes: TURK 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: TURK 110, or permission of department.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

TURK 202: Intermediate Turkish II. 3 credits.
Further development of skills in listening, speaking, and writing. Notes: TURK 201 and 202 must be taken in sequence. Offered by Modern & Classical Languages (p. 424). Limited to three attempts.

Recommended Prerequisite: TURK 201, or permission of department
University Studies (UNIV)

100 Level Courses

UNIV 100: *Introduction to Mason.* 1 credit.
This course assists first-year students with their transition from high school to college life at Mason. It helps students to be successful through academic skill-building, educational planning, and career preparation. It provides information regarding campus resources and ways to engage in the Mason community. Although all sections have a core curriculum, certain sections also focus on a particular theme, student population, or course of study. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 106, UNIV 108, UNIV 140, UNIV 150, UNIV 160.

Registration Restrictions:
Enrollment limited to students with a class of Freshman.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 150: *INTO Mason Pathway Transition.* 0-1 credits.
Assists first-year international and multilingual standard and accelerated pathway students with their transition from high school to college life. It helps prepare students for successful progression to their chosen degree plan the promoting acculturation to academic norms and expectations at Mason, the development of self-efficacy, and engagement with the Mason community. It encourages to seek out and take full advantage of a wide range of campus resources. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 106.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 160: *INTO Mason Pathway Extended Transition.* 0-1 credits.
Serves as a continuation of UNIV 140. It provides extended first-year transition support for standard pathway students in the second semester. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 100, UNIV 106, UNIV 140, UNIV 150.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 106: *Mason Transitions for Diverse Learners I.* 0-2 credits.
Assists first-year students with their transition from high school to college life and offers the opportunity to learn resources, skills, and strategies that will guide them to academic success. This course is open only to diverse learners identified by Disability Services. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 2 credits. Equivalent to UNIV 100, UNIV 108, UNIV 150, UNIV 160.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

UNIV 108: *Mason Transition.* 0-1 credits.
Specialized transition to Mason courses with identified student populations. Notes: Only repeatable with department approval. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 2 credits. Equivalent to UNIV 100, UNIV 106, UNIV 140, UNIV 150, UNIV 160.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 140: *Academic Success.* 0-1 credits.
Focuses on academic transition and planning issues for students in their first or second year. Emphasis is placed on resources and techniques to assist students with improving their academic performance. Students work closely with the instructor to track their academic progress over the course of the semester. Offered by Provost's Office (p. 1190). Limited to three attempts.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 141: *First Year Living Learning Communities.* 0-1 credits.
This course is available for students who are members of a first year LLC. It is the learning component of the program for students who live together on a residence hall floor. The course follows the core University 100 curriculum, but is tailored to the particular theme or academic discipline of the LLC. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 100, UNIV 106, UNIV 140, UNIV 150, UNIV 160.

Registration Restrictions:
Enrollment limited to students with a class of Freshman.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 151: *First Year Living Learning Communities Extended Transition.* 0-1 credits.
This course serves as a continuation of University 150 into the second freshman semester. It extends the transition support of students in the First Learning Communities Program. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 101, UNIV 141.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 160: University Scholars Transition Seminar. 0-2 credits.
A first year transition seminar for students in the University Scholars Program. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 100, UNIV 106, UNIV 108, UNIV 140, UNIV 150.

Recommended Prerequisite: Admittance to the University Scholars Program.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 170: Special Topics. 0-1 credits.
Varied UNIV course topics are offered to first and second year undergraduate students. Notes: May be repeated when topic is different. Offered by Provost's Office (p. 1190). May be repeated within the term for a maximum 3 credits.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 190: Introduction to Research Opportunities. 0-1 credits.
Provides an opportunity to learn more about participating in research and creative projects at Mason and acquire skills needed to be successful in research. Offered by Provost's Office (p. 1190). Limited to three attempts.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**200 Level Courses**

UNIV 206: Mason Transitions for Diverse Learners II. 0-2 credits.
Explores identity and social development within the university environment. This course is open only to diverse learners identified by Disability Services. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 2 credits.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Special scale. (p. 84)

UNIV 220: Decide and Confirm Majors. 0-1 credits.
This course focuses on helping students clarify or choose a major or career. Students explore and assess their interests, values and skills, as well as research various majors, careers, and the world of work as information for the decision-making process. Notes: Only one of UNIV 220, UNIV 320, UNIV 420, UNIV 421, or UNIV 422 may be taken per semester. Offered by Provost's Office (p. 1190). Limited to three attempts.

Recommended Prerequisite: Second-semester freshman standing.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 250: Second Year Living Learning Communities. 0-1 credits.
Students in a Second Year Living Learning Community live together on a residence hall floor and attend this course together to fulfill the learning component of the LLC program. Notes: For students who are members of a Second Year Living Learning Community. Offered by Provost's Office (p. 1190). Limited to three attempts.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**300 Level Courses**

UNIV 300: Transfer Transition. 0-1 credits.
This course assists new transfer students with a successful transition to Mason. This course addresses academic success, time management, and course schedule planning, as well as graduate school/career readiness, degree requirements, and other university policies and procedures. Students explore campus resources and opportunities for engaging in the Mason community. Notes: Only transfer students in their first or second semester at Mason are eligible to take this course. Only repeatable with department approval. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 302, UNIV 303, UNIV 305, UNIV 308.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 302: College of Science Transfer Transition. 0-1 credits.
This course is intended for new transfer students in the College of Science to assist them with a successful transition to Mason. This course addresses academic success, time management, and course schedule planning, as well as graduate school/career readiness, degree requirements, and other university policies and procedures. Students explore campus resources and opportunities for engaging in the Mason community. Notes: Only transfer students in their first or second semester at Mason are eligible to take this course. Only repeatable with department approval. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 300, UNIV 303, UNIV 305, UNIV 308.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 303: Veteran Transition. 1 credit.
This course is for students with veteran status. Based on theory and research specific to the needs of veterans, this course builds a foundation for success in college and beyond, including career planning, translating military experience on a resume, practical interviewing techniques, and networking and engaging with other veterans in a military-friendly environment. Notes: Only transfer students in their first or second semester at Mason are eligible to take this course. Only repeatable with department approval. Offered by Provost's Office (p. 1190). Limited to three attempts. Equivalent to UNIV 300, UNIV 302, UNIV 305, UNIV 308.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 304: Bachelor Individualized Studies Transfer Transition. 1 credit.
This course serves new transfer students in the Bachelors of Individualized Studies (BIS) program, and assists them with a successful transition to Mason. Students develop relationships with peers, staff,
Registration Restrictions:
Enrollment limited to students with a class of Junior, Senior Plus or Senior.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 320: Internship and Career Readiness. 0-1 credits.
This course helps students confirm major/career choices and actively pursue internships, research assistantships, and other career-related experiences. With a focus on career readiness, students prepare a resume and cover letter, practice interviewing techniques, and conduct career research. Notes: Only one of UNIV 220, UNIV 320, UNIV 420, UNIV 421, or UNIV 422 may be taken per semester. Offered by Provost’s Office (p. 1190). Limited to three attempts. Equivalent to UNIV 306.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 330: Peer Leadership: Peer Advisors. 0-1 credits.
This course prepares upperclass students to serve as University 100 Peer Advisors, a role that helps first-year students transition successfully from high school to college. This course provides Peer Advisors with the necessary information, tools, and resources to co-teach University 100 effectively. Notes: For students who have been selected as a Peer Advisor by the University Transitions Program. Only repeatable with department approval. Offered by Provost’s Office (p. 1190). Limited to three attempts.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 331: Peer Leadership: Patriot Leaders. 0-1 credits.
This course introduces students who will serve as Patriot Leaders to the principles of effective leadership. Students will apply knowledge gained through the course directly to their roles and responsibilities as Patriot Leaders through readings and discussions, experiential activities, and class assignments. Notes: For students who have been selected as a Patriot Leader by the New Student and Family Programs Office. Offered by Provost’s Office (p. 1190). May be repeated within the degree for a maximum 1 credits.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 332: Peer Leadership: Resident Advisors. 0-1 credits.
For students who have been selected for Resident Advisor education by the Office of Housing and Residence Life. Notes: For students who have been selected as a Resident Advisor by the Office of Housing and Residence Life. Enrollment is contingent upon approval by Student Academic Affairs - Advising, Retention, and Transitions - in consultation with the Office of Housing and Residence Life. Only repeatable with department approval. Offered by Provost’s Office (p. 1190). May be repeated within the degree for a maximum 2 credits.

Schedule Type: Seminar

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

**UNIV 333: Peer Leadership: Peer Mentors.** 0-1 credits.
Prepares students to serve as Peer Mentors in a variety of Mason departments and programs. Students learn and put into practice leadership approaches and strategies. They become familiar with communication tools and campus resources that will enable them to mentor fellow students successfully. Notes: For students who have been selected as a Peer Mentor in a Mason department or program. Only repeatable with department approval. Offered by Provost’s Office (p. 1190). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**UNIV 350: Third Year Living Learning Communities.** 0-1 credits.
Students in a Third Year Living Learning Community live together on a residence hall floor and attend this course together to fulfill the learning component of the LLC program. Notes: For students who are a member of a Third Year Living Learning Community. Offered by Provost’s Office (p. 1190). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**UNIV 370: Special Topics.** 0-1 credits.
Notes: May be repeated when topic is different. Offered by Provost’s Office (p. 1190). May be repeated within the term for a maximum 3 credits.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**UNIV 371: Dimensions of Well-Being.** 0-1 credits.
Introduces students to the terminology and basic science of well-being. Students will learn about evidence-based practices to cultivate resilience, optimism, mindfulness, and happiness. Practical application assignments will give students a chance to experiment with building a lifestyle to promote greater well-being. The course also addresses community and national well-being and the shared responsibilities of enhancing well-being in our society. Offered by Provost’s Office (p. 1190). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**UNIV 391: Students as Scholars Scholarly Inquiry.** 0-9 credits.
Students contribute to scholarly, research, or creative projects by engaging in the recursive process of scholarly inquiry as preparation for participation in an individualized original project. Students will hold regular meetings with their project mentor, and make satisfactory contributions to the project. Notes: Enrollment only with permission from OSCAR. Offered by Provost’s Office (p. 1190). May be repeated within the degree for a maximum 27 credits.

**Specialized Designation:** Scholarly Inquiry.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 400 Level Courses

**UNIV 406: Mason Transitions for Diverse Learners IV.** 0-2 credits.
Prepares students for the workplace or graduate school. Students will practice interviewing and interpersonal skills, as well as develop and practice strategies for success in post-graduation endeavors. This course is open only to diverse learners identified by Disability Services. Offered by Provost’s Office (p. 1190). May be repeated within the degree for a maximum 2 credits.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Special scale. (p. 84)

**UNIV 420: College to Career.** 1 credit.
This course supports second semester juniors and seniors with transitioning into the professional workplace. Students develop a tailored resume and cover letter, refine their interviewing skills, and discuss important workforce issues, such as compensation packages and workplace dynamics. Notes: Only one of UNIV 220, UNIV 320, UNIV 420, UNIV 421, or UNIV 422 may be taken per semester. Offered by Provost’s Office (p. 1190). Limited to three attempts. Equivalent to ENGH 303, FRLN 309, GLOA 305, HIST 385, PHIL 393.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**UNIV 421: College to Graduate School.** 1 credit.
This course supports second semester juniors and seniors. The academic emphasis is on transition readiness for graduate or professional school. Students learn about application and testing options and strategies, interviewing skills, budgeting, and career development. Notes: Only one of UNIV 220, UNIV 320, UNIV 420, UNIV 421, or UNIV 422 may be taken per semester. Offered by Provost’s Office (p. 1190). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**UNIV 422: Professional Skills Development.** 0-1 credits.
Is for seniors preparing for success in the workplace. Course topics include: building skills employers demand, advocating for yourself in challenging situations, preparing for performance reviews, understanding employment benefits such as compensation, health, and financial plans, and more. This course helps prepare students for meeting 21st century workplace challenges in a practical, experiential, and collaborative workplace-simulated environment. Notes: Only one of UNIV 220, UNIV 320, UNIV 420, UNIV 421, or UNIV 422 may be taken per semester. Offered by Provost’s Office (p. 1190). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)
UNIV 490: Critical Decisions in Postgraduate Transitions. 0-1 credits.
This course guides and supports students through the postgraduate fellowship application process and postgraduate decisions. Students create a resume, complete a fellowship application, prepare for a scholarship interview, and refine their educational and career goals. Notes: Enrollment through the Office of Fellowships. Only repeatable with approval from the Office of Fellowships. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 1 credits.

Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 491: RS: Students as Scholars Individualized Scholarly Experience. 0-9 credits.
Students actively participate in the process of scholarship and make a significant contribution to the creation of scholarly, research, or creative project. Students meet regularly with their project mentor, make satisfactory progress towards the completion of the project, and create a disciplinary product for evaluation. Notes: Enrollment only with permission from OSCAR. Offered by Provost's Office (p. 1190). May be repeated within the degree for a maximum 27 credits.

Specialized Designation: Research/Scholarship Intensive
Schedule Type: Independent Study
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 495: RS: Undergraduate Research Scholars Program Seminar. 0-1 credits.
Students accepted into Undergraduate Research Scholars Program participate in a weekly seminar, hold regular meetings with their project mentor, and make satisfactory progress on their research or creative project. At the end of the semester, students either complete their project and present the results in a professional context or apply for continuation through UNIV 496. See oscar.gmu.edu for more information and application. Notes: Enrollment only with acceptance into the URSP through OSCAR. Offered by Provost's Office (p. 1190). Limited to three attempts.

Specialized Designation: Research/Scholarship Intensive
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

UNIV 496: RS: Undergraduate Research Scholars Program Continuation. 0 credits.
Students continuing their participation in the Undergraduate Research Scholars Program hold regular meetings with their project mentor and make satisfactory progress on their research or creative project. At the end of the semester, students either complete their project and present the results in a professional context or apply for continuation. See oscar.gmu.edu for more information and application. Notes: Enrollment only with acceptance into the URSP through OSCAR. Offered by Provost's Office (p. 1190). May be repeated within the degree.

Specialized Designation: Research/Scholarship Intensive
Recommended Prerequisite: UNIV 495.

Urban and Suburban Studies (USST) 300 Level Courses
USST 301: Urban Growth in a Shrinking World. 3 credits.
Examines process of urbanization historically and comparatively. For major world regions, attention is given to the political economy of urbanization and its impact on social and economic relations. Examines growing globalization of the world economy, implications for urban life, and urban political economy of the future. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Specialized Designation: Green Leaf Related Course
Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

USST 390: Special Topics in Urban and Suburban Studies. 3 credits.
Subject varies according to specialization of instructor. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Schedule Type: Lecture
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

400 Level Courses
USST 401: Seminar: The Future of Metropolitan America. 3 credits.
Examines trends in the development of American metropolis, including impact of information economy and technological developments on metropolitan form and life, continuing outward growth and increasing decentralization of metropolitan areas, changing functional organization of urban space, and continued social segregation in metropolitan areas. Analyzes contemporary predictions about future of metropolitan life in America, and explores how alternative public policies can shape that future. Students work on research projects in metro area. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: 12 hours of USST approved courses, including USST 301, or Permission of Instructor.
Schedule Type: Seminar
Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

USST 490: Internship. 3 credits.
Approved work-study programs that focus on urban and suburban issues with an approved agency or firm. Placement depends on student qualifications and availability of positions. Students work with onsite supervisor and coordinator of urban and suburban studies. Offered by Schar School of Policy & Govt (p. 961). Limited to three attempts.

Recommended Prerequisite: Open only to authorized students with 12 hours of USST; see USST coordinator. Individualized Section Form required.
Schedule Type: Internship
Volgenau School of Engineering (VSE)

500 Level Courses

VSE 501: Fundamentals of Computing, Engineering & Technology Education. 3 credits.
Aimed at educating future and current engineering faculty on basic concepts, ideas, and issues of computing, engineering, and technology (CET) education to prepare them for future professoriate career and/or help improve current teaching practices. The course material provides a broad introduction to CET education covering historical foundations, theories of learning, and current topics of interest. It focuses on key conceptual questions related to CET learning including what are the characteristics of CET cognition, how is it different than other content areas, what approaches work best for CET learning, how to use theory-driven approaches in education, and the role of technology, including learning analytics and educational data mining, in CET education. Offered by Volgenau School of Engineering (p. 1011). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

Recommended Corequisite: Completion of at least 18 credit hours.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate or Non-Degree.

Students in a Non-Degree Undergraduate degree may not enroll.

Enrollment limited to students in the Volgenau School of Engineering college.

Schedule Type: Internship

Grading:
This course is graded on the Satisfactory/No Credit scale. (p. 84)

Women and Gender Studies (WMST)

100 Level Courses

WMST 100: Global Representations of Women. 3 credits.
Explores ways women are portrayed around the world in advertising, film, TV, cartoons, and news media; literature and religious texts; as well as photography, and the visual and performing arts. Through interdisciplinary study, students evaluate the powerful effects these representations have on the political, economic, and social lives of women throughout the world. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

Mason Core: Global Understanding (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

200 Level Courses

WMST 200: Introduction to Women and Gender Studies. 3 credits.
Interdisciplinary introduction to women’s, gender and sexuality studies, encompassing key concepts in the field, history of women’s movements and women’s studies in America, cross-cultural constructions of gender, and a thematic emphasis on the diversity of women’s experience across class, race, and cultural lines. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

Mason Core: Social/Behavioral Sciences (p. 142)

Schedule Type: Lecture

Grading:
This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 208: Introduction to Lesbian, Gay, Bisexual, Transgender, and Queer Studies. 3 credits.
Explores major events in lesbian, gay, bisexual, transgender, transsexual, and queer culture and history in the United States to understand how identities, experiences, and movements have been socially constructed and have changed in different times and places, often as a result of race, class, and gender inequities. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.
**Recommended Prerequisite:** WMST 200: Introduction to Women and Gender Studies

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 300 Level Courses

**WMST 300: Current Issues in Women and Gender Studies.** 1-6 credits. Study of selected topics central to contemporary women and gender studies. Topics vary but include subjects such as women and violence, women and international development, women’s myth and ritual, LGBTQ topics, the history and politics of sexuality, psychoanalysis, and religion. Notes: May be repeated for credit when topic is different. Offered by Women & Gender Studies (p. 2286). May be repeated within the term.

**Recommended Prerequisite:** WMST 200 or permission of instructor.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 307: Women and Work.** 3 credits. Historical and contemporary accounts of women's participation in paid and unpaid labor. Analyzes the nature of women's work through the divisions in the labor market due to gender, race, nationality, ethnicity, and class. Provides a detailed look at occupational sex segregation, sexual harassment, the glass ceiling, and the role of religion, culture, and education in determining women's opportunities and their value as workers and as family providers. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Recommended Prerequisite:** 30 credits.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 309: Black Social Movements: Gendering of Violence and Activism.** 3 credits. Examines racialized gendered conceptions of popular culture, violence, and the legal system and their role in structuring systems of segregation, discrimination and exclusion. Looks at the gendered strategies and conflicts of organizations that arose to combat racial violence and overturn legal and social barriers to equal opportunity and citizenship rights. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 314: Stories of Gender and Human Rights.** 3 credits. Examines global human rights issues through memoir, poetry and fiction. Explores the ways women use literary expression to voice their dissent and to struggle against human rights violations. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 315: Women During the Enslavement Era.** 3 credits. Examines the general experiences of enslaved women and nominally free women. Includes the lives of female reformers involved in the public arena as orators, writers, preachers, abolitionists and women's rights activists. Explores the effect of gender, class, and race on the development of ideologies concerning abolition, colonization, women's rights, and enslavement. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 316: Gendered Pan-Africanism.** 3 credits. Gendered Pan-Africanism. Explores the writings and activism of African Americans who traveled to Africa in search of a shared cultural past and present or an opportunity to build pan-African allegiances. Examines these encounters within the context of the Cold War, US civil rights and African anti-colonial movements, and racial and gender ideologies of the time. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)


**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 318: Gender, Social Justice, and Activism.** 3 credits. Course will address historical and contemporary social movements and the intersections of gender into these movements. Will serve as the Gender and Social Justice Living Learning Community Common Course and each year will change topics. Offered by Women & Gender Studies (p. 2286). May be repeated within the degree for a maximum 12 credits.

**Recommended Prerequisite:** This course is intended for students who are enrolled in the Gender and Social Justice Living Learning Community only.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 319: Gender, Health, and Culture in the United States.** 3 credits. Examines issues related to gender, culture, and health in the United States from a variety of interdisciplinary perspectives. Encompasses racial and ethnic identification, geographic region, sexual orientation, gender identity, generational status. Will be framed to emphasize the interplay between cultural, social, economic, environmental, and political factors associated with health, and methodological issues in research on
400 Level Courses

WMST 400: Internship in Women and Gender Studies. 1-3 credits. Community- or campus-based service or experiential learning related to women's or gender issues. Independent course in which students develop, in consultation with a faculty member, individual contracts defining the learning and competencies they plan to gain from the experience. Includes a paper and/or portfolio component. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

Recommended Prerequisite: WMST 200 or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 330: Theoretical Perspectives in Women and Gender Studies. 3 credits. Introduces students to theoretical work in feminism, women's and gender studies, and queer theory. Examines the history of feminist and queer theories, key concepts and thinkers, and the intersection of feminist and queer theories with other areas of social analysis such as race and class. Explores social inequalities and forms of resistance. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

Recommended Prerequisite: WMST 200 or permission of instructor.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 375: Gender, Race, Sexuality, and TV. 3 credits. Focuses on constructions of race, gender, and sexuality in contemporary and classical television and how these identity groups are represented on television today. Examines the genres of television programs and how the medium of consumption of television is important when looking at reception of a series (Prime Time, Netflix, etc.). Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 390: Study Abroad. 1-3 credits. Study abroad under supervision of George Mason University faculty. Course topics, content and locations vary. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 399: Current Topics in LGBTQ Studies. 3 credits. Examines contemporary issues and policies within LGBTQ issues. Explores the intersections of race, gender, age, class, disability, and national identity in relation to LGBTQ identities. May be repeated for credit when the topic is different. Offered by Women & Gender Studies (p. 2286). May be repeated within the term for a maximum 18 credits.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 400: Internship in Women and Gender Studies. 1-3 credits. Community- or campus-based service or experiential learning related to women's or gender issues. Independent course in which students develop, in consultation with a faculty member, individual contracts defining the learning and competencies they plan to gain from the experience. Includes a paper and/or portfolio component. Offered by Women & Gender Studies (p. 2286). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Completion of 60 hours, WMST 200 or permission of instructor.

Schedule Type: Internship

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 401: Experiential Learning in Women and Gender Studies. 1-3 credits. Community- or campus-based service or experiential learning as it relates to a specific WMST course, taken at the same time. Students develop, in consultation with faculty member, individual contracts defining learning and competencies they plan to gain from the experience. Notes: Only 3 credits of WMST 400 or 401 may be applied toward the women and gender studies interdisciplinary minor. Offered by Women & Gender Studies (p. 2286). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Concurrent enrollment in women and gender studies course and approval of advisor and instructor.

Schedule Type: Internship

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 402: Queer Theory. 3 credits. Challenges rigid categories and definitions in order to create a space for marginalized voices. Examines the inconsistencies and erasures that often characterize notions of sex, gender, sexuality, and sexual desire. Explores categories that intersect with sexualized identities such as race, ethnicity, class, nationality, location, and age. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

Schedule Type: Lecture

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 403: Lesbian and Bisexual Theories. 3 credits. Examines how lesbian and bisexual theories intersect with other interdisciplinary areas of thought, including feminist and queer theory, psychoanalysis and poststructuralist theory, disability theory, critical race theory, and theories of transnationalism and globalization. Focuses on lesbian and bisexual subjectivities; lesbian historiography and methods; lesbian and bisexual representation in the media; and lesbian and bisexual identities in a transnational frame. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

Recommended Prerequisite: WMST 208, WMST 402

Schedule Type: Seminar

Grading: This course is graded on the Undergraduate Regular scale. (p. 84)

WMST 404: Gender, Sexuality, and Disability. 3 credits. Examines the social construction of disability as it pertains to questions of gender, sexuality, race, and class; representations of disability in literature and film; disability, embodiment, and reproductive rights; queerness and disability; the concept of “passing” and invisible disabilities: asexuality and disability; and rhetorics of disability in the U.S.
academy. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 405: Social Dynamics of Family Violence.** 3 credits.
Through seminar readings, videos, assignments, and class discussions, course explores forms of family violence, including child abuse, elder abuse, and intimate partner, and same-gender couple violence. Includes discussions of intervention, prevention and solutions. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 406: Gender and Violence in Social Institutions.** 3 credits.
Examines gender-based violence in institutions such as the military, prisons, the Catholic Church, sports, and fraternities that share structural qualities including sex segregation, high rates of violence, and internal systems of justice. Concludes by examining strategies to reduce violence in each institution. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 407: Transnational Sexualities.** 3 credits.
Explore the globalization of sexual identities, cultures, and social movements from a transnational perspective. Engaging with literature from across the social sciences and humanities, we will consider how sexual rights discourse get defined and utilized in relation to theories of desire and the body; sexual health and reproductive rights; sex work; travel and tourism; border-crossing and migration; and neoliberalism and development. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 408: Gender, Sexuality, and Human Rights.** 3 credits.
Explores the globalization of women’s and LGBTQ human rights discourses from transnational and global perspectives. Issues include: women’s human rights and the war on terrorism; rape and sexual violence; HIV/AIDS; sex work and sex trafficking; girls’ human rights; lesbian, gay, bisexual, transgender and intersex rights; and disability rights for women and sexual minorities. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 409: Gender, Sexuality, and International Migration.** 3 credits.
Explores how gender and sexuality structure contemporary processes of immigration and border-crossing in Europe and the U.S. Addresses the history of U.S. immigration controls in relation to questions of race, class, gender and sexuality; women’s and LGBTQ claims for political asylum in Europe and the United States; child migration; sex work, trafficking and migration; and feminist and queer anti-deportation activism. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 410: Feminist Approaches to Social Research.** 3 credits.
Introduces feminist approaches to social research for advanced undergraduate students. Focuses on the techniques for collecting, analyzing, and writing-up research data and examines central methodological issues raised by feminist scholars. Emphasizes a learning-by-doing approach to conducting social research. Recommended that students take WMST 330 before this course. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Specialized Designation:** Scholarly Inquiry

**Recommended Prerequisite:** WMST 410 or permission of instructor

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 411: RS: Feminist Research Practice.** 3 credits.
Undertake a semester-long research project investigating an issue of importance to feminist scholarship utilizing a variety of methods typically used by feminist scholars, including quantitative, qualitative, historical, or textual. Enhance understanding of techniques for collecting, analyzing, and writing up empirical material as well as critical engagement with ethical, interpretive, and representational considerations relating to feminist research. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Specialized Designation:** Research/Scholarship Intensive

**Recommended Prerequisite:** WMST 410 or permission of instructor

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 412: Challenging Pride: Bias Within the LGBTQ Community.** 3 credits.
Explores the other "isms" that exist within the LGBTQ community such as racism, sexism, classism, ageism, and xenophobia. Interrogates LGBTQ social movements both historical and contemporary in which many people who identify in this community are left out due to these intersecting systems of oppression. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 413: LGBTQ Issues in Education.** 3 credits.
Provides an overview of contemporary issues and concepts related to lesbian, gay, bisexual, trans, and queer persons and communities as they relate to systems, structures, and experiences within educational contexts, such as schools, museums, and community organizations.
Focuses on theories, methods, and practices to support learners and educators in settings inclusive of all sexual identities and orientations. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Recommended Prerequisite:** WMST 208

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 415: LGBTQ Health.** 3 credits.
Examines health status and health disparities among lesbian, gay, bisexual, transgender, and queer (LGBTQ) communities across the lifespan. Measurement and methodological considerations in LGBTQ health research, as well as health-related interventions targeting LGBTQ populations will be emphasized. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Recommended Prerequisite:** WMST 208: Introduction to LGBTQ Studies

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 416: Policing Black Bodies.** 3 credits.
Interrogates the myriad ways in which Black Bodies are formally and informally policed. Special focus is given to the ways in which Black women's bodies are policed not only by the criminal justice system, but also informally through sexual and intimate partner violence, forced sterilization and contraception. Course utilizes the theoretical lenses of intersectionality and of color blind racism. Offered by Women & Gender Studies (p. 2286). Limited to three attempts.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 450: Current Topics in Women and Gender Studies.** 1-3 credits.
Studies selected topics central to contemporary women and gender studies. Includes topics such as women and violence, women and international development, women's myth and ritual, LGBTQ topics, the history and politics of sexuality, disability, transnational issues and religion. Offered by Women & Gender Studies (p. 2286). May be repeated within the term for a maximum 18 credits.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

**WMST 490: Independent Study in Women and Gender Studies.** 1-3 credits.
Reading or research on a specific topic related to women and/or gender issues, under the direction of a faculty member. May involve a combination of reading assignments, tutorials, papers, presentations, or off-campus activities. Offered by Women & Gender Studies (p. 2286). May be repeated within the degree for a maximum 6 credits.

**Recommended Prerequisite:** WMST 200 or Permission of Instructor.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (p. 84)

### 500 Level Courses

**WMST 503: Lesbian and Bisexual Theories.** 3 credits.
Examines how lesbian and bisexual theories intersect with other interdisciplinary areas of thought, including feminist and queer theory, psychoanalysis and poststructuralist theory, disability theory, critical race theory, and theories of transnationalism and globalization. Focuses on lesbian and bisexual subjectivities; lesbian historiography and methods; lesbian and bisexual representation in the media; and lesbian and bisexual identities in a transnational frame. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

**Recommended Prerequisite:** WMST 208, WMST 402

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**WMST 504: Gender, Sexuality, and Disability.** 3 credits.
Examines the social construction of disability as it pertains to questions of gender, sexuality, race, and class; representations of disability in literature and film; disability, embodiment, and reproductive rights; queerness and disability; the concept of "passing" and invisible disabilities: asexuality and disability; and rhetorics of disability in the U.S. academy. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

**WMST 505: Social Dynamics of Family Violence.** 3 credits.
Through seminar readings, videos, assignments, and class discussions, course explores forms of family violence, including child abuse, elder abuse, and intimate partner, and same-gender couple violence. Includes discussions of intervention, prevention and solutions. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

WMST 506: Gender and Violence in Social Institutions. 3 credits.
Examines gender-based violence in institutions such as the military, prisons, the Catholic Church, sports, and fraternities that share structural qualities including sex segregation, high rates of violence, and internal systems of justice. Concludes by examining strategies to reduce violence in each institution. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 507: Transnational Sexualities. 3 credits.
Explore the globalization of sexual identities, cultures, and social movements from a transnational perspective. Engaging with literature from across the social sciences and humanities, we will consider how sexual rights discourse get defined and utilized in relation to theories of desire and the body; sexual health and reproductive rights; sex work; travel and tourism; border-crossing and migration; and neoliberalism and development. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 508: Gender, Sexuality, and Human Rights. 3 credits.
Explores the globalization of women's and LGBTQ human rights discourses from transnational and global perspectives. Issues include: women's human rights and the war on terrorism; rape and sexual violence; HIV/AIDS; sex work and sex trafficking; girls' human rights; lesbian, gay, bisexual, transgender and intersex rights; and disability rights for women and sexual minorities. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 509: Gender, Sexuality, and International Migration. 3 credits.
Explores how gender and sexuality structure contemporary processes of immigration and border-crossing in Europe and the U.S. Addresses the history of U.S. immigration controls in relation to questions of race, class, gender and sexuality; women's and LGBTQ claims for political asylum in Europe and the United States; child migration; sex work, trafficking and migration; and feminist and queer anti-deportation activism. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 516: Policing Black Bodies. 3 credits.
Interrogates the myriad ways in which Black Bodies are formally and informally policed. Special focus is given to the ways in which Black women's bodies are policed not only by the criminal justice system, but also informally through sexual and intimate partner violence, forced sterilization and contraception. Course utilizes the theoretical lenses of intersectionality and of color blind racism. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 550: Current Topics in Women and Gender Studies. 1-3 credits.
Studies selected topics central to contemporary women and gender studies. Includes topics such as women and violence, women and international development, women's myth and ritual, LGBTQ topics, the history and politics of sexuality, disability, disability, transnational issues and religion. Offered by Women & Gender Studies (p. 2286). May be repeated within the term for a maximum 18 credits.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

600 Level Courses

WMST 600: Special Topics. 3 credits.
Study of selected topics central to contemporary women and gender studies. Topics vary but include representation and images, violence,
public policy, international development, transmigration of labor, myth and ritual, history and politics of sexuality, psychoanalysis, and religion. Notes: May be repeated for credit when topic is different. Offered by Women & Gender Studies (p. 2286). May be repeated within the term.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 602: Queer Theory. 3 credits.
Challenges rigid categories and definitions in order to create a space for marginalized voices. Examines the inconsistencies and erasures that often characterize notions of sex, gender, sexuality, and sexual desire. Explores categories that intersect with sexualized identities such as race, ethnicity, class, nationality, location, and age. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 610: Feminist Approaches to Social Research. 3 credits.
Introduces feminist approaches to social research. Focuses on the techniques for collecting, analyzing, and writing-up research data and examines central methodological issues raised by feminist scholars. Emphasizes a learning-by-doing approach to conducting social research. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Recommended Prerequisite: 3 credits of 600-level WMST courses, or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Lecture

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 611: Feminist Research Practice. 3 credits.
Undertake a semester-long research project investigating an issue of importance to feminist scholarship utilizing a variety of methods typically used by feminist scholars, including quantitative, qualitative, historical, or textual. Enhance understanding of techniques for collecting, analyzing, and writing up empirical material as well as critical engagement with ethical, interpretive, and representational considerations relating to feminist research. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Recommended Prerequisite: WMST 610 or permission of instructor.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 630: Feminist Theories across the Disciplines. 3 credits.
Multidisciplinary course examines the central issues of feminist theory and explores the various strategies of feminist theorists. Analyzes the ways in which feminist theories have challenged established disciplinary boundaries and contested the traditional assumptions of the humanities, the social sciences, and the sciences. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)

WMST 640: Transnational and Global Feminisms. 3 credits.
Multidisciplinary course explores the complex issues women face in different regions of the world. Addresses women's diverse and shared transnational and global concerns and provides students with the tools to analyze and understand women in a global context. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

Registration Restrictions:
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may not enroll.

Schedule Type: Seminar

Grading:
This course is graded on the Graduate Regular scale. (p. 84)
WMST 690: Directed Readings and Research in Women and Gender Studies. 1-3 credits.
Advanced individualized study of gender through readings, discussion, research, and/or projects under the direction and supervision of a member of the women's studies faculty. Offered by Women & Gender Studies (p. 2286). May be repeated within the term for a maximum 9 credits.

**Recommended Prerequisite:** Admission to graduate program in woman's studies and permission of director.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Research

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

WMST 695: Internship. 3 credits.
Community or campus-based service or experiential learning related to women's or gender issues. Students develop, in consultation with a faculty member, individual contracts defining the learning and competencies they plan to gain from the experience. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

**Recommended Prerequisite:** Completion of 15 graduate credits in Interdisciplinary Studies, including 9 credits in Women and Gender Studies or permission of instructor.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Graduate Regular scale. (p. 84)

WMST 699: Capstone Portfolio. 0 credits.
Prior to graduation and in consultation with their advisor, students will reflect on and synthesize their work in the women and gender studies certificate program by selecting three items taken from their work in the program and discussing these items in a 7-10 page essay. Work selected may include course papers, videos of their performances, exhibit photos, music recordings, and other items as agreed upon by student and advisor. Offered by Women & Gender Studies (p. 2286). May not be repeated for credit.

**Recommended Prerequisite:** Students must have completed their course work for women and gender studies certificate or be in the last semester of their course work.

**Registration Restrictions:**
Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Satisfactory/No Credit scale. (p. 84)
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